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SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE

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BEFORE taking up the question of the operative treatment of exophthalmic goitre it is advisable to consider its aetiology, in order to justify the operative procedures suggested.

The onset of the disease is often apparently connected with a sudden shock or fright, or severe mental strain of some kind, and Crile\(^1\) is of opinion that psychical excitation is the most important determining factor. It was formerly regarded as more or less a nervous disease, but it is now unanimously agreed that surgical operation is indicated in suitable cases, and that the adoption of this mode of treatment has considerably improved the prognosis, more especially as regards the prevention of chronic invalidism.

Many theories have been suggested, from time to time, to explain the part played by the thyroid in the causation of exophthalmic goitre, but the majority of surgeons are now in favour of that suggested by Moebius in 1886, attributing it to interference with the normal secretory function of the thyroid gland, due to disease of that organ.

Kocher\(^2\) states that the results of his investigations indicate that there is excessive secretion of a more toxic product from the gland, which acts preferably on the sympathetic nerves and ganglia and on the heart. He, therefore, emphasizes the importance, in view of this fact, of suspecting the presence of early exophthalmic goitre in cases of supposed cardiac disease, especially if associated with palpitation. This theory of excessive secretion is supported
by the symptoms and pathology of exophthalmic goitre, which are
directly opposite to those obtaining in myxœdema, which is
assumed to be due to deficient functional activity of the thyroid
gland. Recovery is frequently proportionate to the amount of
gland tissue removed, short of complete removal, and recurrence
is connected with, and apparently dependent on, hypertrophy of
the remaining portion of the gland.

As to the nature of the disturbance of the secretory function
of the thyroid, Kocher\(^3\) concludes, from seven hundred and twenty-
one operations, that excessive secretion, the iodine content of which
is appreciably increased, develops as a result of definite histological
changes in the gland. In confirmation of this view he stated at
the German Congress of Surgery in 1911\(^4\) that he had been able
to produce exophthalmic goitre experimentally by the injection of
secretion of the gland, the gland substance, or iodo-thyroidine, and
that he found that treatment by iodine was usually followed by
aggravation of the symptoms of the condition. Klose\(^5\) concludes
from a large number of experiments on dogs, that Graves' disease
probably represents a dysthyreosis rather than a hyperthyreosis,
and that the toxæmia is identical with iodine poisoning. According
to this hypothesis a portion of the thyroid gland has lost its
normal capacity for secreting organic iodine, and secretes what
he describes as "Basedow's iodine." This releases an inorganic
form of iodine, which acts in the same manner as an intravenous
injection of inorganic iodine.

A considerable number of publications have recently appeared,
amongst the most important of which are those of Capelle and
Bayer of Bonn,\(^6\) Garré\(^7\) and Gebele of Münich,\(^8\) emphasizing the
importance and frequency of hypertrophy of the thymus in Graves' disease, more especially in cases which die after thyroidectomy. Garré found a persistent thymus in forty-three of fifty-six cases examined post mortem (seventy-seven per cent.). In twenty-four of these cases death was consecutive to thyroidectomy, and in some the hyperplasia of the thymus was associated with hyper-
plasia of the entire lymphatic system. Bonnet, Rénault, Gierke
and other French writers\(^7\) have found persistence of the thymus
in fifty per cent. of fatal cases of exophthalmic goitre. Capelle and
Bayer found an enlarged thymus in sixty per cent. of cases of
Graves' disease, and Melchior,\(^9\) who has had considerable clinical
and experimental experience, and has also summarized the literature
of the subject, believes that it is present in eighty to ninety
per cent. of cases of exophthalmic goitre. Rehn\(^10\) is of opinion
that there is a persistent thymus in nearly all the fatal cases of Graves' disease, and most writers on the subject are agreed that its presence considerably increases the gravity of the prognosis, and adds to the risk of operation.

Capelle and Bayer, as a result of very extensive researches, have arrived at the conclusion that a selective heart toxin is formed in the thymus, basing this conclusion on their experimental results. These show that the blood becomes normal after both thymectomy and thyroidectomy; that the thyroid diminishes after thymectomy; that the implantation of thymus substance prevents the development of cachexia strumipriva, and that implantation of the thymus from a patient with exophthalmic goitre produces the typical symptoms of Graves' disease in the dog. On the other hand, Gebele does not think that "thymus death" is due to persisting thymus, but to the influence of the thyroid toxin on the heart. According to him the results of experiments on dogs indicate that the hypertrophy of the thymus may be regarded as a compensatory process, the thymus hypertrophying in the attempt to compensate for deficiency of the thyroid functions and to neutralize thyroid intoxication. Capelle and Bayer do not agree with Gebele in assuming that the thyroid and thymus have an antagonistic action, but believe that they exert a parallel toxic action.

Whilst some of the writers on the subject, including Gebele, are of opinion that an enlarged thymus is an absolute contraindication to operation, others, including von Eiselsberg and Schultze, are firmly convinced that it is advisable to take the chances of an operation, with the prospect of a cure, rather than to run the risk of allowing the condition to go on. In this connexion it may be mentioned that Zesas states that he has found records in literature of twenty-one operations on the thymus for exophthalmic goitre, with sixteen cures, two improvements, and three deaths. It has been found that after removal of the thymus the thyroid gland undergoes marked atrophy.

Experiments have been carried out with the object of proving a reciprocal influence of the thyroid and adrenals, and Asher and Flack have demonstrated that small doses of adrenalin have a much more marked effect if the thyroid nerves are simultaneously stimulated. In a fatal case reported by Dr. Shepherd, of Montreal, there was great hypertrophy of both adrenals, and in some cases there has apparently been benefit from adrenal feeding.

**Pathology.** Many observers have described definite pathological changes in exophthalmic goitre, and although in some cases
enlargement of the thyroid is not noticeable clinically, Rehn states that his operations and autopsies indicate that there is invariably some increase in its volume. The chief histological changes are proliferation and cylindrical transformation of the epithelium, liquefaction of colloid material, which may be absent altogether, dilatation of the acini, and the folding in of the epithelial covering of their walls, the secreting surface being thereby greatly increased. The gland also becomes abnormally vascular.

As regards the condition of the blood in exophthalmic goitre, Kocher states that the leucocyte content is much reduced, as is also the proportion of polymorphonuclear neutrophiles, whilst the lymphocytes are increased to twice the normal number, and there is also increase of red corpuscles. Although he is in favour of surgical intervention in exophthalmic goitre, he considers the typical blood picture of such importance that he refuses to operate in its absence. Other observers, however, do not agree with Kocher in considering it pathognomonic of the disease, as in many cases the blood has been found perfectly normal. Kocher also regards rapidity of coagulation of the blood as an important indication, and has found it to be considerably delayed in many cases of Graves' disease, increasing in rapidity after operation.

**Treatment.** Although there is no doubt that spontaneous arrest or even cure of the condition may occur in a certain proportion of cases, either under medical treatment or with no treatment at all, no form of medical treatment has up to the present been suggested, the success of which has been sufficiently uniform to allow of a comparison of its results with those of surgery; and the majority of surgeons are now unanimous in the opinion that operation at an early stage is indicated, and offers the best possibilities as regards a favourable prognosis. Whilst spontaneous arrest of the disease may occur, or there may be improvement in the general condition to a certain extent, with more or less retrogression of the symptoms, complete recovery without surgical treatment is rare. C. H. Mayo\textsuperscript{16} is of opinion that although it is a well-known fact that many cases—even severe cases—may recover spontaneously or with medical treatment only, the favourable results of surgical operation in suitable cases of Graves' disease justify its being regarded as a surgical disease.

As regards the time at which operation should be undertaken, most surgeons are agreed that operations at an early stage have the best prognosis. Kocher\textsuperscript{16} emphasizes the importance of not prolonging medical treatment until the patient's resistance is
reduced by the onset of degenerative changes in other organs, and Riedel\textsuperscript{17} points out that, even in cases without obvious goitre, delayed operation entails considerable risk. He is of opinion that the prognosis is chiefly dependent upon the condition of the lungs before operation. Lénormant\textsuperscript{18} thinks that operative mortality is very greatly increased by recommending surgical interference only in advanced cases of exophthalmic goitre, when resistance is seriously impaired. In such cases, even if the patient recovers from the operation, complete retrogression of the symptoms cannot be expected, owing to the fact that secondary degenerative changes have probably already taken place in the thyroid, myocardium, and peri-ocular tissues. The length of time during which the patient should be subjected to medical treatment before having recourse to surgery varies, according to different authorities, from six weeks to six months. Some surgeons recommend that progressive cases only should be operated upon, emphasizing the fact, however, that operation should not be delayed until resistance is hopelessly impaired by organic degeneration.

If we accept the view that the symptoms of exophthalmic goitre are due to excessive or perverted thyroid secretion, and that excessive vascularization of the gland is indispensable to the development of the disease, it is obvious that the requirements in surgery are the cutting off of a portion of its blood supply by ligation of one or more of its arteries, or removal of a portion of the gland itself, with the object of reducing its secreting surface. Kocher\textsuperscript{19} finds that removal of as much of the gland as possible, short of complete removal, gives the best results, and thinks that failures in operation are usually due to removal of too little. He also\textsuperscript{20} emphasizes the importance of vascular symptoms as an urgent indication for operation.

**Contra-indications.** In this connexion the general condition of the patient should be taken into consideration, more especially in relation to the cardiac, nervous, and respiratory systems, and each individual case judged on its own merits. Amongst definite contra-indications to operation are cachexia, severe psychical disturbance, severe cardiac lesions, degeneration of the heart muscle, low blood pressure, delirium cordis, chronic nephritis and glycosuria. Gebele believes that an enlarged thymus is a very definite contra-indication, but some writers do not agree with this. Klemm\textsuperscript{21} agrees with Kocher that operation is contra-indicated at the climax of an acute attack, and recommends preliminary hydro-therapeutic treatment.
Anaesthesia. Local anaesthesia is employed by Kocher, Riedel, Klemm, Hildebrandt, Socin, and Roux. On the other hand, Kurt, Schultze, and Riedel report cases in which acute bronchitis developed after local anaesthesia.

General anaesthesia is preferred by Garré, Krecke, Crile, von Eiselsberg, the Mayos, and others; and of the various methods which have been recommended, that devised by Crile\(^4\) seems to be the best. With the object of avoiding psychical shock, the patient is gradually accustomed to the administration of anesthetics under the form of inhalation treatment, and on the day of operation ether is added to the usual inhalation. Half an hour before the operation is performed Crile gives an injection of a sixth of a grain of morphia, and one one-hundred-and-fiftieth of a grain of atropine.

The methods of operation most commonly employed are, ligation of the thyroid arteries and partial thyroidectomy, the latter being attended with the most satisfactory results. Complete bilateral resection of the cervical chain of sympathetic ganglia has also been done in a few cases by Jaboulay and others.\(^{22}\)

Ligation of one or more of the thyroid arteries is now used as a preliminary or accessory to partial thyroidectomy, and Mayo\(^{23}\) thinks that in at least a quarter of the cases which come under observation this preliminary procedure is advisable, and considerably reduces the risk of subsequent thyroidectomy. It has also sometimes been recommended for cases in which the symptoms are so exceedingly severe as to contra-indicate thyroidectomy, but Mikulicz\(^{24}\) is of opinion that it is more difficult and dangerous than the latter operation. Partial thyroidectomy, either alone or combined with ligation of the arteries, is now considered to be the most satisfactory operation. Kocher prefers repeated operations, the patient being kept under close observation in the intervals, and C. H. Mayo states that the adoption of this method of “graduated operation for hyperthyroidism” has reduced his operative mortality from four to two per cent.

Statistics of Operation. The earliest statistics of thyroidectomy show a mortality of from ten to thirteen per cent., but this has since been greatly reduced, owing to the improvement in surgical technique, and above all to the earlier stage at which cases are now operated upon.

In 1901 Kocher\(^7\) published his first series of sixty cases operated on by partial thyroidectomy, with a mortality of 7 per cent. In 1907 Heineck collected three hundred and seventy-six of Kocher’s
cases, with a mortality of 3'9 per cent. In 1908 Kocher reported two hundred and fifty-four cases, with 3'5 per cent. mortality and 38 per cent. cures, one death only occurring in the last ninety-one operations. In 1910 he reported four hundred and sixty-nine cases with 3'4 per cent. mortality, and stated that whilst in one hundred and seventy-six cases operated upon four years previously he had a mortality of 5 per cent.; in seventy-two cases operated upon between January and July, 1910, there was only one death, due to nephritis, representing a mortality of 1'3 per cent. In 1911 \(^{25}\) he reported one hundred and sixty-seven operations with 2'3 per cent. mortality. In some of his successful cases three or four successive operations were performed, and his results indicate that retrogression of the vascular symptoms is of the greatest importance in relation to prognosis. Exophthalmos subsided in about three-fourths of the cases. In some of those in which operation failed to cure there was a tendency to neurasthenia, and it should be borne in mind that a neurasthenic tendency has considerable influence on the onset and course of Graves' disease.

C. H. Mayo\(^ {26}\) performed his first operations for exophthalmic goitre about eighteen years ago, when extremely severe cases only were regarded as suitable for surgery. In his first series of sixteen cases the mortality was 25 per cent.; in the next forty cases, 7'5 per cent., and in a recent series of one hundred and sixty cases operated on at St. Mary's Hospital, Rochester, there has not been a single death. Between 1906 and 1910 he performed four hundred and fifty-nine partial thyroidectomies with a mortality of 2'4 per cent., and during the same period two hundred and sixty-seven primary ligations with a mortality of 4'1 per cent., the reason for the higher mortality in the latter operation being that it was done in some extremely severe cases, in which thyroidectomy was considered unjustifiable. Exophthalmos is frequently the last symptom to disappear. In a more recent paper\(^ {27}\) he states that he has performed altogether over one thousand operations, with a mortality of 3'7 per cent. from ligation of the vessels, and 3'9 from thyroidectomy.

Rehn\(^ {28}\) collected one hundred and seventy-seven cases operated upon before 1900, with a mortality of 13'6 per cent., 57'6 per cent. cures, 27 per cent. improvements, and 2'5 per cent. of cases in which the disease was arrested. Bodolec\(^ {28}\) has collected five hundred and fifty-four cases from literature since this date, including those of Mikulicz, Krönlein, Garré, Kümmel, König, Curtis, Mayo, Lessing, Hartley, Huntingdon, Riedel, and Landström, with 7 per
cent. mortality, 75 per cent. cures, 16 per cent. improvements, and arrest of the disease in 1.6 per cent.

Krecke reports a mortality of 9 per cent. in eight hundred and eighty-eight cases collected from various clinics, Riedel a mortality of 20 per cent. in fifty cases operated on previous to 1905, and 3.1 per cent. in thirty cases operated on between 1905 and 1908. In his experience tachycardia was the first symptom to disappear, and a certain amount of exophthalmos invariably persisted.

In 1909 McWilliams collected ten hundred and fifty-five cases from the literature, including some operated upon by Kocher, Mayo, Klemm, Garré, Riedel, Krecke, Halstead, and Ferguson, with a mortality of 4 per cent.; 16 per cent. were completely cured, and 85 per cent. were able to resume their occupations and lead an ordinary life. At the Congress of German Surgeons, held at Carlsruhe in 1911, Kümmel reported a mortality of 5 per cent., and von Eiselsberg seventy-one cases with six deaths, all due to hypertrophy of the thymus. Exophthalmos persisted in all von Eiselsberg's cases.

Küttner has compared the medical and surgical statistics of Graves' disease at the Breslau clinic during the last eighteen years. The medical mortality is 35.7 per cent., and none of the survivors is able to work. Of the sixty-three cases operated upon, eleven died (17 per cent.), these being very advanced cases. Of the survivors, thirty-seven have been followed. Cure is complete in 33 per cent., there is very great improvement in 36 per cent., and great improvement in 16 per cent., these patients being able to lead an ordinary life.

Chalier summarizes the thirty-one cases operated upon by Jaboulay by resection of the sympathetic, the mortality being 19 per cent. There was immediate improvement in all cases, most marked in relation to exophthalmos, which completely disappeared in seven cases, and three were complete cures.

Riedel's statistics show that if the cases are divided into slight, medium, and severe, the slight form, with scarcely any mortality, gives constant results; the medium form 6 per cent. mortality, with 66 per cent. cures; the severe form 28 per cent. mortality, with 57 per cent. cures. As medical treatment gives a mortality of 12 per cent., rising in the severe cases to 23 per cent., it is obvious that surgical treatment, which gives 85 per cent. successful results, should be considered in every case.

Causes of Death. Kocher states that in approximately half of his fatal cases death has been due to post-operative pneumonia
or embolism, and that status lymphaticus appears to be the most serious and dangerous complication. In some of his cases autopsy revealed extensive fatty degeneration of the liver, kidneys, and heart. Capelle has collected a number of cases from literature, and states that 95 per cent. of those who died during or after operation had persistent and enlarged thymus. Most surgeons agree in the opinion that in a large proportion of the fatal cases death is due to cardiac weakness and insufficiency, and Hildebrand advises that in these cases the ordinary cardiac examination should be supplemented by examination with the electrocardiograph.

**Immediate Results.** Dr. Albert Kocher concludes that there is almost invariably a certain amount of improvement in the symptoms, and that if the patient is carefully prepared for operation, and if it is performed by a skilful surgeon, a large proportion of cases are practically cured. Crile agrees with this. He states that no case has come under his observation which has not been benefited by operation, and that he knows of few conditions in which such deep and fundamental relief results from it as in that of acute toxic exophthalmic goitre. The striking variations in the proportion of cures given by different writers are largely due to the different significance attached to the word "cure." Garré thinks that for practical purposes a patient may be regarded as cured if he is able to resume his ordinary occupation and lead a normal life.

Several writers, including Kocher, Krecke, and Rehn, report temporary exacerbation of the symptoms after operation. Kocher believes that this is due to acute organic degeneration and necrosis, notably of the liver and kidneys, which results either from toxæmia due to thyroid secretion, or from a special susceptibility of individuals suffering from Graves’ disease to the action of certain toxins. Excessive absorption of thyroid toxin by the wound has been blamed for this exacerbation, but Rehn points out that it may occur after any operation whatever in a case of exophthalmic goitre, or even before operation. In cases that recover, improvement is very gradual, and most surgeons agree that exophthalmos persists to a certain extent in a comparatively large proportion of them. Krecke found that nervous symptoms subsided rapidly after operation.

**Remote Results.** A study of the statistics indicates that permanent improvement at least follows operation in the majority of cases. Garré states that in over twenty of his cases, operated upon five or more years previously, exophthalmos had disappeared
in a third of the cases, and in four only was there no improvement in tachycardia. Nervous symptoms persisted in two thirds of the cases. Alamartine and Perrin\textsuperscript{35} summarize the cases operated upon three years previously in the clinics of Mikulicz, Krönlein, Kocher, Kümmel, Riedel, Garré, Berg, and Ackermann. Cure was complete in 70.8 per cent.; 22 per cent. were greatly improved, and the remainder unimproved. Theodore Kocher\textsuperscript{36} reports four cases which remained free from recurrence for twelve, eight, seven, and four years, respectively.

Risks of Operation. These include cachexia thyreopriva, tetany, post-operative haemorrhage, post-operative infection, and wounding of the recurrent laryngeal nerve.

Cachexia thyreopriva is due to removal of too large a portion of the thyroid tissue. It was formerly customary to remove half of the gland only, or one lobe and the isthmus. During the last few years, however, it has been the custom to remove a much larger amount of the gland, and the results have very much improved since this has been done. In a severe case it might be sufficient to remove half of one lobe at one operation, and subsequently, when the patient's condition has improved somewhat, to remove half or two-thirds of the remaining lobe, and it will often be found necessary to do this before a cure is effected.

It has been demonstrated experimentally that acute convulsions and tetany result from removal of the parathyroids, which are small ovoid bodies, usually four in number, lying behind the thyroid, in relation to its arterial supply. Nothing is known with certainty as to their function, but if the thyroid is completely removed, whilst the parathyroids are carefully preserved, myxedema develops, but not tetany. C. H. Mayo\textsuperscript{15} is of opinion that the presence of one normal parathyroid is sufficient to prevent tetany, and in more than three thousand operations upon the thyroid he has observed only one slight case of it. In some cases the administration of Beebe's preparation of parathyroid nucleoproteid in the early stage of tetany has arrested its further development. It has been suggested by some writers that the changes in the body of the thyroid in Graves' disease are dependent upon lesions of the parathyroids.

I have had some very striking results in exophthalmic goitre, having operated altogether upon fifty-six cases with four deaths. In two of the fatal cases there was an enlarged thymus gland. A third case died of tetany, and a fourth of pneumonia. In all the cases which recovered, there was marked improvement in the
symptoms. In about half the cases improvement was very rapid, the pulse dropping in the course of a few days from one hundred and forty or one hundred and fifty to ninety, and the nervous symptoms rapidly subsiding. Seventy per cent. of the cases were completely cured, and in eighty-five per cent. there was such marked improvement that the patients were able to resume their ordinary avocations. One case developed myxœdema, but this condition is kept in check by the administration of thyroid extract. In this case the symptoms of Graves' disease have been very markedly improved.

One patient, a man of sixty-five, had suffered for a couple of years from exophthalmic goitre, and had spent the six months preceding operation in an asylum. I removed one lobe of the thyroid and half of the other one under local anaesthesia. His pulse rate varied from one hundred and sixty to one hundred and eighty prior to operation, and the nervous symptoms and exophthalmos were very marked. After the operation the pulse gradually dropped, until at the end of a week it was ninety to ninety-six, and all the symptoms rapidly retrogressed, until at the end of a month he left the hospital practically cured, and in three months resumed his usual occupation, which was that of a watchman in the Sarnia tunnel.

Another patient, a woman of thirty-five, suffered acutely from the disease, with very marked exophthalmos and nervous symptoms, and a pulse varying from one hundred and forty to one hundred and sixty. She was in such a distressing mental condition that her husband told me that if she did not improve he would have to leave her. After the operation there was rapid improvement, until at the end of four months her pulse was eighty, the nervous symptoms had practically disappeared, and the exophthalmos had markedly improved. She commenced to put on weight, and at the end of a year I met her one day running her own motor car through the streets of the city in perfect health, without any of the old symptoms.

I have had several other cases with improvement almost as striking, many of them being patients who have tried medical treatment for many months without benefit. So that I have no hesitation in saying that surgical treatment should be undertaken if, at the end of two months—or at the most three—marked improvement has not occurred under medical treatment, and that we are justified in expecting a large percentage of cures if operation is undertaken at this early period.

I do not think that an operation should be performed in the
late stages of the disease, and would urge medical men to submit their cases to surgical treatment at an early period, before there is marked cardiac involvement and other changes which would militate against recovery. It is not fair to surgery to keep these cases under medical treatment at a time when surgery can give them relief, and to only refer them to a surgeon for operation when such degenerative changes have occurred as will make it impossible to operate with any likelihood of success. In other words, surgery should not be considered merely a dernier ressort, as the statistics of Charles Mayo, Kocher, Crile, and others show conclusively that the best results in Graves' disease are obtained from early surgical intervention.
References:—

7. Garre, Presse Méd., 1908, xvi, 129.
11. von Eiselsberg and Schultze, German Surgical Congress, 1911.
31. Kuttner, 40th Congress of German Surgeons, 1911.
33. Hildebrand, Discussion, Congress of German Surgeons.
34. Crile, Lancet Clinic, 1910.
MINKOWSKI and Bettman described, in 1900, a series of cases of jaundice presenting several interesting features. The patients were hardly ever affected by the jaundice. There was no bradycardia, no irritation of the skin, and no xantheloma. The tint was unmistakable and increased after exertion, cold baths, or even after fits of anger. Definite pathological changes were to be found in certain organs; the spleen was enlarged and showed hyperplasia and hyperemia. The liver was somewhat enlarged, but no special changes were found in it, and the bile passages were quite clear. The kidneys were marked by a siderosis similar to that found in pernicious anemia. This pigment was later found to be iron and to be confined to the kidneys. The blood picture was that of a secondary anemia without nucleated red cells, but with polychromatophilia, and with a fairly large number of large red cells which were taken to be quite young.

Minkowski considered that the whole process depended upon a primary lesion in the spleen; that the blood cells were destroyed there, and that the jaundice came from the increased pigments in the serum arising from the great blood destruction. Somewhat later Chauffard observed that the red blood cells of individuals suffering from this malady were not so resistant to hypotonic sodium chloride solutions as were those of the normal individual. If the red blood cells of a normal individual are washed free from serum and dropped into a series of tubes containing progressively diminishing percentages of NaCl,—say from that of normal saline '85 per cent. down to '80 per cent., '78 per cent., '76 per cent., '74 per cent. and so on down to nothing—it will be found that the normal cells show no trace of hemolysis until '42 per cent. of NaCl is reached, and that there will not be complete destruction of the cells until
about '18 per cent. In this condition, however, it was observed that the cells so treated commenced to hæmolyse at '66 per cent., or even higher, and that the stage of complete hæmolysis was reached at about '34 per cent. Further, the same writer noted that if a stain, such as Unna's polychrome methylene blue, were dropped on to the skin, and the blood obtained from a prick through the drop, so that the cells might be stained without fixation, many of the cells showed a curious reticular granulation. Normally this is seen in 1 to 2 per cent. of blood, but in this condition and in infants' blood, and in blood after severe hæmorrhages, the percentage may rise to as high as 10 or even 40 per cent. Vaughan, who first described this finding, thought the presence of so many such cells a sign of new blood, and the majority of investigators have agreed with him.

The urine is always highly coloured from the presence of large amounts of urobilin, but never contains bile pigments. The stools are normal in colour. The blood is characterized by a slight leucocytosis, and by an anæmia that varies and upon which the patient's symptoms generally depend. They are also frequently subject to attacks of gall-stone colic, though many have been operated upon without stones being found. Many are well, "being icterics rather than patients," as Chauffard says, and none have ever complained of the bradycardia, pruritus, or tendency to hæmorrhages so commonly found in jaundice.

Recently we had the opportunity of seeing a well-marked case of this malady. A. B., aged thirty, white, male, settlement worker, complained of pain in the right scapular region, jaundice, headache, and constipation, all of which have dated more or less from his early childhood. His father died at the age of sixty from some acute illness, and he had been yellow all his life. One half-brother on the paternal side was always very yellow and died in India at an early age. The patient has never had any acute illness since childhood. He has never had typhoid fever, pneumonia, or malaria, nor has he ever lived in any locality where malaria is endemic. Once, about five years ago, he had pruritus, when he remembers that the jaundice was severe. He has never had any other skin trouble, he has no tendency to hæmorrhages from the stomach or elsewhere, and his pulse is always about seventy. About the same time he was told that his spleen was large. He had felt full there and thinks that the size of the spleen has not changed. He is a pale, rather nervous man, with quite marked jaundice in the skin, conjunctivæ, and palate. The eyes are prominent, but there is no
further sign of hyperthyroidism. The tongue is pale and somewhat frothy. The throat, chest, glands and joints are normal. There is no undue pigmentation of the skin. The abdomen is large, pendulous, rather lacking in tone. It moves freely in respiration. On palpation there is some tenderness over the left side generally. The spleen is much enlarged, reaching to the right of and below the umbilicus. It is firm, smooth, and not tender on deep palpation, and moves freely on deep respiration. The liver reaches from the sixth interspace to two finger breadths below the costal margin in the right nipple line. It is firm, smooth, and not tender. The stomach is not abnormal. The reflexes are normal.

The blood flowed freely, clotted in about normal time, and there was about 70 per cent. haemoglobin (Dare). The white blood cells numbered nine thousand, the reds three million five hundred thousand to the cmm. In the fresh preparations, the reds were about normal in size, a few were larger and all looked rather pale. Stained by Hasting's stain, the whites showed no marked abnormality; there were no young forms. No nucleated reds were found, but there was quite evident polychromatophilia. When Unna's stain was used, a slight increase in the number of reticulated cells as compared to the normal, was found. When the washed corpuscles were added to hypotonic salt solutions, it was found that there was initial haemolysys at '56 per cent. and complete at '36 per cent. The stools were dark in colour, not increased in volume, and showed no peculiarity. The urine passed per day was about normal in amount, dark in colour, acid, sp. gr. 1025, and contained no albumen, or sugar, or bile pigment. With zinc acetate and ammonia, there was an intense greenish fluorescence, and the spectroscope showed the test for urobilin.

An attempt was made to estimate the amount of urobilin passed in the urine and faeces in one day by the method employed by Simpson.1 The urine collected for twenty-four hours was treated with dilute sulphuric acid and exposed to the light for some time to convert the urobilinogen into urobilin. It was then saturated with ammonium sulphate, and the precipitate filtered off and extracted with chloroform. After evaporating off the chloroform the remainder was taken up in water, reprecipitated with ammonium sulphate, again extracted with chloroform, and this series of operations repeated a third time. The residue left after evaporating the final chloroform solution weighed 66 mgms. A solution of this preparation containing 16·1 mgms. in one litre just showed the
urobilin spectrum to be seen when examined in a layer 15 mm. thick with a Schmidt Haensch pocket spectroscope with scale and electric illumination. (Catal. D No. 230.) The faeces passed on the same day, the bowels having been opened regularly for some days previously once a day, were mixed with water, acidified with sulphuric acid, and allowed to stand exposed to the light. The mixture was then filtered, and further extraction of the solid material proceeded with till, on filtration, the extract was practically colourless. The mixed filtrates measured three litres, and a portion diluted twenty times still just showed the spectrum of urobilin to be seen in a layer of 15 mm. thick.

Whereas, therefore, the preparation from the urine could be diluted to four litres and still show the urobilin spectrum under the standard conditions observed, that from the faeces could be diluted to sixty litres; there was thus found fifteen times as much urobilin in the faeces as in the urine. Simpson, observing similar conditions, found that this dilution corresponds to a solution of 10 mgms. in one litre of a preparation of pure urobilin prepared according to the method of Garrod and Hopkins, and calculated the amount of urobilin in various samples of urine and faeces on this basis. Calculating similarly from our data, namely, that under the conditions that we observed, the standard dilution of urobilin contained 16 mgms. in one litre of a preparation of urobilin prepared from urine as described above, we should arrive at the result that the urine contained 66 mgms. of urobilin, and the faeces 996, and that the total excretion of urobilin amounted to 1.05 grms. in the twenty-four hours. But apart from the fact that the preparation of urobilin that we obtained from the urine was not prepared strictly according to the method of Garrod and Hopkins, even if it had been, it is doubtful, in the light of the work of Hans Fischer, whether quantitative estimations of urobilin can be based on such preparations at all. However, comparative results may be obtained, and the urobilin excretion in this case may be compared with that in those examined by Simpson. We took the twenty-four hour specimens of urine and faeces from a normal adult and treated them in the same manner as the specimens from A. B. were treated. No absorption bands in the spectrum for urobilin could be seen in the urine extract, at any dilution, but when the faecal extract was diluted up to ten litres, there was still a faint absorption to be seen under the standard conditions related above. That is to say, there was at least six times as much urobilin in the extract of the patient as in that of the control normal adult. From such a comparison
it is clear that the excretion was very high, and the amount of blood pigment destroyed must have formed a considerable proportion of the whole, considering that the total amount of hæmatin in the body cannot be much more than thirty grams.

It is interesting to note that notwithstanding this great destruction of red blood cells, as evidenced by the urobilin excretion, the blood shows in the Romanowsky and Unna preparations very slight evidences of active regeneration. Luzzatto and Ravenna\(^3\) have shown that while the presence of polychromatophilia and of nucleated red cells in the blood is no evidence of the degree of the severity of the anæmia, still it shows increased activities of the marrow and of the hæmatopoietic cells. Here is a case where the loss of blood must have been excessive for a long period, and yet the cells morphologically show little change. Banti\(^4\) thinks that the cause of the trouble lies in the fact that the spleen not only has its normal function of destruction of the red blood cells considerably raised, but that it has the added faculty of reducing the resistance of the cells to hypotonic salt solutions. Lintvarev\(^5\) has recently described a similar case wherein he found, in the spleen and in the liver tissue, a large number of cells that were evidently destroying the red cells. They were about ten or twelve times as big as a red cell, of a plastic viscid protoplasm, and filled with red cells undergoing destruction. He and Dehn\(^6\) thought that all cases of hæmolytic jaundice could be explained by the presence of these cells, but no other writer has reported their presence in any of his cases. Dehn further considered that these cases would be much benefited by x-ray treatment acting upon the lymphoid tissues which he thought hypertrophied, and showed that splenectomized dogs withstood the action of hæmolytic poisons much better than normal dogs. Pel\(^7\) has recently shown that while the resistance of the dog's red cells to hypotonic salt solutions is the same as in man, it rises after splenectomy so that the first trace of hæmolysis is at '35 per cent. instead of '42 per cent. This increased resistance remains constant for over a year, it is not explainable by any change in the serum, and no difference could be shown in the red or white cells after splenectomy.

Recently we have had the opportunity of investigating the blood of two patients who had splenectomy done. One, a man of forty-five years, had his spleen removed eighteen months ago for splenic anæmia of the Gaucher type; the other, a man of eighteen, had his excised four months ago owing to a severe kick from a horse. In the latter, there was no change in the resistance of the red cells;
in the former, there was initial hæmolysis at '40 per cent., which must be considered well within the laboratory error. In neither case was there any excess of granulated cells when stained by Unna's stain. Banti (l.c.) has reported several cases treated by splenectomy. One patient operated upon in 1903 has remained healthy ever since. The spleen showed none of the large cells considered so important by Lintvarev and Dehn, but only hyperplasia, hyperæmia, and marked phagocytosis of the red cells in the pulp and sinuses, by cells found normally in the spleen. Other cases related by Banti and by Roth have been equally successful. In the latter's case the patient was still slightly icteric and the resistance of the reds still low—there was initial hæmolysis at '58 per cent. sodium chloride; but he had no anæmia and could work hard in spite of some epileptic attacks from which he had long suffered.

It will be seen that the symptoms are those of anæmia, and that the predominating clinical signs in the common case inconvenience the patient little or not at all. While no definite ætiology can be found, there seems little doubt that the primary cause of trouble is in the spleen, though there is no evidence to show that there is any specific hæmolysin there. Guizzetti has recently reported on a large family of persons afflicted with this anomaly; there were two deaths with autopsy and signs of congenital syphilis. The spleens, while large, were not nearly so large as those found in almost all other spleen affections. Probably the jaundice is due to the deposits of urobilin in the tissues, for the serum is yellow, and while bile pigments have not been found in the serum, urobilin has been found there several times. Further, there is no reason to believe that the liver is producing an excess of bile or that there is any absorption by the capillaries. The skin affections of itching and xanthoma and the bradycardia are evidences of bile in the serum, but they are transitory and often not present when the jaundice is at its worst.

If it is admitted that the spleen is the source of the trouble the outlook is better for those severely affected, as was our patient. There are methods of altering the resistance of the blood cells in animals with cholesterin or saponin, but these methods so far are inapplicable to man. But the spleen can be safely and easily removed and the great destruction of cells stopped or lessened.

We take pleasure in thanking Professor Alexander McPhedran for the opportunity of seeing this case and the case of splenic
anaemia; Dr. John R. Parry, of Hamilton, for seeing his patient with the excision of the spleen following injury; and Professor J. B. Leathes for advice and help on many occasions.

References:

A good bibliography is given by Thayer and Morris, Johns Hopkins Hospital, 1911, xxii, 95.

THE STANDARDIZATION OF DISINFECTANTS

By J. T. Ainslie Walker, F.R.S.M., F.C.S.

New York

During the last year or two the conviction has been gaining ground among Canadian medical men and public health officers that some form of official control over the manufacture and sale of disinfectants is essential in the interests of public health. In view of the recent appointment of a joint committee of the Fifteenth International Congress of Hygiene and Demography, and the Eighth International Congress of Applied Chemistry, to define a test for the bactericidal control of disinfectants, and of the interest with which the appointment of this committee has been received, the following reference to the standardization of disinfectants and the method of test officially adopted in England may not be inopportune.

The standardization of disinfectants may be described as an attempt to protect the consumer from the fraudulent manufacturer. In order to realize the gravity of this danger, even in the absence of concrete examples, it is only necessary to reflect that in this country there is no State control over the sale of disinfectants, and that consequently any preparation, however useless, may be sold legally, even when bearing a false guarantee. For municipal work, where the health department insists on all bids for disinfectants bearing a definite guarantee as to efficiency, this danger of course does not exist, though even here the degree of efficiency demanded is often absurdly low, as is evidenced by the fact that "co-efficient of not less than 2" is a common specification. But when one remembers the enormous extent to which disinfectants are now used by the community at large, the crying need for reform must be obvious.

The writer's attention was first drawn to this question by observations made by Sir Lauder Brunton, in his Croonian lectures. Up till then bacteriological tests applied by the most competent observers had little in common in the matter of method, and gave rise to many glaring discrepancies which brought discredit upon the work. Chemical analysis, accordingly, was regarded as the
main criterion by which the value of such preparations should be estimated. It was soon realized, however, that chemical composition offered no reliable index to actual germicidal activity, this value depending on the sum of a number of chemical and physical conditions connected both with the disinfectant and the material to be disinfected. Too much attention had been paid to the quantity of chemically active principle present in the disinfectant, whilst the form in which it existed was practically ignored.

Acting upon this suggestion, in collaboration with Dr. Samuel Rideal, the writer devoted a considerable period to an investigation of the subject, the result of which was the introduction of the Rideal-Walker method of expressing the germicidal efficiency of disinfectants. In substance it may be described as submitting any postulant disinfectant to direct measurement of its bactericidal strength in parallel with a dilute standard phenol solution, assigning to it a "figure of merit" based on this direct comparison.

The test consists in applying the postulant and the standard disinfectants in various dilutions to equal portions of the same culture for determinate periods of exposure in identical conditions, and observing the result by sub-culture. The dilutions of the disinfectants which kill in the same time (five minutes) stand to each other in a ratio which gives direct numerical expression to the actual disinfectant in terms immediately comparable with any similar figures which may be obtained for the next disinfectant that is examined; the ratio defining this value is termed the Rideal-Walker co-efficient. For example, if a 1 in 2,000 solution of disinfectant X will kill a certain strain of typhoid bacillus in five minutes, and a 1 in 100 solution of carbolic acid will kill the same organism in the same time (and at the same time), the Rideal-Walker co-efficient of X will be \( \frac{2000}{100} = 20.0 \). Similarly, when dealing with a disinfectant of lower bactericidal power than carbolic acid, if a 1 in 70 solution is required to perform the same task as a 1 in 100 solution of carbolic acid, the Rideal-Walker co-efficient of this disinfectant will be \( \frac{70}{100} = 0.7 \).

It at first was urged against this test that it made no provision for the presence of organic matter, a factor which, of course, must always be taken into account in actual conditions of working. To meet this objection a slight modification of the original method was introduced by Dr. David Sommerville and the writer, substituting one per cent. solutions of gelatin, mucin, peptone, serum, casein,
etc., for the distilled water employed in the original method to dilute the disinfectants under test. Working with one or other of these standard solutions of organic matter or with combinations of them, it was shown that it is not only possible, but easy, to ascertain the germicidal efficiency of any disinfectant under any given conditions of working, and, consequently, to predetermine the cost of any piece of disinfectant work. That this view has received wide authoritative acceptance is made quite clear by the fact that the Rideal-Walker method has been adopted by all government departments and public health authorities in England. In America it has been adopted, so far as the writer is aware, by only one State Board of Health, that of Maryland, a copy of whose regulation on the subject is as follows: "All disinfectants manufactured or sold in this State must bear a label showing the carbolic acid co-efficient, or relative germicidal strength of such disinfectants as compared with pure carbolic acid. In determining the relative germicidal value of disinfectants, the application of the Rideal-Walker test to the typhoid bacillus in a twenty-four hours bouillon culture may be made, and such results will be accepted until further notice. The statement of the co-efficient should be made as follows: Carbolic acid co-efficient 0·3, or 1·2, etc., etc. This statement may appear on the principal label or on a supplemental label or sticker." The result of an inquiry among the principal health officers of the United States would indicate that the majority favour the general adoption of this method.

Although legislation similar to that which has been enacted by the State of Maryland on behalf of the general public is greatly to be desired, municipal and other large consumers of disinfectants have a more direct means of safeguarding against fraud when calling for supplies of disinfectants, as will be seen from the following control clause taken from the city of Westminster proposal form, which is selected as the best worded specimen of a clause now adopted by all government and municipal departments in England:

**Disinfectant Fluid.** Any disinfectant fluid may be tendered for, provided that its guaranteed bactericidal efficiency is expressed in terms of absolute phenol as determined by the Rideal-Walker method, when working with vigorous cultures of B. typhosus, and that it is homogeneous, miscible with water in all proportions, does not separate out on standing, and flows freely from the cask at all times. The co-efficient must be given in the blank space left for the purpose in the schedule.
The following bacteriological test shows at a glance how readily the values of various disinfectants can be compared by the application of the Rideal-Walker method. Thus, in the appended table, sample No. 1 with a co-efficient of 20 for B. typhosus, i.e., having twenty times the strength of pure carbolic acid, is guaranteed to do the work of one gallon of the latter at a cost of seven cents; to perform the same work with disinfectant No. 6 would cost $5.00. Similar comparisons can be made with all other disinfectants, the cost per unit of work, i.e., the work capable of being performed by one gallon of pure carbolic acid, being obtained by dividing the price per gallon by the Rideal-Walker co-efficient.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Organism</th>
<th>Rideal-Walker Co-efficient</th>
<th>Price per gallon</th>
<th>Cost of disinfectant equivalent to one gallon of carbolic acid</th>
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<tr>
<td>1</td>
<td>B. typhosus</td>
<td>20.0</td>
<td>$1.50</td>
<td>$0.07</td>
</tr>
<tr>
<td>2</td>
<td>&quot;</td>
<td>5.0</td>
<td>1.00</td>
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<tr>
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<td>1.00</td>
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<tr>
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<td>&quot;</td>
<td>0.02</td>
<td>1.20</td>
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</tr>
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</table>

The following is a list of the candidates who have successfully passed the final examination of the College of Physicians and Surgeons of Ontario: Fred Beheimer Bowman, Hamilton; Donald Robert Cameron, Lancaster; Charles William Lloyd Clark, Toronto; James Daniel Collins, London; Andrew Pritchard Davies, Hull, Quebec; Edwin Elliott, Chesaning, Michigan; Susie L. Fotheringham, Toronto; James Douglas Galbraith, Iona Station; Herbert Clegg George, Port Hope; Richard Emerson Guyatt, Binbrook; William Thomas Hand, Byng Inlet; Frank Russell Hassard, Toronto; Joseph Austin Keeley, Arthur; Walter James Kirby, Toronto; John Gagen Lee, Toronto; Arthur Lipman, Kingston; Lily Falardeau Boyington Mathieson, Fort Rowan; Albert Franklin Mavety, Toronto; John Le Roy Mavety, Ottawa; Robert Walter Munro, Uxbridge; John Fleming McCracken, Brussels; Laura Merriam McLaren, Guelph; Russell Leonard Parr, Toronto; John Spurgeon Schram, London; Louis Joseph Sebert, Brooklin, Ontario; Herbert Leo Sims, Ottawa; William Wallace Smith, Guelph; James Douglas Struthers, Port Elgin; Edward Roy Tyrer, Toronto; Benjamin Philip Watson, Toronto; Clarence Randolph Young, Guelph.
THE OPERATIVE TREATMENT OF CLEFT PALATE

By Philip Weatherbe, M.B., Ch.B. (Edin.)

Surgeon to the Children’s Hospital, Halifax, N.S.; Lecturer in Surgery, Dalhousie University

THERE is such a diversity of opinion among surgeons upon this subject, as to the time of operating and the method of closing the cleft, that I thought it a suitable question for discussion. One would expect to find it expansively and lucidly described in all modern books upon operative surgery, but is it? And should their opinion be followed? If we follow their recommendation as to the proper age at which such cases should be operated upon, and the most suitable method of closing the cleft, we are not going to have the most satisfactory results, according to the consensus of opinion of the leading recognized authorities upon this important question. I include among these the following, James Berry and Arbuthnot Lane, of London; R. W. Murray, of Liverpool; F. W. Goyder, of Bradford, and Johan Ulrich, of Copenhagen.

The history of the operative procedure is interesting: The earliest record of a successful operation upon a cleft palate is in the year 1819, by Professor Roux, of Paris, upon a Canadian studying medicine there, this was a cleft of the soft palate only. In 1831 Liston thought it was possible to close only these clefts. Ferguson, in 1844, recommended division of the levator and tensor palati muscles for the relief of tension. Billroth introduced the procedure of chiselling away the lower part of the pterygoid process, so as to relieve the tension produced by the tensor palati and the palato pharyngeus. Mason Warren, of Boston, successfully closed a cleft of both hard and soft palates in 1843, and the operation he performed—later modified by Langenbeck—is one of the three varieties of operation performed at the present time. The names of both Ferguson and Smith are sometimes associated with Langenbeck’s operation,—Ferguson, because he further modified Langenbeck’s, which modification has been abandoned; Smith, because

Read before the annual meeting of the Medical Society of Nova Scotia, July 3rd, 1912.
he advised operation before the child could speak. Until 1868
the earliest age for operation was fifteen years. At the present
time all surgeons are agreed that operation should be performed
under three years of age. The exact time of operating still remains
a disputed point, but there is a universal tendency towards earlier
operation.

There are now three distinct methods by which a cleft palate
may be closed, and each method is strongly advocated by its own
adherents. The methods are: that of Brophy, of Chicago; the
flap operation devised by Davies-Colley, and modified by Arbuth-
not Lane; and Langenbeck's, sometimes spoken of as the median
operation.

Brophy's Operation, preferably performed between the age
of ten days and three weeks, consists in thrusting the two superior
maxillary bones together, holding them in place with wires, and
then adjusting with sutures the newly pared edges of the cleft.
The operation is begun by raising the cheek, then thrusting a
strong needle on a handle through the maxilla, just behind the
malar process, above the level of the horizontal process of the
palate-bone. This needle carries a thick silk pilot-suture through
to the cleft, and its loop is pulled down towards the mouth. Then
the needle is similarly passed through the opposite maxilla, the
loop being brought down as before. This second loop is passed
through the first, which, being drawn upon, is made to bring the
second loop out through the maxilla and across the nasal fossa.
The sharply bent end of an aluminium-bronze wire is then hooked
on to this loop, and by pulling on the latter, the wire is made to
take its place. Other wires are passed in a similar manner and
attached to two oblong lead plates with holes in them, and these
are laid along the outside of the maxillae, under the cheek; the
ends of the wires, being twisted together, squeeze the jaws, so that
the cleft is obliterated, these wires being left in for a month or
more. Sutures then unite the freshened edges of the cleft in the
hard palate. The soft palate is united at a later date; according
to Brophy, at the age of sixteen months. He also advises closure
of the lip two months after the first operation.

The Turn-over Flap Method of Lane is done as early after
birth as possible. The general principle underlying his various
operations, is to close the interval between the edges of the cleft by
muco-periosteum in the case of the hard palate, and by mucous
membrane and submucous tissue, in the case of the soft palate.
How this is effected in any particular case must depend on the
conditions present, such as the age of the child, the presence or absence of hare lip, the shape and extent of the cleft, the state of dentition, and the thickness of the soft parts along the edge of the cleft; and the surgeon must be guided entirely by his instincts and experience, as to the best method of closing any particular cleft. The hare lip should be closed at the same time as the cleft in the palate. In complete clefts of the hard and soft palate a large muco-periosteal flap from one side of the palate, with its hinge along one margin of the cleft, is turned across the cleft so that its free edge can be stitched beneath the muco-periosteum, detached along the whole length of the opposite side of the cleft.

Langenbeck's Operation is carried out between the ages of one and three years, according to the extent of the cleft. The operation consists of: detachment of the muco-periosteal tissues from the oral surface of the bony palate; detachment of the soft palate from the posterior edge of the palate bones; paring the margins of the cleft; suturing the pared edges; making, if necessary, lateral incisions to relieve tension.

The detachment of the muco-periosteal tissues from the oral surface of the bony palate is done through a puncture near the alveolar margin, working from without inwards. The puncture should be made outside the posterior palatine artery, close to the alveolar margin, near its posterior extremity. Through this wound a raspatory raises the muco-periosteal tissues from the bone, the separation being continued inwards. Remove a strip of mucous membrane from the whole edge of the cleft. Separate all the muco-periosteum from the hard palate up to the alveolar process. In freeing the soft palate from the posterior edge of the hard, leave intact the oral mucous membrane, which is continuous from hard to soft palate. Divide with fine curved scissors both the nasal mucous membrane and the tissues attached to the posterior edge of the hard palate. This is one of the most important steps in the operation. Allow the muco-periosteal flap, obtained from the hard palate, to drop towards the mouth, and with it the soft palate. Repeat these procedures on the opposite side.

Commonly, the raw edges of the flaps thus obtained will come into apposition without tension. If they do not, it is necessary to make a lateral incision through the muco-periosteum, parallel and close to the alveolus on one or both sides of the mouth, and extending from the lateral incision back to the posterior margin of the hard palate. If this is insufficient to relieve tension, pass a fine chisel through the posterior angle of the lateral incision, directing it
obliquely inwards and upwards, thus severing the hamular process. This procedure gives perfect relaxation of the soft palate, and does not injure its muscles. Incisions through the soft palate dividing its muscles are often recommended, but the above method is more satisfactory. Lastly, the edges of the cleft are sutured together with silk-worm gut, silk, or linen thread.

There have been some recent improvements made in this operation. Charles Mayo, of Rochester, has suggested the use of waxed tapes for the relief of tension, to surround the flaps, and these are inserted before the sutures are introduced. Sinclair Kirk pointed out in the British Medical Journal, December 31st, 1910, the advantages of the continuous suture (silk-worm gut No. 1 or 2), which can be inserted much more rapidly and easily, and which also avoids the danger of the interrupted ones. This lessens the seriousness of the operation, allowing it to be performed at an earlier age,—he says eighteen months. Wolf has still further lessened the danger, and added to its success, by separating the flaps and relieving tension,—i.e., dividing the hamular process or the muscles, laterally, in the soft palate—at the first sitting, and four or five days later suturing the divided flaps. The separated flaps readily adhere at first, and become well vascularized and somewhat thickened, while there is the further advantage that the bleeding at the second operation is very insignificant.

It is agreed that in all cases before operation, whether in infancy or later, the child must be in a state of good general health. It is also essential to have the throat and mouth free from all inflammation, and any decayed teeth removed or treated beforehand. Whatever the operation, and at whatever age the child is operated upon, it is most important to do all in one's power to prevent shock. The anaesthetic should be chloroform used in a Junker inhaler with a metal tube attached, and given by an experienced anaesthetist. The patient's position should be upon the back, with the shoulders on a sand bag, throwing the head over the end of the table, which position prevents blood reaching the throat. It is also the most convenient position for the surgeon, who stands behind, or to one side, of the patient. The suture material depends upon the method employed. In Brophy's operation use aluminium-bronze wire and silk-worm gut; in Lane's, Chinese silk-twist, used dry; in Langenbeck's, No. 1 or 2 silk-worm gut.

The after treatment depends mainly upon efficient nursing. The child should be kept quiet with small doses of paregoric or
bromide, and prevented as far as possible from speaking, crying, or coughing. The hands should be kept from the mouth, shock should be prevented, and the strength maintained. Irrigation of the mouth is not generally necessary, nor should a spray be used, as it usually causes crying and coughing, which do more harm than good. Local examination should be avoided for at least a week. Constipation should be prevented by giving a laxative, such as syrup of senna, the second night. No stitches should be removed for at least a fortnight. The failure of union or sloughing of flaps occurs from tying stitches too tightly, septic infection, bruising and laceration of the tissues by clumsy instruments; or rough handling, incomplete approximation of the edges, insufficient par- ing of the edges, inversion of the mucous membrane, and leaving the palate in a state of tension.

The late after treatment is most important. The child must be trained to speak correctly, but not earlier than six months after operation. The want of this training evidently accounts for the defective speech found after apparently successful operations. The operative treatment is generally successful, but more than one operation may be necessary to completely close the cleft.

The treatment by obturators is not satisfactory, on account of the difficulty in applying them, and the necessity for their frequent removal, especially in children; the local effects produced in the mouth by their pressure, such as inflammation, ulceration, and the accumulation of food on the upper surface, leading to foul breath.

Given a case of cleft palate at birth, what is the best procedure to follow? The operation should be performed before the child is old enough to speak properly, and the sooner it is done the better, provided it is satisfactory as regards speech. As Mr. R. W. Murray says, the operation is undertaken for the ultimate benefit of the patient, and not for the immediate satisfaction of the surgeon. The end result is the true test of success. This point is to be remembered in deciding whether the operation is more satisfactory in early infancy or early childhood. The difficulty is the length of time that must elapse before we can come to any conclusion in our own cases. Therefore the results of experienced men on this work should be carefully considered. One of the best summaries on record will be found in Berry and Legg’s recent monograph on the subject.

The operation is rendered much simpler and more successful by choosing suitable instruments. Those of Arbuthnot Lane are few in number, simple, ingenious, and most suitable. They allow one to
work in a small space with advantage, and to handle the delicate tissues with the least possible damage. Langenbeck’s procedure is unsuitable in infancy. The methods of Brophy and Lane are the only ones that can be carried out at this age. Brophy’s operation has great limitations. It is only possible up to six months of age, and in those cases with complete cleft of both hard and soft palates.

Brophy’s statistics show that in his own hands it has been satisfactory, but the authorities above referred to condemn it, after having given it a fair trial with disastrous results. This is an operation for the hard palate only, the soft palate being dealt with at the age of sixteen months. Where the cleft is complete, and unusually wide, Brophy’s procedure may at least make a later operation more certain, simple, and satisfactory.

Theoretically and scientifically, Lane’s flap method is apparently the best. He has the advantage of being able to close very wide clefts with greater ease and certainty than is possible by the other methods. There is no case unsuitable for his treatment. The cleft palate is closed before, or at the same time as, the lip, thus allowing one more room, and, if necessary, tissue from the lip to facilitate closure of the palate. The nervous and vascular systems are undeveloped at an early age, therefore one of the greatest immediate dangers of the operation is overcome, that is, shock. At birth, the tissues are in the best state for repair, because all children are healthy at that time. The operation at an early age allows full natural development of the parts. As Lane says, “restore the nose to its normal physiology as early as possible, its mechanical factor determines its development.” The flaps are well supplied with blood and there is absolutely no tension. At this age the flap is three times as broad as when the teeth develop.

The advantages of this method are proven, the disadvantages are not, although some eminent authorities strongly condemn it. If the hard palate only were closed by Lane’s method as early after birth as possible, then the child would have the full advantage of the early nasal development, the soft palate being left until a later date, to be closed by the median operation.

Those who advocate Langenbeck’s operation are convinced that for a person to speak plainly and distinctly, a well formed and freely movable soft palate is absolutely necessary. But is this so? In the Practitioner of September, 1911, F. W. Goyder says he has seen an adult patient with a soft palate cleft almost as far as its junction with the hard, whose voice was absolutely normal. There
are also children, he says, with intact palates, who have the cleft palate voice. He has notes of a child of three, whose soft palate was closed in infancy by the median operation, and whose articulation could not have been worse had the palate never been touched.

The supporters of Langenbeck’s operation claim that after his operation the soft palate is well-formed and freely movable, while, after the flap method, they say it is ill-formed, short, and so tightly drawn that the patient cannot move it, owing to its being composed so largely of cicatrical tissue; and they add that, therefore, articulation must be sadly defective after this procedure. The operation has its advantages and its disadvantages, but is the one most universally followed and advocated by the majority of those surgeons who have devoted special attention to it, and who, for many years, have had practical experience in the condition of cleft palate; and some of them have tried the three different methods before giving their final opinion.

Murray’s reason for not operating by Langenbeck’s method during the months of infancy—even when the cleft is confined to the soft palate—is that the tissues are very friable, and the bifid uvula is so small that, after paring the edges, there is not much tissue left; and the result depends in great measure on this part.

Conclusions. The evidence is not sufficiently strong to convince one as to which is the best method.

There is no doubt that, whatever procedure is followed, there must be efficient after training in speech to produce distinct articulation, and the omission of this training accounts for many failures. Until recently, enough stress has not been laid upon this important factor.

At the demonstration of cases before the surgical section of the Royal Society of Medicine in London, May, 1911, there were very few patients of the flap method shown who could talk or answer questions intelligently, as they were not old enough to have gone through a course of training in speech.

With the more recent improvements, a successful operation may be done by the median method at an earlier age than formerly.

In so delicate an operation much depends upon the anaesthetist, the assistant, and the nursing.

The advocates of the different methods are rather dogmatic in their opinions.

There seems no objection to select from either method any part that may seem appropriate for the individual case.
THE RESULTS OF TREATMENT OF SYPHILIS AS SHOWN BY THE WASSERMANN REACTION

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And Gordon Bates, M.B.,
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The two greatest difficulties in dealing with cases of syphilis have been, first, to tell whether a patient has syphilis, and, secondly, to tell when a case has been cured by treatment. Continental syphilographers have almost unanimously insisted that three to four years treatment with mercury is necessary, while the British have held that two years thorough treatment is usually sufficient. In making a diagnosis, secondary signs are comparatively obvious to one skilled in syphilology, the difficulty usually lies in the diagnosis of suspected congenital, tertiary, or latent cases.

In solving these two difficulties, the Wassermann reaction has proved to be a great aid. Not that all cases giving a negative reaction can be considered to be free from infection, but a positive reaction practically proves infection. In the past thirty months, through performing the reaction on about eight hundred sera, we have been able to follow a large number of treated and suspected cases. It is our object in this paper to summarize the results of treatment, and to analyze the cases giving positive reactions without any history of syphilis. In dealing with treatment we shall say very little about the new remedy, salvarsan, as it is of too recent introduction for us to be able to pass judgement upon its efficacy as a complete cure.

Of sixty-one cases, in which we were able to obtain sufficient history of previous treatment and which gave a positive reaction,
seven had had three years treatment with mercury, seventeen had had between two and three years, twenty had had between one and two years, and seventeen had had less than a year of treatment. In twenty-two cases which had a history of infection but reacted negatively to the test, four had had three years or more, ten had had between two and three years; seven between one and two years, and one less than a year of treatment. Put in another way, of eleven cases having had three years or more of treatment, seven were positive, and four negative; of twenty-seven cases on two to three years treatment, seventeen were positive and ten were negative; of those on one to two years of mercury, twenty were positive and seven negative, and of those on less than a year's treatment, seventeen were positive and one negative. In considering treatment we have not taken potassium iodide into account, for, except in one case, we have never found that its administration, even in larger doses, had any tendency to change a positive reaction. It probably has little or no effect in killing the *Treponema pallidum*, but is beneficial through its action in promoting the absorption of the new cells in gummata.

**TABLE SHOWING RESULTS OF TREATMENT**

<table>
<thead>
<tr>
<th>No. of years treatment</th>
<th>No. of cases</th>
<th>Wassermann Reaction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Positive</td>
<td>Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>Per cent.</td>
</tr>
<tr>
<td>3 years...........</td>
<td>11</td>
<td>7</td>
<td>63.0</td>
</tr>
<tr>
<td>2-3 years.............</td>
<td>27</td>
<td>17</td>
<td>63.0</td>
</tr>
<tr>
<td>1-2 years............</td>
<td>27</td>
<td>20</td>
<td>74.1</td>
</tr>
<tr>
<td>Less than a year.</td>
<td>18</td>
<td>17</td>
<td>94.4</td>
</tr>
</tbody>
</table>

The high percentage of positive reactions in cases on three years or more of treatment may be partly accounted for by the fact that some of these cases had symptoms, while most of the cured cases who had been on three years' treatment, having no symptoms, did not care to have a test made. The method of administration of mercury varied; one patient was given it intramuscularly for five years, and in pill form for three years. In spite of this severe treatment his reaction was positive. On the other hand one must remember that probably thirteen to thirty per cent. of the negative reactions were obtained in persons who were still infected, but in whom the production of antibodies was too small to cause a fixation
of complement, or in whom an excessive amount of natural hæmoly-
sin for sheep blood cells made the obtaining of a positive reaction
difficult. A negative reaction obtained within six months of
treatment by mercury or salvarsan is of little value, for we have
found that the same cases tested later sometimes give a positive
reaction.

In the cases treated by salvarsan, the majority showed a
negative reaction after one administration; about one-third of the
number were positive either one month or six months after treat-
ment. When salvarsan was given during the primary stage, the
Wassermann remained negative as long as followed in all cases.
Four cases reacted positively after three administrations. One of
these developed tabes within a few months. In several cases, where
the reaction was positive after long continued mercurial treatment,
it became negative after the administration of salvarsan.

Two more points which have proved interesting to us were
the large number of patients with syphilis who denied infection,
or who, having had treatment years before and having no symptoms
at the time of testing, yet gave a positive reaction. Of one hundred
and ninety-three patients who reacted positively, and who were
questioned regarding infection, forty-three (21.2 per cent.) denied
infection and gave no history of it. The nature of these cases was
as follows: fourteen, cogenital; eight, secondary; thirteen, tertiary;
two, latent; and six, paresis or tabes. In the congenital cases the
mothers were questioned. In cases remaining latent for a number
of years, disease of the aorta (dilatation or aneurysm) and aortic
valve were the commonest reminders of the old infection. So com-
monly is this fact overlooked that we feel too little attention has
been drawn to it in this country. How many practitioners realize
that over ninety per cent. of leaking aortic valves occurring after
thirty-five years of age are syphilitic in origin?

In nineteen cases of congenital syphilis, the mothers gave a
history of syphilitic symptoms in five cases, yet the Wassermann
reaction was positive in the mother in sixteen out of nineteen
tested. The babies were not tested when the mother’s blood was
positive, but nearly all cases of congenital syphilis gave a positive
reaction in the mother or in the child.

The chronicity of syphilis is well shown by one hundred and
eleven positive cases in which we were able to get the date of infec-
tion. Forty-six were of less than two years standing; twenty-
three between two and five years standing; ten between five and
ten years; and thirty-two over ten years. The large number of
over ten years duration is partly accounted for by fourteen paretics and tabetics, which are included.

Conclusions. The Wassermann reaction is the most reliable method for the diagnosis of a cure of syphilis, but it is of little value within six months of treatment, and should be repeated six months or a year later. Where symptoms persist and the Wassermann reaction is negative, as occasionally happens, the reaction should be disregarded.

A negative history of infection is of no value in making a diagnosis.

In cases of congenital syphilis the mother is probably always infected, and should be given treatment.

A history of freedom from symptoms for over ten years is not sufficient evidence that a patient is cured.

A person with a history of syphilis is never a good insurance "risk," especially for a "straight life" policy.

When mercurial treatment is adopted, it should be persisted in for at least three years after symptoms have disappeared.

Potassium iodide does not cure syphilis, and is never sufficient treatment for a lesion, whether secondary or tertiary.

One hundred and fifty-eight patients suffering from tuberculosis were admitted to the Lady Grey Hospital at Ottawa during the past year. One-third of these had been employed in indoor occupations and one-third in household work; thus, two patients out of every three admitted had been occupied indoors for the greater part of the day. The total number of patients treated during the year was about three hundred; of these seventy-four died, and over one hundred were discharged as improved or apparently cured. The cost of maintenance for the year was $17,255, being $1.10 per day for each patient.
AN APPARATUS FOR CONTINUOUS ASPIRATION

By P. K. Menzies, B.A., M.B.

Former House Surgeon, Hospital for Sick Children, Toronto

ANYONE who has had occasion to do a large amount of aspirating must have been impressed with the disadvantages and limitations of the Dieulafoy, Potain, and other types of aspirators in common use. When these are used, it is either necessary to have the whole apparatus sterilized, or to have a trained assistant to produce the vacuum. As the important parts are made of leather, considerable care is required if they are sterilized, and at best, the life of the leather is limited. Other disadvantages are the limited capacity of the receiver, the large amount of energy expended in the production of a vacuum, and the occasional dangerous mistakes in the direction of the air current.

The following is a brief description of a device which has been used most successfully for the past eight months at the Hospital for Sick Children, Toronto. A similar apparatus has been used in laboratory work for the production of a continuous vacuum. Primarily the aspirator is intended for use in a hospital where there is no central vacuum system, but it can readily be arranged for use in an office, or any place where running water is available. Essentially, it consists of a metal filter pump, a receiving bottle, and various suction tips, with connecting tubes.

As shown in the accompanying cut, the suction pump (A) is an ordinary filter pump, and may be obtained from any first-class dealer in laboratory supplies. There are various sizes, but the one shown has a diameter of five-eighths of an inch, and the upper end is threaded to fit any pipe connexion of that diameter, with the regulation screw. In our operating room, the inside of one of the faucets has been threaded to fit the pump. On the wards, however, the taps are of various sizes and not threaded, hence a firm rubber cork (B) was perforated and fitted over the upper or threaded end of the pump. The whole was then forced into the mouth of the faucet, and has worked satisfactorily.

The receiving bottle (C) has a capacity of thirty-two ounces,
and is fitted with a rubber cork, perforated by two, bent, glass tubes (D, E), the latter of which projects two inches below the cork into the neck of the bottle. The sling (F) is constructed of sheet metal, and provided with a hook for suspension under the operating table, or other convenient place. The tubing used is of pure gum rubber, and has a bore of three-sixteenths of an inch. The portion (I) running from the bottle (C) to the pump is about twelve feet long, while that (J) on the distal side of the bottle is about four feet in length. Attached to the distal end of (J), by means of a short glass tube (H), is a shorter piece of heavy tubing (G). This is easily grasped, is not easily collapsed, and into it are fitted the various aspirating tips.

All that is necessary to produce a vacuum in the bottle (C) is to have the water turned on at the tap, when the stream flows out the lower end of the pump and into the sink. This produces a partial vacuum in the horizontal arm of the pump attached to the tube (I). Thus the air is exhausted from the bottle and in turn from the tubes (J, H, G). When the tip of G is placed in any fluid, it passes along the tubes (H, J) and is collected in the receiver (C).
The apparatus has been put to various uses in the hospital, and has proved satisfactory in every case. It has been used extensively in hare lip and cleft palate work by Dr. F. N. G. Starr, and the tips (K, L) are after his design. Blood and mucus are easily drawn out of the naso-pharynx, and sponging has been reduced to a minimum. It has also proved useful in the aspiration of pleural effusions, both in serous aspirations, and in empyemas where Von Ebert's method of drainage was used. In the latter a vacuum was readily produced in the pleural cavity and the attached bulb. In bronchoscopy and oesophagoscopy it has superseded sponging, and has been used with good effect in tonsillectomies.

The advantages over the old type of aspirator will be easily appreciated. There are no complicated valves to get out of order. It is easy to keep clean, and the only parts which need to be sterilized are the tubes (J, G) and the aspirating tips. No trained assistant is necessary, for a child can turn on the water, if necessary. The only parts liable to deteriorate are the rubber tubes, and they, if pure, will last for years. When once started, by turning on the water, it will produce a continuous vacuum, and will need no further attention till the receiver becomes filled with the aspirated fluid. When this occurs, the bottle may be removed and emptied without any difficulty, and the process continued. If a less powerful suction is wanted, it may be controlled either by shutting off part of the water or by partially occluding the tube (G) with a screw clamp.

A meeting of the medical officers of the fifth divisional military area took place at Quebec on Tuesday, November 26th, under the presidency of Major Clarke. The meeting was well attended and the president was enthusiastically supported by all who were present when he stated that the purpose of the meeting was the formation of a local branch of the Military Medical Association of Canada. This was immediately decided upon and the officers elected. They are: president, Major J. C. Clarke; vice-president, Captain Vaillancourt; secretary-treasurer, Captain G. C. Lawson; committee of management, Major Delaney, Major Turcot, and Major LaRue; entertainment committee, Captain Wright, Lieutenant Geggie, and Lieutenant Hubbard.
SUCCESSFUL CATARACT OPERATION ON A PATIENT AGED NINETY-TWO YEARS

THREE years ago I operated for cataract on the left eye of W. Z., at that time aged eighty-nine years. Good vision resulted until the early part of this year, when the eye became blind because of changes in the fundus. On March 13th, 1912, I went to the patient's home in Lunenburg and performed an operation on the right eye. The incision was made in the corneoscleral margin and was followed by a small iridectomy. The extraction of the cataract left a clear pupil. I never saw my patient after the operation, but his family physician, Dr. Forbes, reported that the healing was perfect, with no discomfort and practically no redness of the eye-ball. The result was good distance vision, though scarcely sufficient to read with comfort. Doubtless some changes in the fundus are in progress. Because of the great age of my patient I considered the case worth reporting.

Halifax

E. A. KIRKPATRICK

The statistical report of the Regina General Hospital for the month of October gives the following information: two hundred and thirty-five patients were treated during the month; one hundred and forty-six were discharged, and six deaths occurred. The total number of hospital days was twenty-seven hundred and forty-two. In the Isolation Hospital eleven patients were treated, seven of whom were discharged, no deaths occurred.
A medical society is not precisely of the nature of a club. Its management concerns the whole profession and is a proper subject for fair criticism. Membership does not confer immunity against comment from persons who are not members. In matters which are purely personal we have no desire to interfere; but when the conduct of a society becomes so notorious that it attracts the attention of the daily newspapers, a medical journal is justified in placing the facts before its readers. A medical society is itself the best judge for those who shall, or shall not, be admitted to membership; but that judgement must be exercised fairly and openly. It must be dictated by the nature of the case, and must be based upon facts and not merely upon adscititious circumstances. With the best of good faith isolated instances of injustice may occur. But when the injustice is obvious, premeditated, and pursued as a settled policy, there is no remedy save for good men to withdraw from membership, and for good men who are not members to decline to become candidates. Indeed, the president of the Academy has already followed this course and has resigned; and at least three persons who would be an ornament to any society have declined to allow their names to be put forward. In a society where admission is by a majority vote there is slight chance of any misadventure; but, when a comparatively small number of votes will serve to reject, the danger is real, unless it is quite certain that the power of the minority will be exercised with the most scrupulous nicety. There is another unfortunate aspect of the case, which involves the relation between the medical faculty of the university and those who are not on the teaching staff.
This relation is always difficult to adjust in any place where a medical school exists, and it appears to have been the excuse, if not the cause, for the strange action of the Academy in rejecting the application of a university professor, who had been found worthy of admission to the Royal Society of England. The incident must have been excessively painful to the victim, Dr. A. B. Macallum, and even at the risk of causing him more pain by mentioning the circumstance we feel obliged to make some further observations.

It is frequently asserted by laymen that the petty jealousies of physicians are more to be marvelled at than those of the busy-bodies who compose the average sewing circle. Surely this performance by a minority of the Toronto Academy of Medicine in the early days of December gives colour to the criticism. The Academy was ostensibly instituted with the idea of affording the average man opportunity to meet with those who are distinguished in medical science; to keep himself in touch with advances being made, in other words, to give him and his patients the benefit of all that is best in a rapidly developing science. The Academy is not a social organization; it is a scientific society. It is now evident that a mistake was made in the constitution when it adopted a rule that might work very well in a club or lodge, but was not suited to the Academy. A dissatisfied minority that has the desire to hurt the reputation of its most distinguished applicants, may succeed at least in annoying them. It is rather remarkable that one of the best known and most honoured of Canadians in scientific circles should have been selected as the first victim; it is more remarkable that the band which canvassed for uninterested voters to accomplish their results should have succeeded. We are sure they now realize that the victory is not quite so delectable as they supposed it would be. Professor Macallum has not been injured in the least; but the honour of the Academy has been touched; the faith of the majority of its members has been shaken, and the good name of medicine has been impugned. The incident
is not creditable to medicine in Canada. Suspicion exists where harmony should rule. The one hopeful thing in the situation is that the great majority in the Academy is composed of men who regret the incident and resent the unpleasant notoriety given to the affairs of the profession.

DOMINION MEDICAL COUNCIL

On Thursday, November 7th, 1912, there occurred in Ottawa an event which, if all goes as is hoped, will make that date a memorable one in the history of medical education and practice in the Dominion. We refer to the organization of the Medical Council of Canada, the creation of which is the first fruits of the Canada Medical Act, or what is commonly spoken of as the "Roddick Bill." The prime mover in securing the passage of this Act is Dr. T. G. Roddick, of Montreal, a man well known and honoured both by the profession and the public. The condition of things which weighed upon Dr. Roddick, and for the removal of which he began his labours nearly fifteen years ago, although somewhat modified since then by other circumstances which have arisen in certain parts of the Dominion, still remains and practically prevails throughout Canada. Under existing circumstances a medical man, no matter how well qualified by diploma or by additional long experience, cannot cross perhaps a country road or stream in the exercise of his calling, if such streak on the map should happen to be the boundary line of his province, without violating the laws of the other province and becoming at least technically liable to penalties. At the same time he is unable to remove this barrier without going through the ordeal of an examination, not only in the final, practical, professional subjects but, in most cases, in the earlier scientific subjects, chemistry, anatomy, physiology, as well, and of course, in addition, paying a license fee. Such a state of matters is not only annoying and embarrassing to
the practitioner, even though to some extent he understands why the thing is so, but to the public, who cannot appreciate the reasons set forth, it seems ridiculous.

Two methods at first presented themselves by means of which it appeared that the difficulty might be removed. The first is what is known as direct, interprovincial reciprocity, by which each province would agree to accept registered practitioners in good standing coming from any other province. The second might be called indirect reciprocity, as by it each province would first secure recognition and reciprocity with Britain, and, as the natural outcome of this, interprovincial reciprocity could easily result. Attempts to attain the objects in view by the first method had failed, for reasons which need not be gone into. The method which involved that each province should first secure reciprocity with Britain has been adopted by Nova Scotia, Quebec, and Prince Edward Island, and so far as these provinces are concerned has been eminently successful. But all the provinces, for one reason or another, have not seen fit to proceed along this line.

The aim of the "Roddick Bill" which became the Canada Medical Act, 1902, was to endeavour to accomplish the object in view by creating a general medical council for the Dominion, and by establishing a Dominion qualification and a Dominion register, with the intent that any person who should obtain such qualification after examination before a board of examiners appointed by the Council or should otherwise become enregistered in the Dominion register, should, ipso facto, be entitled without further examination to registration for practise in any and every province of Canada.

The great difficulty which of course from the first confronted Dr. Roddick was the fact that under the British North America Act the Dominion Parliament could not pass an absolute Act dealing with the matter, but any such Federal legislation, in order to become operative, must be endorsed by the addition to the Medical Act of each province of what is known as an "Enabling Clause." The Medical Board of
Nova Scotia, while fully alive to the practical difficulties which would still have to be met even after the Act should become operative, was among the first, if not the first, of the provincial councils to secure the necessary enabling legislation in 1903 (Acts 1903, Chap. 63, Sec. 1). But it was not until after much discussion in the various councils and medical associations, and after a further amended Act had been passed, that in 1912 the last province in the Dominion passed an enabling clause making it possible for the Dominion Council to be organized and to begin operations under the Act.

The setting of the date and place for holding the organization meeting at Ottawa devolved, under the Act, upon the Minister of Agriculture, but instead the government appointed the Hon. W. J. Roche, M.D., secretary of state, to assist the various provincial councils in the organization of the General Council. Under directions from Dr. Roche, the bodies entitled to representation were requested to select their representatives, and later these representatives were notified to attend at Ottawa in the Parliament building on the morning of November 7th for the purpose of organization. Under the Act the Council must be composed of:

(a) three members who shall be appointed by the Governor in Council, each of whom shall reside in a different province; but until such time as the provinces of Saskatchewan, Alberta and British Columbia shall have been entitled to university representation, two of the three members so appointed shall be chosen from two of these provinces;

(b) two members representing each province, who shall be elected under regulations to be made in that behalf by the provincial medical council;

(c) one member from each university or incorporated medical college or school in Canada having an arrangement with a university for the conferring of degrees on its graduates, engaged in the active teaching of medicine, who shall be elected by the university or by such college or school under such regulations as may govern in that behalf;
(d) three members who shall be elected by the homœopathic practitioners in Canada, each of whom shall reside in a different province.

In accordance with these requirements the following representatives were selected from the various provinces:

Alberta—Dr. R. G. Brett, Banff; Dr. John Park, Edmonton. British Columbia—Dr. R. E. Kechnie, Vancouver; Dr. R. E. Walker, New Westminster. Saskatchewan—Dr. W. A. Thomson, Regina; Dr. A. McG. Young, Saskatoon. Manitoba—Dr. J. S. Gray, Winnipeg; Dr. R. S. Thornton, Deloraine. University of Manitoba—Dr. J. R. Jones, Winnipeg. New Brunswick—Dr. A. B. Atherton, Fredericton; Dr. W. W. White, St. John. Nova Scotia—Dr. A. W. H. Lindsay, Halifax; Dr. John Stewart, Halifax. Dalhousie University—Dr. D. Fraser Harris, Halifax. Prince Edward Island—Dr. S. R. Jenkins, Charlottetown; Dr. Alex. McNeil, Summerside. Ontario—Dr. W. Spankie, Wolfe Island; Dr. R. J. Gibson, Sault Ste. Marie. Queen’s University—Dr. J. C. Connell, Kingston. Toronto University—Dr. J. M. McCallum, Toronto. Western University—Dr. H. A. McCallum, London. Quebec—Dr. E. P. Normand, Trois Rivières; Dr. Arthur Simard, Quebec. Laval University—Dr. E. P. Lachapelle, Montreal. Laval University—Dr. P. C. Dagneau, Quebec. McGill University—Dr. F. J. Shepherd, Montreal.

The Governor in Council appointed Dr. T. G. Roddick, Montreal; Dr. W. Bapty, Victoria, B.C.; and Dr. G. A. Kennedy, Macleod, Alberta.

The Homœopathic representatives were: Dr. E. A. P. Hardy, Toronto; Dr. G. E. Sugden, Winnipeg; Dr. J. D. Morgan, Montreal.

All the representatives, with one exception, were present. The first session was opened by an address from the Hon. Dr. Roche, now minister of the interior, who, after pointing out the importance of the undertaking and congratulating Dr. Roddick and also the members of Council on the success so
far attained, called upon the meeting to elect a president and to proceed with the general business of organization. Dr. Roddick was thereupon elected the first president of the Council and Dr. Thornton, vice-president. Several committees were then appointed and set to work. It was soon fully realized by all that the real difficulty was yet to be met, that is, the deciding as to how, when, and where the examinations should be held and the nature of the examinations to be exacted for the diploma of the Council, etc. The various committees worked hard, day and night. The reports submitted by them were carefully considered and criticized, but the Council had to adjourn before a final decision to adopt any report was reached. It might, therefore, be said somewhat glibly that nothing had been accomplished. This would be a serious mistake. A tremendous advantage was gained in that by free, open discussion in the Council room and personal talks in the private rooms of the hotel many misunderstandings were cleared away. If any came with narrow sectional aims and claims it was made apparent that the final and best interests of any province or teaching body would be best advanced through consideration for others and by decisions and regulations which would tend to the general good. Marked harmony prevailed in all discussions and increased as time passed, and as new light was thrown upon different matters members were willing and prepared to modify the views which they had at first expressed and even to amend the vote which they had at first recorded. As a result of the modification in views which came about through these discussions, it was evident that, instead of finally adopting any of the reports submitted, it would be better to adjourn the Council and to refer all reports to a small special committee for revision and amendment, and that all other matters bearing upon the working of the Act, which may or may not have been discussed, be referred to the same committee for careful consideration, all to be reported upon at an adjourned meeting in Ottawa, in June, 1913, about the time of the
meeting of the Canadian Medical Association in London, Ontario. The registrars of Nova Scotia and Manitoba, Dr. A. W. H. Lindsay, 241 Pleasant Street, Halifax, and Dr. J. S. Gray, 358 Hargrave Street, Winnipeg, were requested to act as such committee and they have already undertaken the duties thus imposed upon them.

MEDICAL EXPERT TESTIMONY

From the earliest times the services of physicians have always been required by courts of justice in those cases, particularly, in which a decision is necessary as to the sanity of a criminal and the extent of his responsibility, or as to the mental capacity of a testator at the time of making a will, and in cases requiring post mortem examinations. But owing to the industrial developments of recent times, and the recognition of the responsibility of employers for their servants and of transportation companies for the safety of the public, the preponderance of medico-legal practice has to do with cases of this nature, and expert testimony is consequently much more frequently called for now than formerly.

It is the practice at present in most cases, civil and criminal, for each side to call one or, usually, more physicians to its aid, too often with the result that even diametrically opposite opinions may be expressed. This does not help the judge, and certainly bewilders the jury. Moreover, the dignity of the profession suffers, and in cases exciting widespread interest, the authority of its "experts" has sometimes been exposed to public ridicule. These things ought not so to be. In the interest of both law and medicine they call loudly for reform.

Medicine is not an exact science nor a perfect art. There is room for much difference of opinion, for example, as to the damage, physical and above all psychical, suffered by an injured person, and as to the degree of his resulting incapacity.
Yet the expert may be called on to give a definite prognosis in a case, perhaps, which he is seeing now for the first time, months after the accident. Then comes the cross-examination with its undoubted abuse of the hypothetical question. Contradictory evidence is elicited, and one authority quoted against another. Furthermore, the medical expert may be perfectly competent and perfectly honest in his endeavour to express unbiased opinions, but being retained and paid by one party to the suit, he necessarily studies the facts of the case from the point of view of that party, and it is humanly almost impossible for him to be impartial in his judgement. He becomes, in fact, an advocate.

In certain cases, particularly where it is a question of the sanity of a criminal, the judge may appoint a commission of experts to examine the accused, who, if reported insane, is forthwith confined in an asylum. The trial is thus indefinitely postponed, until the accused may have recovered his sanity. This procedure is allowed, also, in certain of the States, including New York since 1881, but is too seldom put in practice, as is evidenced by the laudatory comments of the press on the astonishing action of the Wisconsin judge who thus disposed recently of a presidential candidate's would-be assassin in the short space of six weeks following the crime. Those who object to this admirable method, do so, apparently, on the grounds that it limits or defers the right of trial by jury, that ancient and still very venerable fetish of our race.

We are strongly of the opinion that the commission or some similar method of obtaining expert evidence should be resorted to in all medico-legal cases. It seems to work successfully in the continental countries. In France, for instance, in each district the court draws up an official list of available physicians, specialists in the various branches. In a given case the judge appoints one of these, and if both parties to the suit are not satisfied with his choice, they each choose an additional expert, but always from the official list. The three thus chosen constitute a commission which investigates
the medical aspects of the case and makes a single report thereon to the judge before the trial. They do not appear at the hearing of the case. More elaborate procedures, but similar in principle, prevail in Germany and Austria. It is along such lines that reform should come, in assuring as far as possible that the judgement of experts shall be impartial, and avoiding the prolonged discussions, often useless and unedifying, which at present encumber the hearing of these cases. A beginning has been made in the province of Quebec, where the College of Physicians and Surgeons and the Montreal Medico-Chirurgical Society have appointed committees to study the question, and to confer with the Bar Association with a view to formulating proposals for the necessary changes in the laws. The matter is well summed up in the words of the Roman Digest:—Medici non sunt proprie testes; magis est judicium quam testimonium.

A BETTER LAW

OUTBREAKS of contagious disease are all too frequent, and, latterly, in the province of Quebec we have heard of far too many outbreaks of small-pox. In July the disease was reported in twenty-nine municipalities, the total number of cases being one hundred and six; in August, twenty-six municipalities reported a total number of one hundred and three cases; in September sixty-three cases were reported, occurring in twelve different municipalities; in October one hundred and nineteen cases were reported, in sixteen municipalities; and from November 1st to November 20th, the disease was reported in twenty-three municipalities, the number of cases being two hundred and twenty-six. Most of these minor epidemics are of a mild type and are particularly difficult to control,—therefore a fertile ground for infection. The matter was taken up at a recent meeting of the provincial board of health, held Novem-
ber 20th, on which occasion recommendations to the following effect were made, to be submitted to the provincial legislature. It was recommended that provincial inspectors should be empowered to take immediate action should they find that the local authorities had failed to take the necessary precautions in the case of an outbreak of disease. As the law now stands, the provincial authorities are unable to act until forty-eight hours have elapsed after the municipal authorities have been duly notified. This means that the inspector must first communicate with the local headquarters of the provincial board of health; the executive secretary of the board must then write to the municipal authorities, sending the letter by registered mail; and from the time of the receipt of this letter by the municipal authorities forty-eight hours must elapse before any action can be taken. This of course entails considerable delay,—in out-of-the-way places sometimes a delay of seven days or more. If the proposed amendment is accepted by the provincial legislature, such delays will be avoided in the future and the danger from similar outbreaks appreciably lessened. On the same occasion, certain amendments to the health laws were suggested: namely, that purulent ophthalmia, neo-natorum, infantile paralysis, and whooping-cough be added to the list of diseases in which the compulsory notification of cases is demanded; that increased power be given to the provincial authorities concerning water and sewerage systems,—this in view of the fact that whereas a municipality might see that its water supply was not contaminated, the said municipality might not be equally solicitous regarding that of a neighbouring water supply. Resolutions to this effect were adopted at the recent convention of the Sanitary Services of the province of Quebec, and similar power has been granted to the state authorities of Ohio. A further amendment was proposed, "to provide that any municipality, being assured that contagious disease is rampant in the territory of a neighbouring municipality, may refuse admittance to a citizen of the latter, unless he is provided with a medical cer-
tificate attesting to the fact that he is free from infection.” Another point to receive consideration was the disinfection of houses. It was considered that this duty should be placed exclusively in the hands of officers of the municipal boards of health.

It is the intention of the government to introduce a Bill at the present session authorizing a Department of Public Health. The establishment of such a department was strongly advocated at the recent meeting of the Dominion Medical Council, and it is understood that the Bill will follow, in a large measure, the recommendations of the Council. In connexion with this question, Dr. M. Steele, of South Perth, has given notice of the following resolution: “That in the opinion of this House the organization of a Department of Public Health is required in order to conserve in the largest measure possible the physical welfare of the people of this Dominion.”

Notice is given in the Canadian Gazette of November 23rd, “that application will be made to the Parliament of Canada, at the next session thereof, for an Act to incorporate the Canadian Medical Protective Association having for its objects, among others, the support and protection of the honour, character, and interests of its members, the encouragement of honourable practice, the giving of advice and assistance to members of the association in cases where proceedings are unjustly brought or threatened against them, the promotion of legislative measures likely to benefit the medical profession, and the doing of such other things as are incidental or conducive to the above objects, including the holding of real and personal estate.”

In view of the increasing importance of the study of public hygiene and the recognition that the salus populi must
rest, in part at least, upon a scientific basis, the Syndics of
the Cambridge University Press have decided to publish a
series of volumes dealing with subjects connected with
public health. The series will cover a wide field and will
be under the general editorship of Dr. G. S. Graham-Smith,
university lecturer in hygiene and secretary to the sub-
syndicate for tropical medicine of Pembroke College, and Mr.
J. E. Purvis, M.A., university lecturer in chemistry and
physics in their application to hygiene and preventive medi-
cine, and secretary to the state medicine syndicate of St.
John’s and Corpus Christi Colleges. The following is the
provisional list of subjects to be included in the series: The
Causation of Tuberculosis; Biting Flies and Disease; House
Flies and Disease; Ticks and Disease; Serum Diagnoses;
the Bacteriology of Foods; Methods of Post-mortem Exami-
nations; Tropical Hygiene; Sewage Disposal; Water Pur-
ification; School Hygiene; Physical Education; Ventilation;
Soils, Subsoils and Climate in Relation to Health; Fever
Hospital Administration; Sanitary Law and Practice; Sound
and Unsound Foods; Domestic Sanitation; Offensive and
Noxious Trades; Chemical Analyses of Foods.

There is a constant demand for physicians in outlying
districts, more particularly in the province of British Co-
lumbia. At the present moment, there are several posts to
be filled for which, we are informed by the Vancouver News,
there are no applicants. It is true the remuneration is small
and the work arduous,—two doubtful recommendations.
Yet, there is good work to be done in these districts and the
practitioner has a monopoly of the field. To quote from the
source cited above, the post of resident medical practitioner
and local medical officer of health is vacant at Hope, Elko,
Port Renfrew, Clayoquot, Alexis Creek, Denman and Hornby
Islands, and Queen Charlotte. In addition, a medical man
is needed at Fort Fraser. This post carries a grant of $500
from the provincial government and $600 from the Dominion government for professional services given to the Indians in the neighbourhood, thus bringing in a certain annual income of eleven hundred dollars.

A meeting of the Clinical Congress of Surgeons was held at Brooklyn, November 14th. At this meeting it was decided that steps should be taken to make public information concerning cancer in women, particularly that form of the disease peculiar to the sex. In a paper entitled, "Cancer of the Cervix," Dr. Cullen spoke of the tendency among patients suffering from the disease to conceal their symptoms. It was felt by all those who were present at the meeting that some attempt should be made to prevent the disease, and a committee was appointed to consider the matter. The physicians chosen to serve on the committee are: Dr. Thomas S. Cullen, Johns Hopkins University, chairman; Dr. Howard C. Taylor, Columbia University; Dr. C. Jeff Miller, Tulane University; Dr. F. F. Simpson, Pittsburg; and Dr. E. C. Dudley, Chicago. It is the intention that articles giving information on the subject shall be published in the daily press and in magazines, as may be deemed advisable.

It is announced by the professor of medicine in the University of Toronto that a considerable sum of money has been subscribed for the endowment of research fellowships in medicine in the university. The fellows may be graduates either of Toronto or other universities. Their appointments will be tenable for three years, at an annual stipend rising to fifteen hundred dollars during the third year. Research undertaken may be of any character approved by the committee of management. It is expected, however, that early work will include special investigations in connexion with tuberculosis. This will later be extended to other infections. Fellows, in addition to their own special work, will be expected to aid in
training students in laboratory work, while two or three senior fellows will give some time to the direction of fifth year work, especially in respect to literature outside of text-books. The committee in charge is to consist of the president of the university, the dean of the faculty of medicine, and Professors A. McPhedran, A. B. Macallum, J. B. Leathes, J. J. Mackenzie, and Brodie.

The compulsory notification of communicable disease, when viewed in the light of public health, is strongly commended by every member of the profession, but, from the practitioner's point of view, it is fraught with certain inconveniences. No little trouble is entailed for the busy doctor in the notification of such cases, and now that tuberculosis has been added to the list, the preparation of the necessary returns involves the expenditure of a considerable amount of time. The question has been discussed by certain members of the profession in Ontario, who are strongly of the opinion that some remuneration should be made for such notification. The provincial authorities have been approached in the matter but as yet no decision has been made. Such a course would not lack precedent, as, in England, the sum of two shillings and sixpence is paid for every case reported, and it is suggested that less indifference would be manifested by local practitioners if a fee, however small, were paid to them.

At a meeting of the Berlin Medical Society, recently, Dr. Friedrich Franz Friedmann announced briefly the results of his method of treating tuberculosis by vaccination with living cultures of an avirulent tubercle bacillus. But though vouched for to a great extent by some members of the faculty present, whose judgement is worthy of all respect and who had themselves sent him patients for treatment, his results, which seem to have been wonderfully successful, will not lend themselves readily to critical judgement until published more fully,
and in scientific form. The exact nature and the origin of the cultures, and the details of preparation of the vaccine were not disclosed. Nearly twelve hundred patients, including some two hundred and fifty cases of pulmonary tuberculosis, have been treated during the past few years with one, two, or at most three, injections, generally, it is claimed, with immediate results, such as the healing of long-standing sinuses in bone cases, and the disappearance of symptoms and gradual clearing of physical signs in phthisis, in cases not absolutely hopeless. So assured is Friedmann of the harmlessness of his preparation, that he uses it as a prophylactic, and has treated in this way large numbers of healthy infants, chiefly such as were unusually exposed to tuberculous infection. This was considered unjustifiable by many doctors present, and called forth vigorous protests. It was pointed out that the injection of living bacilli, even though proved to be avirulent, must always involve risk, owing to the very real possibility of their suddenly acquiring virulence. It seemed to be agreed, however, that a genuine advance had been made, and along the most promising lines; and one can only hope that the great desideratum may, indeed, have been found.

Much valuable information concerning the infant mortality in the various provinces of the Dominion is given in the report recently prepared by Dr. Helen MacMurchy, of Toronto. In Ontario, in 1909, out of a total of 52,629 deaths, there were 6,932 deaths under one year of age, a mortality of 131.7 per 1,000. In the same year, in Montreal, 290 children out of every 1,000 born, died before they were one year of age. In Prince Edward Island, for the year ending May 31st, 1910, the number of deaths registered was 954, and of these 142 were children of less than three years of age. In Nova Scotia the infant mortality is about 111 per 1,000; in Manitoba it is 149 per 1,000; and in Saskatchewan it is 129.49 for every 1,000 births. As preventive measures, Dr. MacMurchy suggests the education, by the government and
the municipality, of mothers in the care of infants; a more efficient registration of births, and the payment of twenty-five cents to the first person registering a birth within twenty-four hours; the establishment of a bureau of infant care and management; the allotment of special provincial grants to mothers nursing their infants, such grants to be fourteen cents a day to a mother nursing her child in an institution, and seven cents to a mother nursing her child at home. It is also suggested that the provincial government should pay one-third of the salary of any nurse or doctor who is engaged exclusively in child welfare work.

The prevention of blindness is a subject which perhaps has received less attention than it deserves throughout the Dominion. But last year the province of Nova Scotia passed an Act, which we give in full in so far as it deals with this matter:

"If one or both eyes or eyelids of an infant less than three weeks old become red, swollen, or show an unnatural discharge, the midwife, nurse, mother or other attendant on said infant shall immediately notify a registered practitioner of medicine. If the midwife, nurse, or other attendant refuse or neglect such notification, he or she shall be liable to a penalty of not less than ten dollars and not more than one hundred dollars. The practitioner of medicine thus notified, or who shall otherwise become aware of the symptoms above described, shall at once notify the local Board of Health for the district in which the patient resides. In default of such notification he shall be liable to a penalty of not less than twenty-five dollars and not more than one hundred dollars."

The prevention of blindness has received a good deal of attention in certain of the United States of America; laws have been made and committees have been formed to see that they are observed. In Nova Scotia, no committee has as yet been formed for this purpose, but the work has been undertaken by the society for the prevention of cruelty to animals.
Book Reviews


This is a very large book upon a very small, though not unimportant subject, and the author descends into unnecessary minutiae. We cannot help thinking that many of his recommendations are counsels of perfection. For example, “if a woman’s hair is scanty it is better for her to cut it short . . . than by wearing false braids to assume a beauty which she has not”; for a boy “it would be better to endure the down for a time as the growth of an elegant soft beard would be the reward”; “the barber should wash his hands with soap and water, preferably the tincture of green soap, and scrub his nails with a nail brush before attending to a customer.” To demand that “the barber should refuse to work on any one who has any skin disease unless he is sure that it is not contagious” is attributing to barbers a degree of rectitude and diagnostic skill which must surely be unusual. The book appears to contain all that is known about the troublesome conditions which affect the hair.


The first edition of this book was published in 1901, and since that time three reprints have been found necessary. As the
author remarks in the preface "marked advancement has been made in our knowledge of water and sewage purification," and one turns instantly to the text to observe how those advances have been recorded. There is no subject of greater interest in Canada, in view of the epidemic of typhoid which occurred in Ottawa during the past summer, and in so many other Canadian cities at various times. The comment of Dr. Bergey is only too true, that a large majority of our towns discharge their sewage into neighbouring streams, and that our drinking water is supplied from these drains. The historical description and the geographical distribution of the various systems of sewage purification are given in great detail. The writer disposes of the old fallacy which has wrought so much mischief, that sewage might be made a source of revenue to a community on account of the fertilizing constituents which it contains. The section which is devoted to garbage disposal is equally satisfactory. The work covers an extraordinarily wide range, and few aspects of hygiene, either public or private, have escaped attention. One cannot help feeling, however, that the statement "the use of alcoholic beverages is to be condemned," is too sweeping. Not the least important feature of the book is the comprehensive statement of the law upon matters of public health. Dr. Bergey writes with authority and his book is interesting to read as well as valuable for reference.


A few words explanatory of this book are desirable, and only a few are necessary. This is the third edition. The previous one, published in 1908, reappeared two years later in a French translation done by the late Gustave Scherb and in a German translation by Karl Hein. In the one case there was an introductory preface by F. Helme, Paris, and in the other by Eduard Müller, Marburg. Dr. Purves Stewart has always approached the subject of diagnosis from the clinical standpoint, and now, as on previous occasions, has avoided details of purely theoretical interest. The subject of the work is mainly that of diagnosis, and treatment is
only discussed incidentally. The clinical illustrations are drawn from the writer's own observation in hospital or private practice. The book is printed in Great Britain, published by Edward Arnold, London, and by the D. T. McAntsh Co., Toronto, the price being as above noted. It will be seen from this that the work is one, in the first instance, for the specialist, and, again, for all who have to do with the diagnosis of nervous diseases. The illustrations are done with much art and are most suggestive of the conditions to which they refer. It is hard to imagine a better book upon the subject than this. The book is a credit to British medicine and it will be a credit to Canadian medicine if it is received as it deserves to be.

**X-Ray Diagnosis and Treatment.** By W. J. S. Bythell, B.A., M.D., Manchester; Medical Officer to the x-Ray Department of the Manchester Children's Hospital; and A. E. Barclay, M.D., M.R.C.S., Medical Officer to the Electrical and x-Ray Departments, Manchester Royal Infirmary. Illustrated with 115 full-page radiographs. Price, $4.50. London: Oxford University Press. Toronto: D. T. McAntsh & Co.

This is a book written by two specialists, not for specialists alone. Its design is to aid medical men, so that they may be able to select cases in which the assistance of a radiologist is indicated. They protest against a stupid routine in the employment of the rays, especially by "a chemist, a photographer, a porter, or other handy-man." The book, therefore, presents no resemblance to an electrician's catalogue or an elementary work on physics. The illustrations are full of meaning, so different from the tiresome pictures which one finds habitually in all journals and most books. This book is really one upon medicine, and the illustrations are given to assist the reader in dealing with the text. The authors have correctly indicated the use of the radiographic method as a court of appeal whose findings must be intelligently correlated with the clinical results.


Pour l'auteur, la thérapeutique est la science, qui étudie l'action des médicaments sur l'organisme humain atteint de troubles mor-
bides, dans le but d'êtablir un traitement utile au malade. Cette définition présente l'avantage de ne pas confondre l'action physiologique d'un médicament donné avec son action thérapeutique qui peut être toute différente. En outre, il donne au mot médicamente, son sens le plus large, c'est-à-dire qu'il considère comme un médicament, tout agent (chimique, physique, climatique . . . ) susceptible d'exercer une influence sur l'organisme malade. Aussi bien, le scepticisme thérapeutique n'est souvent qu'un aveu déguisé d'ignorance, car, ainsi que l'a dit Behier: savoir fait pouvoir. Le titre même de cet ouvrage indique qu'il a été écrit dans un but essentiellement pratique. Négligeant volontairement le côté purement théorique, le Dr. Scheffer s'est appliqué seulement à mettre en lumière ce qui permet au thérapeute de faire son choix parmi les différents médicaments susceptibles de remplir une même indication clinique. Ainsi donc, mettre en évidence le caractère thérapeutique saillant qui fixe le choix dans un cas donné, tel est le but qu'il s'est proposé.


Out of twenty-six articles in this volume we would direct attention to the following: (1) Professor Ciesielski's Theory of Sex Determination, by S. W. Carruthers; (2) How it happens that the offspring of plants, animals, and men, is sometimes male, sometimes female, by Professor Ciesielski himself; (3) The Tonus of the Vagus, by Albert Abrams; (4) Massive intramuscular injections of double hydro-chloride of quinine and urea in the treatment of pneumonia; (5) The "Acute Abdomen" in children, by E. Scott Carmichael; (6) The Lorenz operation for congenital dislocation of the hip; (7) The value of exercise in treating certain cases of acquired inguinal hernia, by R. Tait McKenzie; (8) A year's work in appendicitis, by John B. Deaver; (9) Occupational hygiene in the navy. This list will, we think, be sufficient to direct the attention of all intelligent physicians to this most important publication.
The present volume appears to us to be the most interesting in a long series of interesting volumes.

**HYPNOSIS AND SUGGESTION. THEIR NATURE, ACTION, IMPORTANCE AND POSITION AMONGST THERAPEUTIC AGENTS.** By W. Hilger, M.D., Magdeburg. Translated by R. W. Felkin, M.D., F.R.S.E., with an introduction by Dr. Van Renterghem, Amsterdam, translated by A. Newbold. Price, cloth, $2.50 net. New York: The Rebman Company, 1912.

Dr. Hilger has enunciated the fruits of his many years' study and research in this book, and it bears the stamp of the author's special knowledge and of his practical mind. He does not weary the reader by a repetition of facts which everyone is aware of or of well known doctrines. Instead, he interests the reader by the pleasant and entertaining manner in which he presents all that is essential of the psychical curative methods.

The psychiatrist and the neurologist will find much, collected and carefully arranged in this book, which they have already come upon scattered through the literature of the subject, and will not look in vain for new points of view and original thoughts. The general practitioner and the student, as well as the jurist, will find much clearly explained which until now has been vague to them or of which they have been unaware.


One must be impressed on looking over this book with the wealth of clinical observation vividly recorded in the photographic illustrations. Of the ever-widening horizon of medicine, there is no part that has of late extended more strikingly than that occupied by infantile paralysis. The book is written in such a broad and scholarly spirit that it cannot help but be as interesting to the physician as it is to the surgeon. Indeed, the present translation
cannot fail to confer a signal benefit on the profession by doing much to explain to physicians the aims of the surgeon in his efforts to diminish the tendency to deformity in the earlier, and to overcome or mitigate established deformity and disability in the later, period of the disease. To the surgeon the full and critical consideration given to the various instrumental and operative measures, as applied at the present day, cannot fail to be of great service, both absolutely and as it compares with works relating to the same subject already published in the English language.


There are few works of recent production that should be more widely read and inspire more general interest among specialists in various branches of medicine and surgery than this work on the pituitary body. On account of the early involvement of the optic nerves, with the characteristic impairment of the visual fields, the ophthalmologist frequently is called upon first to make the diagnosis of tumour of this gland. The neurologist will naturally be interested, not only on account of the signs of increased intra cranial tension, and the localization of the trouble, but in the possibility that disorders of the function of the gland may cause epilepsy. Gynaecological and genito-urinary clinics have long been frequented by the fat amenorrhoeics and impotent males with hypophygal disease. The obstetrician will find much to interest him in this work, while the internist, and especially the pediatrician, cannot afford to overlook it, now that organotherapy promises so much for all cases of glandular insufficiency. Renewed interest in the ductless glands series will be aroused in the minds of experimentalists and morbid anatomists.


In this book of two hundred and seventy-one pages the subject of gynaecology is dealt with in quite sufficient detail for the use of
students; and the treatment is clear and interesting. For example, the comparative advantages of the abdominal and vaginal routes for extracting pelvic cancer are considered quite adequately for the purpose in a single paragraph. Indeed, a merit of the book is the judicious comment upon rival procedures. The pathological conditions and the measures designed for their relief are described without a superfluous word. A student will be quite safe in relying implicitly upon this text-book.


The name of Austin Flint is an honoured one in American medicine. During his life-time Dr. Flint revised his manual continually, and now the task has fallen to Haven Emerson, who has done it well. The book never was intended to take the place of the patient; indeed, it can be ill understood apart from clinical study. That is one of its chief merits, not "the elegance of its diction," as Austin Flint, jr., suggests in an introductory page. The elder Flint would not have used the stupid phrase.


Stimson's "Fractures and Dislocations" has just appeared from the house of Lea & Febiger in its seventh edition. The principal additions, as we are informed in the preface, have been made in connexion with the subject of treatment, especially with an old dislocation, and in the treatment of recent fractures. Three new sections on fractures of small bones in the hand and foot, and one on fracture of the external tuberosity of the femur have been added. The work has been thoroughly revised and more than one hundred new illustrations added. The best principles and practice in this division of surgery are here presented in convenient form and in the latest development. This work, since the time of its first
appearance, has been quite properly considered as a standard by students, by general practitioners, and by operating surgeons. It still remains in its present and more complete form as an outstanding credit to American surgery. Dr. Stimson, from his position as professor of surgery in Cornell University, and consulting surgeon to many other institutions, is commonly considered as a premier authority in the United States. In the description of the various operations there is a nice historical flavour, which shows that Dr. Stimson has never dissociated his subject from the experience of the past. His book is marked by good practice, sound reasoning, and attractive presentation of the subject. Indeed, it has much of the charm which older readers used to find in Erichsen's. The personality of the writer shows upon every page: that is what distinguishes a book from a mere piece of book-making.


Messrs. William Wood & Company have published the examinations which are given at the various State Boards of the United States and Canada, and have appended answers to the various questions. These books have been appearing since the year 1907, and every question that could possibly be asked of students is here included. The Canadian section deals only with Ontario, but it would appear that the questions which are asked in Canada are much the same as those which are asked in Alabama. A student who knew all the answers to all these questions would be a miracle of erudition, but if he studied the form in this book in which the answers are given he would do himself very great credit and save his examiners much trouble. Any student who wishes to test his knowledge might very well spend a few days over this book.


This little book contains, in a compact form, a very complete and simple exposition of what is known concerning the flies usually found in houses, and of the way in which they may disseminate disease. Every one should read and understand the book, and its contents should be uppermost in the minds of every physician.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


FIVE years ago Sir William Tennant Gairdner, K.C.B., died full of years and honours, and to-day we are in possession of his life story. This life of an Edinburgh man is written by an Edinburgh man and published by a Glasgow publisher. On the first page there appear references to “a Moderate,” to Hugh Miller, Scott’s “Dominie Sampson,” and in the middle of the second page is a quotation from Burns: we know exactly where we stand, and any foreigner who gets more than is most justly due to him in this book will do well.

William Tennant Gairdner was born of Scots parentage in Edinburgh in 1824. His family, interlinked with the M’Fadyens, the Fergussons, and the Maclagans, descended from Dr. Dalrymple, who baptized Robert Burns: the apparent admixture suggested by the name Tennant is understood when it is known that it refers to the Tannants of Ochiltree. Educated at a Dame’s school, and later at the Edinburgh Institution, Gairdner took his course at Edinburgh University. Tall, spare, never robust, spectacled, Gairdner was a deep student. Thus his brother James: “Dr. Johnson was short-sighted, besides other illustrious examples that might be quoted. My brother William was short-sighted, and obliged to wear spectacles even at school. I was long-sighted. No one could have beat me, even thirty years ago, in reading posters or church clocks at a distance, (cf. the Dublin character mentioned by Mr. E. V. Lucas, who said he had no equals in reading the signs over shop doors), and I think that the eye which loves to rest on distant objects, and not to be focussed on near ones, must be inimical to study.” Does he not remember that Solomon said that the eyes of the fool were in the ends of the earth?

Attending classes in Edinburgh University from 1840 to 1845, Gairdner found among his teachers the best minds of the day, and as an undergraduate he attained some distinction. Nowhere in the world at that day could a youth find a more stimulating atmos-

sphere, and Gairdner profited by it. His mind was turned to clinical investigations, and it was not long until he began to set forth the results of his keen, accurate observation. He became pathologist to the Royal Infirmary in 1848, physician to that institution in 1853, and professor of medicine in the University of Glasgow in 1862. From his graduation until his appointment in Glasgow his life had been a succession of advances and promotions: during this period he left the Unitarian for the Presbyterian body.

Transplanted to Glasgow, Gairdner found himself in the midst of a group of scientific men scarcely less distinguished than he had left in Edinburgh. Considering that this included Thomson, Lister, Caird, Rankine, Easton, and a number of Buchanans, it might even be contended by Glaswegians that the firmament was more thickly studded with planets than had been the case in Edinburgh. Easton, by the way, renowned for his syrup, "from his particular type of eloquence was generally known as 'Emphysematous John.'" Recognizing the author's hand in this aside, we feel sure that the story told of Brown of Lanfyne, good as it is, is not the most amusing in the collection.

Gairdner's work in Glasgow was characterized first by his putting the teaching of medicine in the Royal Infirmary on a higher basis than it had hitherto possessed. In 1863 he became the principal medical officer of the city, and was the means of establishing, under the leadership of Mr. John Ure, many measures which made Glasgow a modern city in respect of its public health. During eight years of his occupancy of this important post, he accomplished what seems to have been the most important work of his life. In 1876 he was appointed physician-in-ordinary for Scotland to the Queen. From this time onward, his honours, addresses, and writings might be cited in a bulky catalogue: he was extremely busy, not only in his capacity of consulting physician, but in his many official and semi-official duties. In 1900 his active connexion with the university ceased, and he devoted himself subsequently to literary project and accomplishment. In 1900 he began to be subject to bradycardia, the result of heart-block, presenting the now well-known Stokes-Adams syndrome. The history and observation of his case were carefully made by himself, and at his request the clinical story was subsequently rounded out by an autopsy. His later years were marked by activities alternating with progressive attacks of his malady, until June 28th, 1907, when he died.

Dr. Gibson's task has not been an easy one, and one has only to read the book to see the difficulties that have beset his path.
The biographical matter is too long for an introduction and too short for a biography. It is followed by nearly six hundred pages of Sir William Gairdner's writings. Save in its bulk, Dr. Gibson's work is in no sense weak; on the contrary, it is the most successful part of the volume. It seems a pity that it is so broken up by the insertion of letters whose interest is often secondary. Miss Cecilia Gairdner's letters to her nephew are quite of their own kind, and we search, in vain at the moment, for their exact counterpart: they have a decided early-Victorian flavour, and that she falls into French for the exact shade of expression does not imply that she was afraid to write in English, for there is no expression in her letters of which the good lady need be ashamed. Of Gairdner's own letters, especially of the early period of his life, one written from home shows how interesting he could be when he tried. Others of this and earlier periods are a little stiff, even priggish, a fault from which his maturer letters are entirely free. Some of the later letters are undeniably ponderous, but, for that matter, so were some of Samuel Johnson's.

Sir William Gairdner is too recently dead, too many of his immediate relatives are yet alive, and his position in a dignified profession is yet too evident to his contemporaries for his biographer to use to the best his undoubted ability to produce a less solemn and serious book: perforce the subject must be seriously treated. It is not seemly to dance in episcopal robes, nor has the comic obituary as yet come into fashion. Still, even the Scot will allow some smack of levity upon most occasions, provided it be not too pronounced; not more in evidence, let us say, than the whisky at an old-fashioned funeral. To be plain, the author seems to have taken his subject, his object, his city, his race, and his readers a shade too seriously: thrice we seemed to detect a smile that we could wish had become a hearty laugh.

Some of Sir William Gairdner's most important papers are contained in the volume. Of most interest are those which contain personal reminiscence. Gairdner was especially fortunate in that he lived among and knew many of the noted scientific men of his time. Of them he speaks always with a large-hearted appreciation. The papers dealing with purely technical subjects are excellently prefaced by the editor, whose comments are timely, lucid, and helpful. From the standpoint of to-day, Gairdner's work upon the heart seems to have been the most sound of any that he did. To him we owe much of the system of graphic representation of cardiac murmurs, as employed everywhere by
teachers. He had trained his senses very acutely, and extracted to the full the information that his eyes, ears, and hands could furnish. The pupillary inequalities seen in patients suffering from certain aneurisms were first given their due weight as an important symptom by him. The relative unimportance of many cardiac murmurs he insisted upon, and the prognostic value of the observation of murmurs has scarcely been added to, nor taken from, since Gairdner's papers upon the subject were written.

The maker of this biography has done wonders with the material at his disposal. If we have at all grasped the character of Sir William Gairdner, he would have been the first to declare that a book of eight hundred pages setting forth himself would be a performance lacking in perspective, and he would not have been far wrong. Sir William was a modest, well-doing, right-thinking man who did the day's work cheerfully and well. Nothing exciting ever happened to him, but the editor has almost succeeded in making it seem otherwise.

J. McC.

At a recent meeting of the Nova Scotia Medical Society, a plan was outlined by which it is hoped, within a few years, to completely eradicate phthisis from the province, and it is proposed to bring the question before the legislature during the next session. The plan suggested is somewhat as follows: An examiner, who shall be a specialist in tuberculosis, shall be appointed to travel throughout each county; suitable rooms, to be used for medical examinations, shall be secured in the shire town of each county; and county nurses shall be appointed as required. Persons suspected of tuberculosis shall be encouraged to come on certain days to be examined and treated, the examiner and nurses to cooperate with the local physicians. The nurses also shall travel throughout the county and shall superintend fumigation, give advice when needed, and help to advance the work in all ways possible. The death rate from tuberculosis is increasing throughout the province and is rather more than two for every thousand of population. The plan suggested would cost the provincial government about $50,000 a year for a few years, but the economic value of human life involved is much more than that, being almost $500,000 a year.
Dr. William Steele, V.S., of Stratford, Ontario, died December 5th.

Dr. E. P. Bowles, of Wolfville, Nova Scotia, died suddenly November 20th.

Dr. J. F. J. Patten, of St. George, Manitoba, died suddenly from heart failure, November 15th, in the sixty-eighth year of his age. Dr. Patten was born near the village of St. George, and graduated in medicine from Victoria University. For twelve years he practised in Jerseyville and then went to St. George. A man of high ideals and sterling integrity, he was greatly beloved and respected. His activities were not confined to his professional work alone; he was interested both in municipal and parliamentary affairs and was a staunch supporter of the Baptist Church.

Dr. Elizabeth Simpson Mitchell, of Montreal, died at Nashua, New Haven, on Saturday, November 30th. Dr. Mitchell was the daughter of Mr. Alexander Mitchell and was the first woman doctor licensed to practise in the province of Quebec. From an early age she was keenly interested in medicine and she obtained her M.D. degree from Queen’s University in 1888; she subsequently studied in London, Edinburgh, and Glasgow. Dr. Mitchell is deserving of particular honour for her courage and determination in the face of many difficulties; twenty-five years ago it was no light thing for a woman to enter the profession of medicine; many obstacles, traditional and otherwise, had to be overcome and a new path to be trodden, but a path along which many have followed and will follow in the time to come.

News

Maritime Provinces

The tuberculosis sanitarium at River Glade is almost completed and will be opened very soon.
The Brooklands hospital at Sydney was partially destroyed by fire on Friday, November 22nd.

Diphtheria has broken out in Halifax. Over a dozen cases have already been reported, some of which have been fatal. So far the disease is confined to the north end of the city, but unless a stricter quarantine is observed, it is feared that the epidemic will assume larger proportions.

The annual report of the Monckton Board of Health for the past year is an extremely satisfactory one. During the year every precaution has been taken against the spread of infection; every house in which contagious disease, including tuberculosis, has existed, has been carefully fumigated, and the clothing of all the inmates has been disinfected. Particular attention also has been paid to the disposal of refuse and to sanitation. A new set of plumbing and drainage regulations was prepared by the provincial government in 1911; these have been published in book form, and copies have been distributed to every plumber and employee in the city. The establishment of an incinerator plant is under consideration. The result of the efforts put forth by the board has been encouraging. During the year only seventy-eight cases of contagious diseases have been reported, a percentage of six per thousand population. These cases included fifty cases of diphtheria, which resulted in four deaths; twenty cases of typhoid, resulting in three deaths; six cases of scarlet fever, and two of measles. One hundred and ninety-eight deaths occurred during the year, giving a death rate of 13.10. Only ten deaths from tuberculosis occurred, and Monckton has the satisfaction of possessing the lowest death rate from this disease in the province of New Brunswick.

Ontario

The report of the St. Catharine's Board of Health gives the following information: during the past year there were three hundred and thirty births and two hundred and thirty-four deaths; there were forty-four cases of contagious disease, death resulting in six of them.

The question of building a hospital at Perth is under discussion. One thousand dollars has been promised already for this purpose.
It is proposed to make some improvements to the McKellar General Hospital. A request has been made to the city council for $15,000 for this purpose, and a by-law is to be prepared to guarantee the bonds to the extent of the amount required.

The new General Hospital at Toronto is nearly completed and it is expected that it will be possible to open it next April.

A tuberculosis hospital is to be established in connexion with the Welland County Hospital.

A deputation from the Associated Charities waited on the Ontario government on Wednesday, December 4th, in reference to the detention in the jail of insane persons pending their admission to the asylum. The question has already been considered and $100,000 has been voted by the city for a detention hospital, but nothing further has been done, and the poor unfortunates are still detained in the common jail: at the moment there are six insane persons confined in the jail, and five of these are women. The government considered that the matter was one which should be dealt with by the city council.

The annual report of the Brockville board of health gives the following information: there were registered during the year ending October 31st, 1912, 237 births and 194 deaths—of the deaths 33 were of persons coming to the hospital from other municipalities. The cases of contagious disease reported were: typhoid, 14 with 3 deaths; diphtheria, 36 with one death; scarletina, 61; measles 86; small-pox, 1; chickenpox, 4; in addition, 16 deaths occurred from tuberculosis and 4 from whooping cough. The epidemics of scarletina and measles were of an extremely mild nature and were correspondingly difficult to control. The present method of garbage collection is condemned and the hope expressed that some system of collection may be instituted which will be under the control of the town council.

A by-law is to be submitted to the people of Toronto to grant $200,000 to the Weston Sanitarium. This decision was made at a recent meeting of the board of control on the condition "that the $200,000 shall be used by the National Sanitarium Association in such manner for the city of Toronto as the board of control may
determine after consultation with the trustees of the association.”
A second by-law is to be submitted at the same time to grant the
sum of $250,000 for the out-patients’ work of the Hospital for Sick
Children.

The medical inspection of school children in Toronto during
October elicited the fact that two hundred and forty-four children
were suffering from some form of skin disease, one hundred and
sixty-three had defective vision, ninety-six were suffering from eye
disease, and twenty-four from ear disease. A great many children
had enlarged tonsils or glands and the teeth of over one thousand
children were found to require attention.

There is still a good deal of diphtheria in Ottawa. During
October forty-two cases were treated in the isolation hospital, and
at the end of November there were twenty-eight cases in hospital.
There were also seventeen cases of scarlet-fever undergoing treat-
ment.

Several cases of diphtheria have occurred at St. Mary’s.

There has been a good deal of scarlet fever among the school
children of Niagara Falls during the last month.

A special committee was appointed recently to report on the
medical inspection of school children in Toronto. The committee
found that the inspection had been most successful and had resulted
in marked improvement in the health of the children, and that the
opposition on the part of parents was diminishing rapidly. Plans
are being made by Dr. Struthers, the medical officer of health, for
the continuation of the work of inspection. A good deal of labour
is entailed in such supervision of the health of school children, and
Dr. Struthers voices a plea for more assistance. His present staff
consists of sixteen medical inspectors and twenty-five nurses, and
he intends to ask the board to appoint two more inspectors and ten
additional nurses.

The Kingston water supply was discussed at a meeting of the
board of health which took place December 4th. Dr. Moloney,
the medical officer of health, stated that the source of the water
supply was the worst possible, as the intake pipe was placed directly
at a point where the sewage from the Rideau River and the city
settled. He also reminded the board that, some time ago, it was reported that a vessel had dragged its anchor over the intake pipe and that in all probability the pipe had been cracked. It was decided that the pipe should be examined to ascertain what damage, if any, had been done.

At a meeting of the Port Arthur city council on December 2nd, the medical officer of health, Dr. Laurie, stated that during the past year at least twenty-two deaths from tuberculosis had occurred. At present there is no institution in Port Arthur in which patients suffering from the disease may be isolated, and the advisability of building a hospital for this purpose was discussed. It was suggested that an appropriation of $3,000 be made by the city to enable the board of health to build a few cottages in which tuberculous patients might be placed, the cottages to be built on the ground adjoining the isolation hospital.

A reorganization of the staff of the Hospital for Sick Children, Toronto, is announced. The members of the staff have received notice that at the last meeting of the board of trustees it was resolved that no member of the staff should in future be permitted to hold a teaching position on the staff of any other hospital. It is understood that Dr. C. L. Starr has been proffered the senior surgeoncy and that Dr. W. E. Gallie will be the first assistant. The professor of medicine and the professor of surgery in the University of Toronto will have charge of four beds each, while another rearrangement will result in there being but four services, i.e., surgery, medicine, eye, nose and throat.

QUEBEC

A hospital to cost $25,000 is to be erected at Limoion by the Nuns of St. Francis.

Small-pox is still very prevalent in Montreal. There has been quite an epidemic at Ste. Hyacinthe; at the beginning of December thirty-five cases were reported.

During the past few months there has been a great deal of scarlet-fever in Sherbrooke. The disease is of a mild type.

The 1916 congress of the "Association des Médecins de Langue Française d'Europe" will take place at Montreal. It is
probable that the meetings will be held towards the end of the summer, and it is expected that between five and six hundred physicians—French, Belgian, and Swiss—will then visit Montreal.

Additional health inspectors are to be appointed throughout the province with a view to preventing outbreaks of small-pox, which have been of such frequent occurrence during the last few months.

MANITOBA

A report was submitted recently by Dr. D. A. Stewart, the medical superintendent of the Ninette Sanitarium. The sanitarium was opened for the treatment of tuberculosis in June, 1910; since then, four hundred and thirty-three patients have been admitted, of whom one hundred and ninety-one came from Winnipeg, one hundred and fifty-six from other points in the province of Manitoba, and fifteen from outside the province. Three hundred and ninety-two patients have been discharged, of whom one hundred and nine are known to be fully employed, and sixty-three are able to work for a portion of the day; forty have died, and seventy-one are not reported. As fifty-six per cent. of the cases were classed as “far advanced” when admitted to the sanitarium, the figures given above are satisfactory; cases believed to be hopeless are not admitted. The present building has a capacity of sixty-five only, but there are nearly always from seventy to seventy-four patients in the sanitarium. New buildings are now in course of erection, and when these are completed there will be room for from one hundred to one hundred and ten patients, and the sanitarium will be the third largest in Canada, coming next in size to the one at Gravenhurst in Ontario, and the one at Kamloops in British Columbia.

SASKATCHEWAN

Dr. McKay, the medical officer of health for Saskatoon, has been granted one year's leave of absence, and will spend that time abroad in travel and in the study of questions of importance to public health administration.

The Sisters of Providence have opened a temporary hospital at Moose Jaw, with accommodation for twenty patients. They propose building a hospital next year to cost $50,000, for which
the site has already been given. The hospital will be open to the
class if general and will be extended, as it is found necessary to do
so, to a cost limit of $200,000.

It is probable that a general hospital will be built at North Battleford.

Small-pox is reported from Halbrite, where over thirty cases
of the disease have occurred. This is a further instance where
the cases have been of a "mild" type and where insufficient pre-
cautions have been taken to prevent the spread of the malady.

ALBERTA

As there is no municipal ambulance in Calgary, it frequently
happens that persons who are suffering from infectious disease,
and who are sent by their physician to the isolation hospital,
go there in the street car. The danger of such a practice is only
too evident, and the matter was recently brought to the attention
of the commissioners by sanitary inspector Dunn. The question
is a serious one and one hopes that everything possible will be done
to safeguard the public from such exposure.

Dr. M. C. Costello, of Calgary, advocates strongly the
establishment there of a municipal dispensary. He suggests that,
for a time, the work might be carried on under the direction of the
medical officer of health, who might be relieved of some of the routine
work which is entailed by his position. Such dispensaries have
proved of much benefit to the poorer citizens in the Old Country
and in many cities in the United States.

An annual grant of $15,000 has been promised by the county
council to the new hospital at Strathroy.

The question of medical aid in outlying districts was brought
up last session by Mr. Gunn, M.P.P. for Lac Ste. Anne. There
is no physician at Lac Ste. Anne, nor for a hundred miles west of
that point, and several cases have terminated fatally which might
have been saved could medical aid have been procured in time.
In a recent accident case, Dr. Anderson, of Wabamun, had to travel
twenty-eight miles to attend the patient. In these sparsely popu-
lated districts, it would be impossible for a physician to support
himself, and Mr. Gunn suggests that a government subsidy be granted for the assistance of practitioners residing in such districts.

DR. MAHOOOD has been appointed medical officer of health for Calgary.

A BY-LAW is to be submitted by which $240,000 will be granted to the Misericordia Hospital at Edmonton.

The following recommendations have been made to the city commissioners by the Edmonton Medical Association: that the city be divided into districts; that physicians residing in the city designate the districts in which they will respond to charity cases; that a social worker be retained by the city to investigate local conditions and report upon a system to solve problems that may need elucidation; and that a relief officer be appointed to serve under the police department. The society also recommends that the hospital accommodation be increased. No action as yet has been taken by the commissioners.

BRITISH COLUMBIA

A GRANT of $10,000 has been made by the provincial government to the West Coast General Hospital at Port Alberni, an equal amount having been provided by private subscription.

It is the intention to commence building the Kootenay Lake General Hospital about the beginning of next March.

It is probable that a hospital, with accommodation for ten or twelve patients, will be established at Burnaby by the Victorian Order of Nurses.

Two donations to the Vancouver General Hospital have recently been made, each of one thousand dollars.

On Monday afternoon, November 25th, a deputation from the Vancouver General Hospital waited on the health committee with the request that a by-law for $325,000 be submitted; the amount, if granted, to be expended thus: $55,000 on an administration building for the suggested isolation hospital; $150,000 on the isolation hospital itself, this to be extended in the future as the need
arises; $100,000 on a nurses' home; and $90,000 on an administration building in connexion with the General Hospital; the remainder being allowance for bond shrinkage and brokerage. The plans had been prepared and were submitted to the committee; these were approved and the by-law recommended.


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**Canadian Literature**

**Original Contributions**

*Dominion Medical Monthly*, December, 1912:

The widening of the scope of abdominal surgery from life-saving to health-restoring operations . . . . A. E. Giles.

*The Canadian Practitioner and Review*, November, 1912:

A case of thrombosis of the lateral sinus, resection of the internal jugular vein, spontaneous evacuation of an abscess of posterior fossa through the foramen jugulare; recovery . . . . P. G. Goldsmith.

Opening address at the Faculty of Medicine, University of Toronto . . . . H. C. Cameron.

*The Public Health Journal*, November, 1912:

Administrative control of tuberculosis . H. M. Biggs.

The relation of water supply and typhoid . B. G. Michel.
The rural health officer’s relation to pulmonary consumption . . . . A. P. Reid.
Municipal control of milk supplies . . . . T. H. Whitelaw
Militia sanitation a civil asset . . . . Lorne Drum.
Dust in the house and on the street . . . . A. H. Wright.
Threatened outbreak of typhoid fever and measures taken to avoid it . . . . R. E. Wodehouse.
Sewage disposal by oxidation methods . . . . J. D. Watson.

L’Union Médicale du Canada, November, 1912:
Contribution à l’étude des hernies tubaires, ovariennes, et tubo-ovariennes . . . . A. P. Heineck.

Le Journal de Médecine et de Chirurgie, November, 1912:
Cécité binoculaire par balle de revolver au chiasma . . . . J. N. Roy.
Le traitement de la tuberculose pulmonaire . . . . A. Robin.

Medical Societies
OTTAWA MEDICO-CHIRURGICAL SOCIETY

A regular meeting of the Ottawa Medico-Chirurgical Society was held in the Carnegie Library on Friday, December 6th, Dr. J. D. Courtenay in the chair. There were thirty-five in attendance. Dr. A. S. McElroy presented a case showing transposition of viscera. Dr. W. A. Graham read a paper entitled, “A Pioneer Physician,” being a sketch of the life work of Dr. Doig, who, after graduating from Edinburgh University, carried on a scientific practice in the backwoods of Canada. The subject of this paper, during his practice of forty years, kept exact notes of his cases with general observations on the diseases with which he came in contact. He conducted post mortems on many of his fatal cases, and his vivid and instructive descriptions of the same are very valuable. His descriptions of diphtheria, pneumonia, meningitis, embryotomy, diseases of the eye, etc., etc., are well worthy of up-to-date text-books, and his descriptions of the forces of nature, as illustrated by lightning and thunder, prove that he was a past master in the art of recording his impressions.
Dr. Small complimented Dr. Graham on his paper, which was received with great applause.

Dr. D. T. Smith gave a short sketch of his impressions of the Congress of Surgeons in New York.

TORONTO ACADEMY OF MEDICINE

A meeting of the Eye, Ear, Nose and Throat Section of the Toronto Academy of Medicine was held November 4th. Chairman, Dr. Geoffrey Boyd.

Cases presented: Dr. C. Campbell. Proptosis, tenonitis? Right eye blind for two years with opaque cornea. No trouble till present attack. History of some nasal discharge with frequent colds. October 28th first seen; redness and soreness in eye, swelling having set in three days before; proptosis almost as marked as at present. Tenderness somewhat more pronounced above, but no bony tenderness. Nasal examination—no pus, no obstruction; probe passes into frontal sinus, no ethmoidal disease detected.

Dr. Wishart thought the straight proptosis precluded a nasal cause. Dr. Maclennan considered it an orbital cellulitis, and advised awaiting developments. Dr. Boyd thought the eye was generally proptosed on the bias when the nose held the cause. This nose looked perfectly normal; however, it could do no harm to remove a portion of the turbinal and examine the ethmoidal cells.

Dr. Wishart again presented the case shown a month ago of tumour in the left side of the throat. A section had been taken and the growth shown to be lympho-sarcoma. The carotid had been tied, and a few days later nearly the whole of the superior maxilla had been removed. He had found that the growth reached into the ethmoidal cells, but had gone no farther. The prognosis was bad, but the operation wounds had healed in a wonderful way. The eyesight had improved since the operation.

Dr. Price-Brown said that he had incompletely removed a somewhat similar tumour some years ago. Afterwards he had unsuccessfully tried the electro-cautery, and the man had died from haemorrhage from a large sloughing mass, four months later. In this case he had found Coley’s fluid worse than useless. Dr. Boyd said it was remarkable how well the wounds had healed. He remembered tracing this growth into the sphenoidal sinus.

Dr. Boyd showed the result of sub-mucous resection, done in a case presented a month ago.

Dr. Wishart instanced a case where he had recently done a resection and all the packing had been taken out by the patient on
the first evening. When he saw the patient on the day following the two walls of the septum were widely separated with serum and clot, and the patient unable to get any air through the nose; the stitches had held. He removed the lower stitch to let out the serum, but did not disturb the clot. The patient now breathes slightly through the nose, but he thinks that the ultimate result will be fair, with a thickened septum. He did not open up the wound for fear of infection. Dr. Davies mentioned the Vienna practice of packing firmly with iodoform gauze and contrasted it with the Berlin practice of putting in only two pieces of absorbent cotton, and making an L-shaped incision to allow any serum to drain away. Dr. Price-Brown thought that the septum would become much narrower than at present appeared. Dr. Hunter enquired concerning flapping septa after such operations and detailed such a case of his own. Dr. Boyd saw no harm in opening and removing the clot, and even putting in a tube. Dr. Wishart replied.

Dr. Price-Brown: Case of functional paresis of vocal cords. Telephone operator who had frequent attacks of aphonia, and was suspended four months ago for this reason. Patient seen two weeks ago; found paresis of cords which were in almost a cadaveric position; hard, enlarged tonsils were removed and patient put on strychnia and faradism; now almost well. Considers the case entirely neurotic.

Dr. C. Campbell presented a case for Dr. McCallum. Rupture of the choroid nineteen years ago, through being struck in the eye with a cricket ball; rent easily seen with slight pigmentary disturbance around it.

Dr. Wishart. Submucous resection in a child five years old. Columnar cartilage was split in some injury and the nostrils were very narrow; the boy had to breathe through the mouth. Boy now breathes comfortably through nose, if discharges are kept cleared away. Dr. Price-Brown believes that, as a rule, simpler operations will do in these cases. Dr. MacIennan sees no reason to fear resections in small children.

Dr. Boyd: The question is are we going to interfere with the future development of the child’s nose by resection. So far no ill effects have been observed as long as precaution is taken to preserve the bow-sprit of the nose. He had lately had to operate in two cases where, as children, Ashe’s operation had been performed, but the deviation had returned. Dr. Wishart replying detailed a case where he had done Giessen’s operation years ago, and had lately had to do a resection under much less favourable
conditions, the deviation having returned. But each case had to be managed in the way best suited to it.

Dr. Boyd showed a case of vocal nodes.

Dr. Reeves showed specimen removed from the vitreous with the small magnet, after the giant magnet was unsuccessfully tried. He also detailed a case of intense orbital cellulitis in a baby, following nasal infection. Pus was found by incision into the orbital tissue, and the staphylococcus pyogenes aureus isolated. The child developed an acute pneumonia and died.

At the general meeting, held on Tuesday, November 5th, Dr. Arbuthnot Lane, surgeon to Guy’s Hospital, London, delivered an address on the surgical treatment of chronic constipation. The paper, which dealt with extirpation of the large bowel, was very interesting and aroused active discussion. Among those participating were Mr. J. H. Cameron, Drs. McPhedran, Watson, Bruce, F. N. G. Starr, Primrose, and Ingersoll Olmstead. The attendance was one hundred and fifty.

SECTION OF SURGERY

Tuesday, October 14th, 1912. Following his inaugural address, outlining the programme of the section for the year, Dr. Silverthorn, the chairman, presented a case of successful skin grafting of the thumb. Dr. Scott showed a baby three weeks old having an imperforate anus; a small opening communicated with the vagina. In discussion Dr. Shuttleworth reported a similar case. Dr. H. H. Bruce reported a case of renal calculi. He showed x-ray plates and a specimen consisting of the kidney sac containing several hundred uric acid calculi. Dr. George Ewart Wilson presented a case and gave the following history: In December, 1911, a carpenter carrying lumber fell, a plank striking his neck. For three days there was no effect, then a lump the size of a pigeon’s egg appeared behind the ear; there was no pain or discomfort. The lump then enlarged, extending as far as the clavicle, still remaining freely movable. Six weeks ago pain commenced; it was continuous and increased by movement. Then hoarseness developed. There was ptosis of the right eye and contraction of the pupil. The trachea was pushed to one side; some paresis of the right vocal cord. Lately, the lump has become hard and fixed. The case was discussed by Drs. Scott, Hendrick, and Bruce.

SECTION OF MEDICINE

Tuesday, November 12th. Dr. Joacim Guinane reported a series of thirty-six cases treated by salvarsan, and twelve treated by neosalvarsan. He said that cases with mouth lesions seemed to
respond best to this form of treatment. Most of his early cases, treated with one dose only, relapsed. Mercury should also be given in all cases. Dr. Graham Chambers read a brief paper dealing principally with the hygienic aspects of syphilis. Alcohol should be forbidden. Grey oil was a most important curative agent. Dr. D. King Smith read a report of eight hundred and forty-five salvarsan injections given in Toronto. In ninety per cent. of all cases there was marked improvement; in fifteen per cent. there was recurrence. A survey of the field seemed to indicate that recurrences are numerous and mercury necessary as an aid to salvarsan. Dr. Geo. S. Strathy read a report of a hundred and fifty cases which had been followed by himself and Dr. Gordon Bates by means of the Wassermann reaction. A hundred of these cases had been treated by mercury only. It was found that the frequency of a positive Wassermann varied inversely with the amount of treatment, but that positive reactions were obtained at any stage. Of twenty-eight reactions performed within six months of a primary lesion, twenty-seven were positive. The fifty salvarsan cases were divided into classes according to the distance of treatment from time of infection. Results seemed to show that closeness to time of infection was a potent, favourable factor. Only one case, treated in the early stages, continued to show a positive reaction. Salvarsan should be repeated until a negative reaction is obtained; then followed by mercury. Dr. Helen McMurchy read a very interesting paper on "The Sociological Problems of Syphilis." Early marriage, or economic conditions which would render it possible, Dr. McMurchy considered, were important things to be considered in the prevention of syphilis. The difficulties of the Housing Commission in Toronto provided an example of how hard it was to influence public opinion.

The discussion which followed these various papers was prolonged and enthusiastic. Among those taking part were: Drs. H. B. Anderson, Heggie, Fletcher, McPhedran, Geo. Smith, Thistle, Caulfield, Bates, Guinane, King Smith, and Strathy. The attendance was about one hundred.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The third regular meeting of the society was held Friday evening, November 1st, 1912, Dr. D. J. Evans, president, in the chair.

PATHOLOGICAL SPECIMENS: Exhibited by Dr. A. M. Burgess of the Montreal General Hospital.

1. Tumour of the axilla and breast. Patient was a young girl employed in a factory where she had to reach down into barrels or
casks and in doing so would occasionally hit the axilla or breast on the edge of the barrel. She finally developed a tumour of the axilla about the size of one's fist. It was completely separate from the breast, and was rather firm in consistence. She was a patient of Dr. Elder's and he diagnosed adeno-fibroma, probably arising in an accessory mammary gland. The specimen shows a large tumour of granular surface, lobulated, firm, and on section showing minute whitish granules which correspond to what may be seen on the slide as minute gland acini. There are three interesting points in connexion with this specimen: First, it is a tumour of a mild type developing in an accessory mammary gland; it is also of interest in that it is an extremely large specimen of a benign growth of the breast, and because the history shows that irritation certainly played an important part in its development. While these adeno-fibromata, under the microscope, at first glance resemble the scirrhous carcinomata, in that they show small areas of gland tissue scattered throughout an extremely fibrous stroma, they are essentially benign growths; they do not infiltrate, as you will notice in the specimen.

2. Thoracic aneurysm. (Dr. J. R. Waddell, who performed the autopsy on this case, described the specimen.) The aneurysm in this case ruptured directly into a bronchus. The symptoms extended over six months. They were, præcordial pain, pain in the chest, and brassy cough. There was marked arteriosclerosis and bulging in the second, third, and fourth left costo-sternal margins. There was a distinct heaving impulse in the left chest, and one day in the ward while the rounds were being made the aneurysm ruptured directly into a bronchus and the patient died in about two minutes, practically from drowning. The specimen shows a large aneurysm of the thoracic aorta just below the arch, 14 cm. long and about 17 cm. wide when opened. Part of the vertebral column was taken out, showing marked erosion, the whole posterior wall was eroded away by the fibrin in the aneurysmal sac.

3. The third specimen is a brain from a case of tuberculosis of the central nervous system. Multiple solitary tubercles are scattered throughout the central nervous system. The cerebrum showed at autopsy about eight or ten solitary tubercles varying in size from 1 to 2 cm. in diameter; for fully half its area the pons is occupied by a caseous lesion about 2 cm. in diameter, which is typically the solitary tubercle; the cerebellum contained four such tubercles, the largest about 2 cm. in diameter, and the substance of the spinal cord at the level of the eleventh dorsal vertebra was completely replaced by caseous material. These solitary tubercles had, several of them, reached the surface of the central nervous
system, and the tuberculous infection had then spread throughout the meninges, giving a typical tuberculous meningitis. The lungs showed miliary tuberculosis, which was a terminal affair. The first lesion was probably a tuberculosis of the peribronchial lymph nodes, and apparently the infection was carried in the blood stream to the central nervous system where it set up numerous solitary tubercles and then, finally, a terminal miliary tuberculosis involving lung and peritoneum, as well as a tuberculous meningitis.

Dr. F. G. Finley: The case was that of a lad aged seventeen who was admitted to the hospital with a complete paraplegia. Three months previously he had become weak, especially in the legs, and was compelled to use a cane; he fell several times. Urinary incontinence set in at the end of a month. On admission there was complete loss of power, and loss of sensation below the umbilicus; he had incontinence of urine and faeces, and bed sores. The temperature was somewhat elevated and continued so during his three weeks' stay in the hospital, being usually one hundred and two to one hundred and three degrees, though once or twice it was higher. From the first it was noticed that he had headache, never very severe, and he vomited on a few occasions. During the last week of his stay in hospital he became noisy and delirious and developed rigidity of the neck, and a diagnosis of meningitis was made. The reflexes disappeared later on, with the exception of the Babinsky; he also had an optic neuritis. When he first came in all we could say was that he had a complete paraplegia, and therefore a focal lesion of the cord, which was judged to be about level with the eleventh dorsal vertebra. His age, of course, suggested tuberculosis, particularly of the spine, but the x-rays gave no evidence of involvement, and it was not until the meningitis set in that a diagnosis was made of tuberculoma of the cord with a terminal meningitis. As far as could be made out he suffered from none of the general or localizing symptoms of cerebral disease, and this is interesting in view of the large number of tumours in the cerebellum and in the pons, and the multiple tumours in the cerebrum. So far as these tumours of the cord go they are of interest on account of their rarity. In four hundred cases of spinal tumour collected by Schlesinger, one hundred and seven were sarcoma and sixty-four tuberculoma.

Case reports: (1) Primary malignant tumour of the Fallopian tube, by Dr. Fraser B. Gurd. (2) Improved aural lavage, by Dr. E. R. Brown.

Paper: The paper of the evening was read by Dr. A. MacKenzie Forbes, on "A further contribution to the study of scoliosis, illustrated by the living patient and lantern slides."
SOME OBSERVATIONS ON THE DIAGNOSIS AND TREATMENT OF SUBACUTE AND CHRONIC PANCREATITIS

By Edward Archibald, B.A., M.D.
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AND E. J. MULLALLY, M.D.

PANCREATITIS in the acute form is fairly well known nowadays to the general practitioner. It is so dramatic and so sudden, that every body has read about it and is on the lookout for it. We have the impression that the same cannot be said of the milder forms of the disease. We believe it is not yet widely known that many of the attacks of acute pain in the upper abdomen, which pass off in a few hours or a few days, are due to a subacute swelling of the pancreas. These cases are too often set down vaguely as acute gastritis, or gastric fever, or gastric ulcer, or are allowed to go without diagnosis.

It is this type to which we would like to draw attention in this paper. The material upon which it is based comprises the records of thirty-two cases of pancreatitis, acute and chronic, all of which were proved by operation or by autopsy. These have occurred in the services of the late Dr. James Bell, Dr. A. E. Garrow, and Dr. Archibald, in the Royal Victoria Hospital. A considerable number, perhaps a score, in which pancreatitis was diagnosed clinically, but which lack operative or autopsy confirmation, are not included. Of the thirty-two cases eleven were observed in the service of one of us (E. A.).

It is a matter of common belief that gall-stones are almost always present in cases of pancreatitis, and indeed that they are
the chief factor in causation. It is, therefore, the more interesting to find that of the thirty-two cases there were only thirteen in which gall-stones were present; and in only four of these thirteen was the stone in the common duct. This is an experience which runs counter to the figures given in larger statistics in which this point is specifically mentioned.

For the purposes of a clinical description of chronic pancreatitis, or, better called, the relapsing or recurrent type, we have taken, first of all, fifteen out of the nineteen cases in which no gall-stones were found. This with the idea that, being able to exclude the possible influence of stones in the causation of symptoms, there would result a clearer picture, one, that is, more certainly the result of the pancreatic swelling. To this we have added six of the list in which gall-stones were coincidently found, but in which one could feel reasonably certain, for one reason or another, that the recurrent attacks were due to the pancreatic lesion and not to the stones. This makes a total of twenty-one cases, of which ten have come under the personal observation of one of us (E. A.).

In a preliminary way it may be said that the analysis of the symptoms justifies our concluding that the diagnosis is frequently not especially difficult, not nearly so difficult, for instance, as in the very acute cases with hemorrhage and necrosis. Indeed, of the eleven cases in Dr. Archibald's service it was possible in seven to establish a reasonably sure diagnosis before operation.

If one now takes up the symptoms in order, one naturally begins with that of pain. To put it briefly, the feature of outstanding importance is usually pain in the upper abdomen, recurring at irregular intervals. The situation of the pain is nearly always in the mid-epigastrium. It was so in eighteen of the twenty-one cases, while in three it is set down as being in the right upper quadrant. The sufferer from a gall-stone attack, upon the request to place his hand over the site of pain, usually indicates the region of the upper right rectus or further outwards; while the victim of pancreatic swelling will almost invariably put his hand directly in the midline, or sometimes a little to the left. This is true except during the extremely acute phase of hepatic colic, when the pain is so severe that it frequently occupies indiscriminately the whole upper abdomen and cannot be referred to any one area in particular. But when the initial pain has somewhat subsided, the value of the localization indicated is considerable. Certain exceptions must be noted. Thus, we have been led into the error (chiefly by this sign) of diagnosing pancreatitis when the real lesion proved to be an acute
interstitial cholecystitis, the gall-bladder occupying an unusual position close in towards the median line. Even in this case one might have been saved the mistake, had one paid due attention to the localization of the pain towards the end of the attack, just before it subsided entirely; for it was then found to be situated a little to the right, and to have disappeared in the mid-line.

Various anatomical points or landmarks have been given as being particularly indicative of pancreatic swelling. Thus, Mayo Robson’s point is situated an inch to the right of and an inch above the umbilicus. Desjardin’s “point pancréatique” supposed to correspond to the exit of the duct of Wirsung, lies five to seven c.m. from the umbilicus on an oblique line drawn from the umbilicus to the apex of the right axilla. The experience derived from the cases upon which this report is based does not agree with that of the authors just mentioned. There is no fixed point. In practically all cases the area of tenderness has been mapped out with great care by finger pressure. We think it important that this method of palpation should be employed; for if one uses merely the palm of the hand here and there in the epigastric region, one gets no more than the evidence of ill-defined tenderness somewhere in the epigastrium. Such a method will do little to distinguish such differing lesions as cholecystitis, gastric or duodenal ulcer, gastritis, high intestinal obstruction, and pancreatitis. On the other hand, by the method of finger point pressure, advancing gradually from all sides towards the epigastrium as a centre, one is easily able to demonstrate, in cases of pancreatitis, a more or less well defined area of tenderness in which there will be one or two points of maximum tenderness, an area which corresponds accurately enough with the anatomical position of the pancreas. As a natural result, it will be found that the tenderness can frequently be elicited on the left side, as well as in the middle and a little to the right. It rarely extends more than one inch to the right, whereas in some cases, when the swelling affects the whole gland, the tenderness may be followed out nearly to the tail of the pancreas. The point of maximum tenderness is usually found to be exactly in the mid-line, from one to two inches above the umbilicus. Sometimes this maximum tenderness extends half an inch or an inch to the right, or an equal distance to the left. In our opinion this is merely the result of the fact that the acute swelling of the pancreas occupies usually the head and isthmus of the gland, less often the tail, and also that in the mid-line the pancreas is nearest to the surface, and lies upon the prominent bony bed of the vertebral bodies.
The depth at which the pancreas lies would seem also to be responsible for two other particularities in the matter of tenderness. The first is that there is rarely any superficial tenderness except in the severity of the onset, during which period one will occasionally find a Head zone of skin hyperæsthesia. During the subsiding stage one will frequently have to go moderately deep with the finger before exciting tenderness. The other is the presence of tenderness in the left costo-iliac space behind, in which situation one comes more or less directly upon the left half of the gland. If this portion happens to be swollen, tenderness in this area is a marked symptom. I have never found tenderness in the corresponding region on the right side.

While spontaneous pain referred to the epigastrium, being as it is of a subjective character, is notoriously of uncertain value in diagnosis, this sign of tenderness to pressure, upon which we have insisted at some length, is of very much greater value, inasmuch as it is objective. While the complaint of epigastric pain may represent almost any interference with the sympathetic nerve supply of the whole abdominal cavity, localized epigastric tenderness must, as a rule, indicate a localized epigastric lesion. In general terms it may be affirmed that localized tenderness in the abdomen represents very accurately the site of inflammatory processes. It is for this reason that slight differences in the situation of tenderness possess so great a value in distinguishing between lesions of the various organs which are assembled so closely together in the epigastrium. Before concluding these remarks upon the situation of the pain, we would like to express the conviction that if tenderness is definite to the left of the mid-line, and if one can exclude a cardially placed gastric ulcer, one has in that fact rather strong evidence for the existence of a subacute pancreatic swelling.

The radiation of pain has no regularity. Frequently it goes directly through into the back, without reference to one or the other side particularly. Frequently it extends into the right or left hypochondrium, or both; frequently into the right and left iliac regions; not often to the shoulders. Quite often the patient affirms that it has not radiated anywhere, but is fixed in the epigastrium. The variations, we think, correspond in some degree with the severity of the pain.

The degree of pain is frequently characterized by its extraordinary severity. We are under the impression that the pain is more agonizing than that of any other acute lesion of the upper abdomen, including perforated gastric ulcer. Large and repeated doses of morphia frequently fail of their effect.
Its duration is very variable, being according to the severity of the attack. The pain may last, so far as one can judge from the histories, as short a time as a half hour or even less; or it may persist for a week or more.

As to the recurrence of the attacks, this also varies widely. One patient had slight attacks of pain nearly every day for seven months, and then developed an acute attack ending in total necrosis of the pancreas and death in a few weeks. Another had mild attacks about once a month for ten years. Two patients, girls of twenty-one and twenty-two years of age, respectively, had had frequent attacks every year since the age of fourteen. Another had apparently had frequent attacks for twenty-five years. In all these one could exclude the possibility of gall-stones, which were not present at operation. But in some the presence of adhesions around the pylorus, duodenum, or gall-bladder, even in the absence of gall-stones, or of the evidence of ulcer, left the diagnosis of the cause of these frequent attacks a little unclear. Nevertheless, in some of these, even adhesions were absent, and one is obliged to assume that a short attack of epigastric pain, lasting half an hour or less, may in all probability be set down to transient swellings of the pancreas, the cause of which remains obscure. Very possibly a passing obstruction to the discharge of pancreatic juice, or a spasm of the papillary sphincter may lie at the root of it.

In three cases the pain amounted only to chronic epigastric distress, with occasional sharper, although still mild, attacks of pain. In all these the pancreas was found enlarged and harder than normal, either in the head or throughout the organ.

The incidence of pain in regard to the taking of food seems to be most uncertain. It would seem clear that in some cases at least, the taking of any food was liable to provoke an attack, so that some of the patients volunteered the information that they had limited their diet for long periods of time to little more than fluids. So far as one can tell, the carbohydrates are more apt to cause, or to aggravate, the pain, than the other kinds of food; and this is more or less in accord with physiological findings which go to show that the carbohydrates provoke a large flow of pancreatic juice. In many cases, however, the attack seems to have come on while the patient was fasting.

Like appendicitis, pancreatitis is typically relapsing. In five of these nineteen cases, the relapse ultimately took the form of the acute necrosing or hæmorrhagic pancreatitis, ending in death. Chronic relapsing pancreatitis is therefore a dangerous disease, more dangerous certainly than appendicitis.
The presence of palpable tumour is rare. Only in two cases, so far as one can tell from the histories, has it been present, and both of these were thin women. On the other hand, it is quite frequent to find mention in the histories of an indefinite fulness or enlargement in the epigastric region. It must be remembered that from its deeply placed position a swelling of the pancreas must attain considerable size before it can be easily felt. Aortic pulsation, if unnaturally prominent, or too easily felt, is suggestive. In thin people this sign has but little significance, but in stout patients it should arouse suspicion.

The symptom of jaundice, in cases in which common duct stones are excluded, is of but moderate value in diagnosis. It was present only in nine out of nineteen cases, and it was characteristically slight and transitory. One may say of jaundice that it is remarkable rather for its absence in pancreatitis than for its presence.

Vomiting is present as a rule, although in three of the twenty-one cases it was absent. These, however, were of comparatively mild type. Chill is quite frequently found, and has some value in differential diagnosis. Emaciation is rarely seen.

Rigidity is usually remarkable by its absence, or its slightness, except in the later stages of the more acute cases, when the peritoneum becomes involved. It is, of course, present to some degree, but as the pain subsides, it requires fairly deep palpation to elicit muscular resistance. The respiratory movements are frequently not much limited. It must be remembered that the flanks and the lower parts of the abdomen on both sides are apt to be tender to palpation, although the area of maximum tenderness is in the epigastrium. It is fairly certain that this spreading tenderness is due to a mild peritonitis, set up by the diffusion of the pancreatic ferments along the preperitoneal lymphatics, which excite frequently a serous, or even sanguinolent, fluid in the peritoneal cavity.

To sum up: In the diagnosis we are inclined to lay the greatest stress on the situation of the tenderness upon finger palpation. The differential diagnosis must bring into consideration chiefly gastric and duodenal ulcer, cholecystitis, cholelithiasis, mesenteric embolism or thrombosis, renal calculus, high intestinal obstruction and neurosis. All these possess fairly certain signs and symptoms of their own, and give fairly clear histories, which we need not recount in detail.

Perhaps the most serious difficulty is found in differentiating the disease from gall-stones. When these are confined to the gall-
bladder, and the symptoms are due chiefly to cholecystitis, the
diagnosis is best made from the location of the tenderness on
palpation, which, in the one instance, is chiefly in the mid-line, and
in the other, chiefly in the right hypochondrium. If, on the other
hand, the stone is in the common duct, it may be impossible to be
sure of the diagnosis. Indeed, as we all know, both conditions are
not infrequently present coincidently. But even in such cases
the tenderness will usually be found to extend over the mid-line
and to the left, when the pancreas is involved coincidently with
a stone, and only to the right of the mid-line, or in the mid-line,
when stone alone is present. Of course, these somewhat fnical
differences can be made out, as already said, only upon careful and
methodical finger-point palpation.

The same localized tenderness in the mid epigastrium, or a
little to the left, is found also in cases of gastric ulcer; but here the
tenderness is usually less diffuse than in pancreatitis, more localized
to one point; besides which the clinical courses of the two diseases
are fairly distinct. It is very unusual in gastric ulcer to get a
history of recurring attacks of diffuse epigastric pain with fever.
Nor in pancreatitis is it usual to find the rather characteristic
aggravation of pain, shortly after the taking of food, as in ulcer.
Duodenal ulcer is easily distinguished by its hunger pain and its
relation to the ingestion of food. The pain of pyloric and gall-
bladder adhesions may be difficult to exclude, but these practi-
cally never give rise to such acute symptoms as does the ordinary
attack of pancreatitis.

So much for the clinical aspects of the disease. It remains to
say a few words concerning the possibility of making the diagnosis
by laboratory tests. To go fully into this side of the subject would
require more space than is here at our disposal. The Cammidge
test has excited a great deal of interest, and much has been written
both for and against it. During the past five years a good deal
has been done along this line in Dr. Bruère's laboratory at the
Royal Victoria Hospital by Dr. Bruère, assisted at various times
by Dr. McKenty, and the authors. A paper upon this aspect of
the subject is under preparation, but we are permitted to say here,
very briefly and very generally, that while it was found positive in
the majority of cases of pancreatitis that we have examined, there
were rather frequent exceptions, chiefly in the way of its being
negative in definite cases of the disease, but also in its being positive
in one or two cases in which the disease was not present. In
spite of numerous recent articles unfavourable to the Cam-
midge test, we are inclined to attach to it some value, when it corroborates the clinical signs. It is, after all, a rather empirical test, inasmuch as we do not yet know how, or from what, the crystals are formed.

It is quite otherwise with the tests which are based upon interference with the external secretion of the pancreas, that is, the ferments which split fat, proteids, and starch. The presence or absence of these ferments can be definitely determined, and conclusions drawn from such observations are fairly sure. We have carried out with Dr. Bruère numerous tests, chiefly in the search for lipase and amylase. Unfortunately it seems to be the case that in the subacute and mild attacks of pancreatic swelling, excretion of the ferments into the bowel is not usually interfered with to such an extent as to be recognizable. The pancreatic swelling must clearly be considerable before the pancreatic duct is blocked. Once this does occur, however, it becomes possible, on the one hand, to demonstrate their absence in the faeces, and on the other, their presence in the blood, or rather, as is usually done, in the urine. In one striking instance, these tests clinched the clinical diagnosis of pancreatitis. It was in the case of a girl of twenty-one, who, since the age of fourteen, had had a number of attacks of epigastric pain with vomiting. Upon admission into Dr. Archibald's service there was discovered a tender mass corresponding to the situation of the pancreas. The clinical signs and symptoms were, it was thought, characteristic of subacute pancreatitis, although one consultant decided in favour of a gall-bladder lesion. Dr. Bruère examined the urine and faeces shortly after admission, and again about a week later, when the inflammatory symptoms had subsided. At the first examination trypsin and amylase were found to be almost absent from the faeces, while amylase and lipase were present in excessive amount in the urine. The second examination demonstrated a return to normal in this respect, coincident with a manifest subsidence in the pancreatic swelling. Operation showed a pancreas enlarged throughout to nearly three times its normal size, with a few scattered areas of fat necrosis around it. The gall-bladder contained a number of stones, but the common duct was empty. It was evident here that the swelling of the gland in the acute stage had been sufficient to dam back the ferments and force their absorption into the lymphatics and the blood. It was clear also that such a condition was apt to disappear rapidly with the subsidence of the inflammation, and consequently that these laboratory tests must be made at the proper time. A
day may make all the difference in their turning out positive or negative. Upon the whole, Dr. Bruère and ourselves are of the opinion that the test for the starch-splitting ferment offers the best chance of positive results. The results with the estimation of lipase, which has been worked out with some thoroughness during the last five or six years, are less encouraging, although by no means without promise; an article on this subject is under preparation. To sum the matter up, it may be said that the finding of amylase in the urine in undue amount is of strong confirmatory value, while its absence by no means excludes pancreatic swelling.

The pathogenesis of subacute and chronic pancreatitis is as yet comparatively unknown. Some claim that the swelling is due to the invasion of bacteria, either in the bile, or ascending from the duodenum. It is pretty certain that any such assumption is unjustified. Others assert that infections in the gall-bladder travel by way of lymphatics to the head of the pancreas and there set up the disease. This also remains little more than an assumption. It seems to us most probable that the cause of the swelling is more in the nature of a chemical irritant, and that most frequently this is introduced into the pancreatic duct by the entrance of bile. We know that bile, particularly if unmixed with mucus from the gall-bladder, does possess this irritating effect upon the pancreatic tissue. How it is forced into the pancreatic duct, in the absence of gall stones, is as yet unknown.

Treatment. What can be done for these recurring attacks of pancreatic swelling? It may reasonably be claimed that medical treatment stands here about on the same plane as the medical treatment of recurring appendicitis. Rest and limitation of diet are the chief indications. Usually the attack of pain subsides in a few hours or a few days, leaving a tender area in the epigastrium, which persists for several days to a couple of weeks. The patient is, however, very subject to a repetition of the attack, and it is our opinion that surgical treatment is indicated as soon as the diagnosis is made, or rather as soon as the diagnosis becomes one of probability. The analogy with appendicitis holds good in respect of the necessity of operation. In appendicitis most physicians now recommend operation in order to prevent recurrence of attacks, any one of which may end in perforation and general peritonitis. In the same way, with pancreatitis, operation is indicated because the patient is seriously exposed to a recurrence of the attacks, any one of which may take the form of the acute hemorrhagic lesion, with fatal outcome. It is true that as yet we have not sufficient
experience to enable us to promise that operation will certainly cure. Nevertheless, very striking results have been already obtained, results which are quite sufficient to justify us in advising operation without hesitation.

What then is the operation which is indicated in these cases of chronic relapsing pancreatitis? The answer has been variously given. All are agreed that a drainage of the bile, away from its ordinary course, through the common duct, is the one thing for which we have at present any definite reason. But some have said that this should be done by cholecystostomy, draining the bile through a tube to the exterior. Others have said that it is better to do a cholecystenterostomy, draining the bile by a circuitous route into the intestine below. W. J. Mayo and others have advised the first for the lighter cases and the second for those in which the swelling of the pancreas is of such a nature as to bid fair to be of long duration. The results hitherto published for both of these operations have been, on the whole, most encouraging. Our own opinion is that the operation of choice is a cholecystostomy. In an address about three years ago before the St. John Medical Society (by E. A.) experiments on dogs were reported which went to show that a cholecystenterostomy did not divert the bile from the common duct, unless there was permanent obstruction in the common duct. With the common duct patent, the bile simply neglected the new route through the gall-bladder and took the old path. Now, as a matter of fact, the swelling of the pancreas in pancreatitis does not often obstruct the common duct, or at least does not obstruct it to the point of causing jaundice. And in those cases in which it does do so, the jaundice is very often slight and fleeting, disappearing within a day or two. Consequently, cholecystenterostomy, which is a much more serious operation than cholecystostomy, should be avoided because it not only adds danger, but also fails to do the work it is supposed to do. Cholecystostomy, on the other hand, can be depended upon to drain to the exterior from six to sixteen ounces of bile a day.

It may be asked, why is it that the drainage of bile does good, or apparently does good, in chronic pancreatic swelling? The reason usually given is that a gall-stone has lodged at the ampulla of Vater and has dammed back the bile into the pancreatic duct. The removal of the stone and the diversion of infected bile away from the common duct for a time, allows the pancreatic swelling to subside. While this is probably true for some of those cases in which stones are present, it hardly accounts for those in which the biliary
passages and the bile itself are apparently free of any lesion; and these form a considerable proportion of all cases. For these, some other reason has to be sought. Recent experiments carried out in the new Experimental Medicine laboratory at McGill have supplied what may at least be considered a clue to this problem. There exists a true sphincter at the outlet of the common duct into the duodenum; it has been demonstrated anatomically for many years; and one of us (E. A.) is engaged in an investigation of it from the physiological side. It has been found that this sphincter will resist a water pressure nearly six times that under which the secretion of bile in the liver takes place, and three times that of the expulsive force of the gall-bladder.

It is not unnatural to think that there may easily occur a spasm of this sphincter of the papilla which would bring the bile coming down from the gall-bladder and liver under exceptionally high pressure. Such an event might easily result in forcing bile back into the pancreatic duct, and so set up a pancreatitis. Under such circumstances, a diversion of part of the bile through a cholecystostomy opening would reduce the pressure in the biliary passages to such an extent as to preclude the forcing of bile into the pancreatic duct. In this light it may reasonably be claimed that the good effect of these operations lies chiefly in the fact that they reduce pressure in the biliary system, or avoid any excessive rise of pressure by virtue of affording a safety valve. The pancreatitis is therefore given a chance to subside naturally.

How long should such bile-drainage be kept up? We think it should be maintained until the pancreas has returned to its normal condition, if that is to occur at all. In cases of considerable swelling and hardness of the gland, three months are none too long. In milder cases, a shorter period may suffice. One patient with a marked condition was drained for ten days only; his attacks soon recurred.

In general, the cases treated by cholecystostomy have remained well for from one to twelve years.
THE NATURE OF SURGICAL SHOCK WITH SOME REMARKS ON ITS TREATMENT

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The present series of experiments was undertaken with the idea of testing the value of pituitary preparations in surgical shock. This has necessitated some re-investigation of the latter subject and a criticism of current views as to the nature and origin of the condition described as surgical shock. All the experiments have been carried out under ether or chloroform anaesthesia, and in some cases morphia and curara have also been given.

The term "shock" is an old one, but attempts to define the true nature of the condition have accumulated considerably within the last few years. The work of Crile is well known. This author claims to have induced surgical shock in animals by various means, such as electrical stimulation of the vagus and sciatic nerves, crushing injuries of the limbs, manipulation of the intestines, and other traumata. He judges of the degree of shock mainly by the extent to which the blood pressure is depressed. Judging by this criterion it is obvious that, from the list of injuries given, the condition known as surgical shock may be due to many very different causes. Stimulation of the peripheral end of the vagus nerve will, of course, produce a lowering of the blood pressure, and stimulation of the central end of the cut vagus may cause a reflex depressor effect. Stimulation of the afferent terminals of this nerve will produce a similar effect. Thus, a distinct temporary lowering of blood pressure sometimes brought about by handling the intestines, one can imagine, might be due to a reflex depressor effect through the vagus nerve.* If, however, all the causes of surgical shock can be analysed as clearly as those referable to vagus inhibition, it is obvious that the need for the term "shock" would disappear. The matter is, however, by no means clear; it is, for example, exceedingly doubtful whether prolonged stimulation of the afferent fibres of the vagus will produce a permanent effect which can be

* As we shall see, however, the effect occurs when both vagi are cut.
called "shock." Again, I have only seen prolonged stimulation of the efferent fibres of the vagus cause death in animals when the blood pressure was already low from other causes.

It may be assumed that the term "shock" would not include poisoning by the anaesthetic* or depression of vitality from loss of blood. The term has been employed, by those who use it with any degree of exactness, to indicate a degree of depression which affects all the important vital functions and which seems in some way, not yet understood, to be due to the direct traumatic effects of the operation or injury. The effects are supposed to be more liable to be manifested during certain abdominal operations.

* It may be noted, however, that Henderson applies the term "shock" to the condition produced by the injection of such substances as albumose or peptone. _Amer. Jour. Physiol._, February, 1908, p. 141.
Henderson\(^1\) has recently put forward a theory which correlates surgical shock with a deficiency of carbon dioxide in the blood. A condition named “Acapnia” by Mosso (literally, smokelessness) is produced by the rapid respiration caused by pain, or the inhalation of ether or chloroform. Increased loss of carbon dioxide also occurs when the intestine is exposed, and more particularly when moist heat is applied. This kind of exposure in laparotomies on the human subject, Henderson states, is a frequent cause of surgical shock. He further states that it may be prevented by bubbling carbon dioxide gas through the saline solution in which the towels are moistened. His experiments certainly show that there is an increase of carbon dioxide exhalation under the conditions of warmth and moisture, though theoretically it is difficult to understand how the small amount of carbon dioxide contained in warm saline solution could be of any distinct benefit. Moreover, it has not been found possible to corroborate Henderson’s statement that this method of treatment with carbon dioxide is beneficial.

Meltzer\(^2\) says, “With regard to shock, one theory assumes that the injuries which produce shock disturb the equilibrium, causing a tendency towards inhibition. It certainly does not mean reducing the function to a single principle, to inhibition alone; it only means shifting the tendency towards inhibition. Stimulation of nerve fibres which usually cause excitation will still excite, and fibres which cause inhibition will still inhibit and probably inhibit even better than in a normal state.”

In order to study experimentally the cause or causes of surgical shock, it is necessary that one should be able to induce the condition at will. It is perhaps difficult to determine when an animal is suffering from shock if the experiment is carried out under an anaesthetic in the ordinary way. If the animal be allowed to recover from the operation, then “clinical symptoms” may be called in evidence; otherwise we are bound to fall back upon the condition of the main bodily functions, circulation and respiration, as signs of the animal’s general condition; or if death occurs, and no definite assignable cause be present, this would be usually attributed to “shock.” The majority of recent observers seem to have attached most importance to the blood pressure as a test of the condition of shock.

I have attempted to induce surgical shock in dogs by the following means, many of which have been employed by Crile; viz., electrical stimulation of nerves, such as the vagus, the sciatic, and
the brachial plexus, for various lengths of time, crushing of these nerves, handling of the intestines and dragging on the mesentery, squeezing the liver, spleen, gall bladder, and pancreas, dragging on the stomach, dilating the foramen of Winslow with the finger, crushing of testes and ovaries, pressure on the abdominal sympathetic, the application of heat and cold of various degrees to the intestines and to the surface of the body.

Many of these stimuli, such as those applied to the central end of afferent nerves, cause the rapid respirations mentioned by Crile and Henderson, but this rapidity does not continue throughout the whole period of stimulation. It becomes slower, and after a few minutes the respiration is actually less frequent than normally; later it returns to the normal. On stimulation of an afferent nerve there is usually a slight temporary rise in the blood pressure, very rarely a fall, and a condition resembling surgical shock has never, in the present series of experiments, been produced by these means. In dogs under anaesthesia, incision of the skin of the abdomen causes, with fair constancy, a small but distinct fall of blood pressure (Fig. 1). In very deep anaesthesia there is usually no change in blood pressure with a clean quick incision. If the incision, instead

Fig. 2—Dog. Ether. Repeated incisions of skin of abdomen.
of being a quick continuous one, be of a slow haggling nature, the
fall of blood pressure may be considerable and last over a period
of some minutes, as shown in Fig. 2.

Handling of the intestines or changing of the warm, moist
towels almost invariably produces a slight fall of blood pressure
which lasts about a minute. The fall is evidently not entirely
caused by the warmth and moisture, but also by the touch of the
towel and the manipulation incidental to putting it in place. A
similar effect is produced on the same animal by handling of the
intestine without the use of the towel.

Marked lowering of the blood pressure* on handling the viscosa
was at first thought to be in part due to a reflex inhibition of the
heart through the afferent fibres of the vagus. This effect is pro-
duced, to a slight degree, on each occasion that a towel, wet or dry,
hot or cold, is applied to the intestine. The effect is the same in a
less degree as stimulating the central end of one cut vagus, the other
being intact.† The lowering of the blood pressure on handling the
intestine seems, however, to be a complicated phenomenon. It
cannot be entirely due to reflex inhibition of the heart through the
vagus, because it occurs when both vagi are cut. The precise re-
result obtained upon the blood pressure by handling the intestine
depends in fact upon the way in which the handling takes place.
If a large bulk of intestine is compressed with both hands simul-
taneously, the blood pressure is distinctly raised, and this effect
is obviously due to the squeezing of a quantity of blood out of the
splanchnic area. When such compression is relaxed, the blood pres-
sure immediately falls. This pressor result of steady compression
of the intestine is apt to be replaced, after the application of warmth
and moisture, by a depressor effect, which is, under the majority
of conditions, the usual sequel of brisk handling of the gut. This
latter depressor effect is exaggerated after a period of warmth and
moisture, and it is perhaps more marked and occurs more certainly
after section of both vagus nerves. The result is also quite definite
after doses of nicotine sufficient to block the passage of impulses from
the pre- to the post-ganglionic fibres of the vagus. Very large doses
of nicotine abolish the effect. This seems to suggest that the
phenomenon may be due to a vaso-motor reflex from the enteric
system, comparable to the “law of the intestine” reflex obtained

* This does not invariably occur. In some of my experiments the blood pressure
is unaltered even after handling for five minutes.

† With intestines not exposed there is invariably a rise of blood pressure on stimu-
   lating the central end of the cut vagus.
by Bayliss and Starling. It occurs when both splanchnic nerves are cut, but is almost abolished when the solar plexus is extirpated. One other possibility alone remains, viz., that the phenomenon is due to the stimulation of the vaso-dilator fibres in the gut itself. It is possible that by the mode of stimulation which is employed,

![Figure 3](image)

Fig. 3—Dog. 13 K. Ether. Both vagi cut. Nicotine. Kneading of intestines.

the vaso-dilator fibres might be more strongly stimulated than the vaso-constrictors. The lowering of blood pressure on handling the intestine would appear then to be due to several causes; first, and perhaps chiefly, it is to be attributed to a reflex vaso-motor influence through the splanchnics, a small part would seem to be also due to a reflex from the enteric nervous system, while a still smaller part is probably to be attributed to a purely local stimulation of the vascular wall of the intestine.

Another result which may occur on handling the intestine is an
inhibition of all respiratory movements, which inhibition lasts for a variable period and may lead to a rapidly fatal result through asphyxia (Figs. 3 and 4).

I have been able to fully confirm, as far as dogs are concerned, the statement of Meltzer that, after the abdomen has been opened for some time, stimulation of the central end of the vagus stops the respiratory movements (Fig. 5).

In some cases, in dogs, where a condition which would presumably have to be called surgical shock has been induced, a post-mortem examination has not revealed any deficiency of chromophil tissue in the adrenal bodies. This observation is recorded because Parkinson and Bainbridge have stated that they found the chromphil tissue absent in the adrenals in two autopsies in cases of death from post-operative shock. No study has, so far, been made of the abdominal chromphil body in these conditions. Elliott, however, finds that the irritation of a cerebral puncture and haemorrhage and that of single ether anaesthesia are attended by a centrally excited loss of adrenalin from the adrenal bodies, through the splanchnics. I have, so far, been unable to confirm this result in dogs. In one of the present series of experiments, etherization and cerebral stimulation lasting for nine hours has failed to produce any appreciable exhaustion of the chromphil tissue. Nissl, Mott, Sarbo, Marinesco, Dolly and Crile found alteration in sinal granules in conditions of shock. Changes have been observed by others, Mott, Sarbo, Marinesco.

When warm, moist towels are continuously applied, as in an ordinary laparotomy in the human subject, I have found, as Henderson states, that in experiments lasting some considerable time, from about two hours upwards, a steady, slow diminution of the blood pressure occurs, which may go on to a reduction of 70 or 80 m.m. Hg, and may continue in this manner for some time; but suddenly respiration stops, a rapid fall of blood pressure occurs and death results; a tracing similar to Fig. 4. being the result.

In some instances very little reduction of the blood pressure occurs even in the course of a long experiment, but ultimately a sudden fall occurs, and death ensues in the course of three or four to ten minutes. The respiration fails first; in one case this occurred six minutes before stoppage of the heart. As pointed out above, this stoppage of the respiration may be the immediate result of the handling of the intestine, but a permanent stoppage from this

*Henderson mentions eight minutes as the length of this period in one of his experiments.
Fig. 4.—Dog. 12.5 K. Ether. Intestines had been exposed for some time to warmth and moisture. At A dragging on mesentery caused fatal stoppage of respiration and fall of B. P.
cause has only been noted when the blood pressure was already very low from other causes. This effect may occur when both vagi and both splanchnics are cut, and after the largest possible doses of nicotine. In those cases where death did not occur in this manner and the animal was killed by other means at the end of the experiment, it may be argued that the experiment had not been carried on for a sufficiently long time or the condition of shock would have come about.

Although the condition of "acapnia," to which Henderson attributes all cases of shock, may be the cause in some instances, it would appear from this series of experiments that these are comparatively rare; though there can be little doubt that an optimum tension of carbon dioxide in the blood is a factor controlling both the normal activity of the respiratory and vaso-motor centres and the output of the heart. The gradual or sudden lowering of blood pressure, leading to death, is not due to the anaesthetic, as great care was taken that there should be no overdose. But prolonged anaesthesia is no doubt a contributing factor in the final state of general depression.

Crile refers to the shock-producing quality of different tissues, stating that the handling, incising, or dragging on certain tissues which vary in sensitiveness produces more shock than similar treatment of others. He states, also, that the degree of delicacy, skill, and rapidity with which a surgeon makes an incision or performs manipulations tends to cause more or less shock. Certainly a quick, clean incision causes little or, in some cases, no fall of blood pressure, while a number of strokes of the knife used to perform the same incision sometimes causes a severe, though temporary, fall. In the one case a lighter, but still efficient, anaesthesia is required than in the other, and this in my experience of the human subject seems to be an important factor, not only in the avoidance of depression due to the operation but afterwards. The same holds good in handling the abdominal organs, dragging on the mesentery, etc.

With the possible exception of the lowering of the blood pressure which occurs after an experiment lasting several hours, referred to above, the only other condition which could be called "shock," observed in the present series of experiments, is a marked fall of the blood pressure occurring in dogs under simple ether anaesthesia, when the thorax was opened for the purpose of recording the movements of the heart. In these cases, although artificial respiration was commenced before the operation of opening the chest wall was
begun, by the time that operation was finished the blood pressure had usually fallen about two-thirds of its volume, and a state of so-called "shock" was present. This was not the result of hæmorrhage, since comparatively little blood was lost. It may, however, have been due, to some extent at least, to attempts at spontaneous respiration interfering with the mechanical respiration, as I have never seen this fall under the same circumstances when curara was employed. In these cases the blood pressure was raised and remained at a high level for a long time if a dose of 1 c.c., 20 per cent. pituitary extract was administered (Fig. 6).

**TREATMENT OF SHOCK BY MEANS OF SALINE INJECTIONS.** It is not an uncommon practice in various depressed conditions to administer normal saline solution intravenously or subcutaneously. This is no doubt beneficial in some instances, particularly where severe hæmorrhage has occurred. There is, however, a danger recognized by some but often overlooked in making this a routine

Fig. 5—Stimulation of central end of vagus (both vagi cut). Abdomen has been opened for some time.
practice. It does not seem to be a very scientific procedure to inject a quantity of fluid into the circulation, when little or no loss of blood has occurred, thus increasing the quantity in the vessels above the normal; and experience of some cases seems to show that the procedure may not only be useless but positively dangerous⁸; and in some of my cases where an injection has been given, death has resulted rapidly without any other apparent cause for it than the injection. Other observers have found changes in the liver cells, the red cells of the blood, changes in heart muscle and capillary walls of animals, fatty changes in the heart muscle and kidneys, and glycosuria.⁹

The throwing into the circulation of a quantity of sodium chloride, generally two to four drams, would cause a serious strain upon the kidneys, which in the case of renal disease might easily prove a source of considerable danger to the organism.

**THE EMPLOYMENT OF PITUITARY PREPARATIONS IN CONDITIONS OF SHOCK.** Pituitary extract is now prepared by several firms in convenient form for use and already sterilized. Injected into the circulation its effect is to raise the blood pressure, not so extensively or so rapidly as adrenalin (unless a very large dose is administered), but for a much more prolonged period; usually, it is said, for twelve hours. I have always found some fall, from the highest point reached, after fifteen to twenty minutes, but the pressure does not return to its previous level for at least some hours.

In order to prevent the exudation of fluid through the vessel walls when saline has been administered, it is desirable to give a previous injection of pituitary extract, or to mix the pituitary extract with the saline and inject the mixture. Experiments show that this proceeding is more efficacious than the use of saline alone. I formerly used adrenalin for the same purpose, but owing to its evanescent action (which, however, was overcome in some degree by mixture with the saline solution and administration subcutaneously, so that the absorption would be slow and the action correspondingly weak and continuous) it was not nearly so efficacious as pituitary extract.

In the course of these experiments I have used the extract prepared by myself from the powdered gland supplied by Merck, Burroughs-Wellcome's extract, and Parke, Davis and Company's. To obtain a certain effect the equivalent of 1 c.c., 20 per cent., as contained in one of Burroughs-Wellcome's capsules, must be used in a dog of average size. This corresponds to the dose recommended
for use in the human subject, which has never failed, in my experience, except once,* to give good results.

It has been noted in a large number of experiments that when adrenalin is injected after a previous injection of pituitary, the rise in blood pressure caused is much more lasting than if no previous injection of pituitary were given. This has been noted by another observer, but I have lost the reference.

* This case was one in which a fibroid (subperitoneal) had been removed from a uterus; the surface bled freely, and a dose of pituitary failed to stop the haemorrhage or to cause uterine contraction. A large dose, however, might have had some effect.
SUMMARY

1. Under certain circumstances a condition of depressed vitality occurs in dogs under operation. This usually occurs after a prolonged experiment under anaesthesia, especially when the intestines are exposed and frequently handled. This depressed vitality is manifested by a lowering of the blood pressure and sometimes interference with the respiration.

2. Compression of a large bulk of intestine raises the general blood pressure, although brisk handling of the gut causes a temporary lowering of the blood pressure. These are transitory effects and not clearly connected with "shock."

3. As to whether increased escape of carbon dioxide from warmed and moistened intestine is an important feature in the production of "shock," as Henderson believes, the present series of experiments is inconclusive, but the slowly progressive depression of vitality cannot be prevented by treatment of the warm saline with carbon dioxide.

4. In but few cases has stimulation of afferent nerves produced a lowering of blood pressure, and in none a condition resembling shock.

5. If anaesthesia be not very deep, the abdominal incision may cause a lowering of blood pressure, which may be considerable and prolonged if the incision be also of this character.

6. A condition of shock develops after prolonged operative procedures, when the intestines are exposed to air or moist warmth, or occasionally after very severe operative procedures which are of comparatively short duration, but which interfere to some extent with respiration.

References:


2. Archives of Internal Medicine, July, 1908.

3. Loc. cit.

4. Lancet, 1907, i, p. 1269.


MEDICAL INSPECTION OF SCHOOLS

REPORT OF THE SPECIAL COMMITTEE OF THE CANADIAN MEDICAL ASSOCIATION

The first report of this committee, which was given at the annual meeting in Toronto in 1910, presented four recommendations, as follows:

1. That the Board of Education, Minister of Education, and Council of Public Instruction in each province should have an expert medical adviser, who should organize a complete system of medical inspection and supervision of schools and scholars.

2. That so far as possible the school medical service and the public health service should be coordinated.

3. That the system adopted by British Columbia in the "Act to provide for the medical inspection of schools, 1910," be approved by the Canadian Medical Association.

4. That in view of the vast importance of all matters affecting public health, a section on public health should be added to the permanent organization of the Canadian Medical Association.

The fourth of the above recommendations is the only one which has been put into practice. British Columbia still remains the only province in which the government has an expert medical adviser charged with the duty of organizing and inspiring a practical system of medical inspection and supervision of schools and scholars, and the only province which has placed adequate legislation on the subject upon its statute books. Moreover, where medical inspection is attempted, it has not been, to any great extent, coördinated with the Public Health Service. British Columbia is again an exception. But we now have a Public Health Section of this association, and perhaps since this has been done, the work of this committee should be merged in the work of that section.

During 1911 and 1912, the work of medical inspection of schools in Canada has extended and a good deal more money has been expended for this purpose. Thus, Toronto has increased the appropriation from $23,000 to about $40,000.

The Ontario Medical Council passed the following resolution with regard to the inspection of school children at its recent annual meeting: "That the council, in the interest of school children,
respectfully recommend to the Minister of Education the advis-
ability of taking a physical census of the school children, with the
view of comparing the health and physical condition of children
in urban and rural districts; and in the meantime further recom-
mand the training, as in England, of the students in the model
schools, normal schools, and of faculties of education in such a
knowledge of school hygiene as will enable them to recognize com-
mon defects and diseases of children.” It is perhaps to be regretted
that dental hygiene is not specially mentioned in this resolution.

There is an opinion slowly gaining ground in the community
that medical inspection must be a part of the programme of any
civilized state which wishes to preserve its power and government
from century to century. If we are not to be overwhelmed by the
unfit, the disabled, the feeble-minded, and the failures, we must
plan out an improved and more practical system of education—one
not quite so separated from the child’s after life as bread-winner
and citizen. The foundation of a better citizenship must be laid
in school life, and no small part of it should be directed by those
who have not only the knowledge required to recognize diseases
and defects and their causes, and the energy and initiative to prevent
the one and see that the other is treated, but also the scientific
imagination to see what these defects, if not remedied or prevented,
will mean to the community as well as to the individual in after life,
and the patriotism to prefer devoting their lives to the public service
rather than following a path more promising as to ease and wealth.

The following leading editorial from the Guelph Herald will
serve as an example of the direction in which public opinion is
moving. “Even those who are opposed to ‘fads’ or anything of a
similar nature, must see that the days of medical inspection are
rapidly coming. A few years ago the writer would have ridiculed,
and did, the thought of having scholars attending our public
schools medically examined from time to time. There can, how-
ever, be no question to my mind, speaking as one who formerly
opposed inspection, that an inspection of our children attending
school by a qualified medical man cannot fail to be productive of
locating undreamed of physical drawbacks under which some chil-
dren suffer and are consequently hindered. When once these are
known, in the majority of cases, no doubt, a remedy would be sup-
plied by the parents.”

The tide is on the turn. Thousands of dollars are now appro-
priated for medical inspection of schools in the cities of Canada.
But the Canadian taxpayer is no fool. He did not give that money
to pile up tons of statistics that no one will ever look at, or to provide a fixed income for the younger members of the profession. He pays this money because he is assured it will benefit the children of Canada. And if the expenditure does not result in healthier children, less absence from school, more freedom from contagious disease, the expenditure, which is at present experimental, will not be continued year after year. We should try, therefore, to make medical inspection as efficient as possible. Now is our chance. We may not get a second opportunity.

Controversy. The year has not passed, of course, without some controversy over the question of medical inspection of schools. In one instance there had been apparently a lack of tact and consideration for the teachers on the part of one or more medical inspectors. This is greatly to be regretted. It is quite enough to spoil the best system of medical inspection. The only reason that can justify the entrance of a doctor into the school is that the doctor can help the children and the teachers. Endeavours to establish the medical inspection of schools during the year have not been uniformly successful. Thus, in one city in Canada, a modest appropriation of some $2,000 was asked for to establish the work, and evidence was not wanting to show that the work was needed. One parent, who had three children attending school, successfully concealed for some days the fact that she had smallpox, and secreted herself in a large packing box when the medical health officer came to see her. But the grant, small as it was, was refused. It may be added that a number of the citizens of that city do not even believe in vaccination. Some objections have been urged in other cities, sometimes with good reason, as when it was shown that the medical inspector's duties were really performed, not by him, but by a nurse.

Deficient Children. Interest in physically and mentally defective children is growing in Canada, and this may be regarded as in some sense a result of the work already done in this country in medical inspection of schools. It became necessary to hold an investigation into the management of an industrial school during the year, and this brought out the fact that at least one-third of the inmates were mentally defective. Further steps are about to be taken in regard to the care of these children. The appointment, by the mayor and corporation of the city chiefly concerned, of a number of persons to hold a conference in regard to the care of the feeble-minded in the city was another step of some consequence, as was also the visit to Canada, on the invitation of this conference, of Superintendent Johnston, of Vineland, New Jersey.
The address given by Professor Johnston (himself a native Canadian) will rank as an event in the history of the care of the feeble-minded in Canada. Professor Johnston pointed out that compulsory education and compulsory medical inspection of schools were the first steps to be taken, if we would find and care for the feeble-minded. That as long as children were of school age their education might be provided for largely by the municipality. That when these feeble-minded persons passed the limit of school age, they should, for their own good, and for the general good, be cared for and supervised by the government in a farm colony or other place where they may be made to be happy and useful and can do no harm.

In March, 1911, a class for mentally defective children was opened in Vancouver. A most interesting experiment has been made in Fort William during the year. The supervising principal has placed under the charge of a teacher, remarkably qualified for such work, a number of children who were either mentally deficient or sadly misunderstood as to their difficulties in the ordinary class. The result has been gratifying. Discipline, general comfort and progress have been greatly promoted by utilizing for these children the special gifts of a teacher who knew how to make the best of them and remove obstacles to their progress. This and other results of medical inspection of schools have been appreciated in the cities and towns where it has been tried.

Sanitary Conditions of Schools. It is well known to the many members of the association that the sanitary condition of our schools and school out-buildings is not always good. The sanitary conveniences are not what they ought to be in many cases in regard to privacy, cleanliness, and appearance. Surely this could and should be changed. The air in schools often is abominable. The medical health officer of Toronto reported adversely on the sanitary condition of Toronto schools, but apparently nothing has been done. We must look to the medical inspector of schools to change these things and to help to introduce a higher moral tone on all matters of health, and especially on those matters about which silence may be the best rule, but not the silence of cowardice, laziness, or indifference.

The Ontario government and the Quebec government have, during the year, passed legislation dividing these provinces respectively into some ten health districts and have appointed a health officer for each district. It is hoped that this new and important organization will be helpful in all health work and certainly in promoting medical inspection of schools.
It has been found in Toronto and elsewhere that the danger of a diphtheria epidemic, leading to school closure and a serious amount of illness, has been entirely averted by the prompt action of a medical inspector of schools. In schools cases of tuberculosis have been repeatedly recognized, and as our foreign population increases we are likely to see diseases hitherto unknown in Canada. At least one case of leprosy has been found in a Canadian school this year.

It may well be doubted whether our people are at all alive yet to the enormous importance to health of the condition of the teeth. The one fact that we have not enough dentists to care properly for the teeth of our school children should make every one eager to spread the knowledge that simple cleanliness of the teeth and the thorough mastication of solid and not too soft food will keep the teeth sound. The place where this fact can be taught and insisted on is the school, for the average home does not do it. In this connexion it is interesting to record that on his seventy-third birthday, March 16th, 1912, Dr. J. A. Adams, the pioneer of dental inspection in Canada, set out on a tour of the cities of Canada to introduce dental inspection.

Among the cities in Ontario which began medical inspection of schools in 1912 are Fort William and Owen Sound. Kingston and Niagara Falls have school nurses. The staff in Toronto has been greatly increased and now consists of nineteen medical inspectors and twenty-six nurses. The number of schools under inspection is about eighty and the cost this year of medical inspection is about $40,000. About eighty thousand tooth brushes have been provided by the Board of Education in a year, either sold at five cents or given away. Some attempt is also being made to pay for treatment for the children of the poor. Thus, in Brantford, a citizen gave $100 to provide glasses for those needing them. In Toronto the Board of Control gave $100 and the Local Council of Women $150 for the same purpose.

Sudbury and other places in New Ontario are impressed with the necessity for medical inspection of schools. The Sudbury Star pointed out in February, 1912, that "the need of medical inspection comes in Sudbury, and practically in any town in New Ontario, with more force than in most communities. Children often of eleven different nationalities attend the Sudbury schools to-day."

ALBERTA. The work began in 1910 under Dr. Dunn. It has increased very much, and during the present year Dr. Macdonald has been appointed medical inspector of schools at Calgary.
MANITOBA. In Winnipeg, medical inspection of schools is well established and favourably regarded both by the health authorities and the public.

NEW BRUNSWICK. In March, 1911, a measure passed the Legislative Assembly of New Brunswick making the medical inspection of schools permissive. A request for the legislation came from Moncton and it is known that in St. John many of the citizens favour it.

NOVA SCOTIA. Legislation on this subject was passed in Nova Scotia in 1907, and since then the superintendent of education, Dr. MacKay, has been endeavouring, with some success, to stimulate the rural school sections to take advantage of the law. As is well known, Halifax has had medical inspection in the schools for some time and some rural sections outside of Halifax have already established it. The school register now in use throughout the province has the following questions on medical inspection, which must be answered by the teacher in sending in the annual report.

No. of pupils enrolled not belonging to this School Section.
No. of children in the Section from 5 to 15 years of age.
No. of those (120), who did not attend school during year.
No. under 21 years in Section who are defective (a) in hearing, or (b) in seeing, who are not in attendance at the provincial Institutions provided for the Deaf and Dumb, and the Blind, in Halifax.
No. of defectives in Section requiring to be educated in a Special School.
No. of incorrigibles in Section requiring a Special School for Truants.
How often has the school been inspected medically or dentally during the year? How many individual medical or dental inspections of pupils have been made during the year? How many cases have been recommended for medical or dental treatment?

This is certainly a great help to the movement.

QUEBEC. Montreal was the first city in Canada to establish medical inspection of schools. This was in 1906. Lachine and Three Rivers followed in 1910 and Westmount in 1911. In all these places the medical inspection of schools is under the Board of Health, and in 1911 at the annual convention of the Sanitary Services of the province of Quebec, a committee was appointed to draw up a practical plan for inspection. This committee is now preparing a report on the whole question. The medical inspection of schools in Montreal has been useful and successful.
SASKATCHEWAN. Regina and Saskatoon have both appointed school nurses within the year, and it is thought that the interest already aroused in the matter will lead to the appointment of a medical inspector of schools.

BRITISH COLUMBIA. With its excellent Act for the medical inspection of schools, and with the prompt action of Vancouver in establishing medical inspection of schools, and especially with the organization of the system in connexion with the Provincial Board of Health, this province occupies a favourable position in this work. New Westminster and South Vancouver, as well as the city of Vancouver itself, have school nurses at work.

HELEN MACMURCHY, M.D.,
Secretary to the Committee.

The new Montreal Foundling Hospital will be commenced early in May. The hospital is to be situated on St. Urbain Street, which is not too far away from McGill University. The site has already been bought, at a cost of $40,000. It is expected that the building will cost between $60,000 and $70,000. The present hospital is not nearly large enough and the need of more accommodation has been keenly felt, particularly during the summer months, when the infant mortality is especially great. The new building will contain one hundred and twenty-five cots and nothing will be left undone to ensure its being thoroughly up-to-date and of the greatest possible usefulness. The work of the hospital is two-fold. Not only are infants given medical aid and attention, but the mothers are taught how best to look after the little ones; and, in this connexion, the training school for baby nurses is an important feature of the work.
THE TOXIC EFFECTS OF GASOLINE FUMES

By J. Guy W. Johnson, M.A., M.D., F.R.C.S. (Edin.)

THIS paper is based upon forty-two cases of gasoline poisoning seen at the Dorchester Street end of the Montreal tunnel, and a few experiments performed upon mice and dogs.

The tunnel consists of a shaft about fifty-five feet deep and about twelve feet square; from the bottom of this the tunnel proper runs a distance of about six hundred and fifty feet, the height being about eight feet, and the width about twelve feet. The ventilating apparatus consisted of a zinc pipe eight inches in diameter carrying air forced in by a fan; also compressed air to run the drills. This latter supplied by far the greater amount of air; and by releasing the air up against the face of the tunnel it forced the gases back to the shaft.

The source of the gasoline fumes was a gasoline motor engine, which was used to draw the cars of rock from the face of the tunnel to the bottom of the shaft. As long as the engine was not running the ventilating apparatus was sufficient to keep the air in the tunnel quite fresh, except for a few minutes after blasting; but within one hour after starting the engine the air would become foul, causing a throbbing and congestion of the vessels of the head and, if continued, headache.

On November 22nd two men were overcome by fumes and carried out of the tunnel. They had been mucking, and suddenly collapsed and became unconscious. I saw them within twenty minutes and they were then beginning to come to. The most notable feature of the cases was the extreme flushing of the face. The pulse was about one hundred to one hundred and eight, of good volume and tension. Respiration was rapid, about thirty-six, and deep. The knee jerk, plantar, and cremasteric reflexes were absent. The conjunctival reflex was present, as was also the pupillary reaction to light. The pupils were moderately dilated. The men were able to move their arms and legs, but not able to speak. There was also slight salivation. The men rapidly regained consciousness, and complained of very severe headache, chiefly in the frontal region. They returned to work in about an hour. There was no nausea or vomiting. Next day they felt none the worse for their experience.
On November 24th sixteen men suddenly collapsed within a few minutes of one another and without giving any warning of their condition. Those that were working with their heads low seemed to be most effected. The men were all brought to the surface as quickly as possible and I saw them within twenty minutes of the occurrence. They were in all stages of anaesthesia. Some had only muscular weakness, headache, and salivation, having recovered consciousness before I arrived. Others were struggling and shouting as in the second stage of ether anaesthesia; but not understanding anything that was said to them, nor had they any recollection afterwards of what had occurred once they had become unconscious. A few were absolutely unconscious, with perfect muscular relaxations, feeling nothing when a pin was stuck into their skin; a couple, besides being perfectly anaesthetized, had clonic spasms of arms and legs, coming on every few minutes and lasting a minute or so at a time.

The following conditions were common to them all: suffusion of their faces and hands; absence of most reflexes, except in those who had recovered consciousness; presence of conjunctival and pupillary reflexes; moderate dilatation of the pupils; pulse good, and never over one hundred and ten. Three of them not showing much improvement after one hour were sent to the hospital; but they did not stay there long. They all complained of severe headache on recovering. None had any nausea or vomiting. They did not return to work that day.

Next day, November 25th, the same gang were at work and eighteen men were overcome with the same symptoms. On both these occasions the engine driver was the most affected and took longest to recover.

Samples of blood were taken from the men and examined spectrosopically. These gave the bands for oxyhaemoglobin, and reduced perfectly with ammonium sulphide and with Stoke's solution, showing absence of carbon monoxide. The engine was then stopped and samples of air were taken from the tunnel. The report on these was that they consisted of natural air with traces of gasoline fumes and no carbon monoxide. The tunnel was then aired by pumping in compressed air for three hours, then stopping the pump for two hours to allow for collection of gases from fissures in the rock, and then another set of samples was taken. The report here was pure air. A dozen white rats were then hung in cages in the tunnel at different distances from the shaft and at varying heights from the ground. One died that night. This was the one
nearest the face of the tunnel and near the ground. The engine was then started again for a few hours, and samples of air taken once more. The report on these agreed with the first report.

On November 26th the engine was running and a man was set to watch the mice; and if they showed signs of becoming overcome, the men were to have been withdrawn from the tunnel. However, four men were overcome, whereas the mice were not. The engine was then stopped. But six mice died the following night. These were the mice farthest from the shaft. Post mortems were performed upon these, and their veins were found distended with blood and the right side of the heart very much distended. The blood was examined spectroscopically and only oxyhæmoglobin found.

The ventilating apparatus was then overhauled and repaired, and in addition a suction fan was placed at the bottom of the shaft to carry off the fumes which, being heavier than air, seemed to collect. On December 9th the engine was started again under these new conditions; but within a few hours two men were overcome, one of them to a very marked degree, his pupils being dilated, though the conjunctival and pupillary reflexes were still present. He had marked clonic spasms, and it was about two hours before he showed any signs of returning consciousness. His blood was examined spectroscopically, and showed only oxyhæmoglobin. The engine was then removed from the tunnel, since when there have been no more cases of men being overcome with these symptoms.

Experiments. I.—Four rats were used. These were placed in separate bell-jars and a small amount of gasoline was introduced. The following symptoms were noted: First, reddening of noses and gums; secondly, salivation; thirdly, restlessness; and fourthly, muscular relaxation and anaesthesia, coming on in one and a half to two minutes. The conjunctival reflexes were still present. Then came a stage when they had clonic spasms with perfect relaxation between the spasms. The rats were then removed from the gasoline fumes, and recovered in about thirty minutes; but three died without visible cause next day. Post mortem: their livers seemed to be very friable.

II.—Two dogs, small fox terriers. The dogs were put into a very large glass jar, and an ounce of gasoline was introduced into the jar, and the cover put on. The following symptoms were noted in order: reddening of nose, gums, and feet; salivation; restlessness and probable formication, as both dogs at this stage tried to bite their limbs furiously; muscular weakness; sudden gasping, with
perfect relaxation and anaesthesia. The dogs were then removed from the jar and the anaesthesia continued with a cone, as with ether. The anaesthesia was perfect. The conjunctival and pupillary reflexes were present, and sensation absent. The pupils were moderately dilated. The pulse was one hundred and twenty-nine, of good volume and tension; it was one hundred and twenty before anaesthesia started. Respiration was deep and rapid, twenty-six to the minute. Then clonic spasms appeared; and after fifteen minutes anaesthesia, without any warning, the respiration and heart ceased simultaneously; nor could they be made to return by any means.

A post mortem was immediately performed and the following conditions found: the heart had stopped in diastole and the right side was very much dilated. The veins all over the body were markedly distended, including the veins of the brain. There was marked venous congestion of the posterior parts of the lungs, and marked congestion of the liver, which in one dog was very friable. There was no mucus in the trachea.

From these experiments it will be seen that the symptoms in the animals were very similar to those in the men. The following are to be specially noted: the persistence of the conjunctival reflex, which never disappears; the marked venous congestion; the good pulse, which is not very rapid. After the stage of muscular relaxation appears there is a stage of clonic spasms; this I believe to be a danger sign. Absence of vomiting afterwards, and the severe headache following, are to be noted.

Box reports two cases of petrol poisoning. He notes that in one the face was flushed and cyanosed, and that in the other the face was pale. Both had muscular weakness with shivering and spasms, but no vomiting. He notes that the pulse was rather small and fast, in this differing from my cases. They both recovered rapidly when brought into the air. Houghton reports the case of a woman who was washing her hair with petrol in a small bathroom. She was overcome in three minutes. She was pale, the conjunctivæ suffused, pupils dilated; the pulse was thready (ninety), and felt as if shot were propelled beneath the finger. She was also delirious. It was four days before she felt well.

Petrie reports a case of a chauffeur who, while working over a tank of petrol, was overcome and fell into the tank, where he remained for ten minutes exposed to the fumes. His face and hands were blue and he was foaming at the mouth, pulseless, and with eyes open and turned upward. A short time after he was removed
from the fumes he began to fight with his hands and feet, and his pulse gradually returned. He retched, but did not vomit. Later he became violent and tried to bite everybody. Then he complained of headache; but was perfectly well next day.

Dr. Fraser Gurd, in a personal communication, described a case in which he performed a post mortem upon a man who was found dead in a large tank that he had been cleaning with gasoline. Nothing was found but venous congestion.

Sollman\(^4\) in his text-book says that in frogs gasoline causes purely paralytic symptoms. In mammals, when it is largely diluted (one to eight of alcohol), the anaesthesia may be kept up as long as two hours without noticeable bad effects. If carefully handled it produces no changes in blood pressure, pulse, or respiration. It is, however, rather unsafe, even in this concentration, since it produces its toxic effects very suddenly. The toxic effects from concentrated gasoline vapour consist primarily in very characteristic convulsions. These are best seen when gasoline is given in strong form without any other anaesthetic. The animal falls on its side, claws the air with all fours as if running, the pupils are widely dilated, the reflexes absent; spasms are intermittent and between them the dog is perfectly limp, except that his toes, tail, and eyelids continue to twitch. The respiration is first stimulated and then weakened. There is paralysis of the vagus, and then depression of the cardiac muscle and later of the vasomotor centre. Either the heart or respiration may stop first.

The following conclusions may be drawn:

Gasoline fumes are dangerous, and the final outcome is very sudden.

Gasoline engines are dangerous in tunnels where the ventilation is not extremely good, and should never be used in tunnels that are entered by means of a shaft.

References:


Several appointments have been made under the regulations for the new Research Scholarships in the medical department of the University of Toronto. Dr. C. Imrie is Junior Research Fellow; and Dr. Fletcher, Dr. McPhedran, and Dr. R. D. Armour are Senior Research Fellows. Dr. A. H. Caulfeild has also been appointed and will continue his work in tuberculosis, which was so unfortunately interrupted in Gravenhurst last spring.
THE OTTAWA EPIDEMICS

THE recent serious epidemics of typhoid fever in Ottawa, the second occurring within eighteen months of the first, were not merely a disgrace to that city, but a menace to the community at large. For such a calamity, in these days perfectly preventable, there can be no excuse. The conditions rendering these outbreaks possible in the capital of a country, of whose progress, in matters of less importance than the health of its citizens, we are so proud, are still under investigation. Meanwhile, the Committee on Public Health of the Commission of Conservation has issued a brief and vigorous report dealing with the broader aspects of such epidemics, pointing out their dangers to other communities than those directly visited, and constituting a powerful plea for the establishment of an efficient Federal Department of Health, which should have powers of control over local sanitation, water supply, and drainage systems.

The writer of the report is Professor Camac, of Columbia University, a man well qualified by training and experience to pass judgement. After describing the ways in which typhoid is transmitted by individuals, and accounting for the sporadic cases which appear from time to time in every large community, and which usually are imported from without, or else are due to the direct transmission of the bacillus from the sick to the well, being in the latter case chargeable to the negligence of the physician or attendants, the author proceeds to comment upon typhoid epidemics in general and the Ottawa visitations in particular. It will bear extensive quoting. "It is hardly necessary to mention the less common causes of such an epidemic or to describe its features. The two out-
breaks through which Ottawa has passed were caused by the commonest and best understood of all the causes of the disease—namely, the contamination of drinking water by sewage. In other words, that which is scrupulously avoided in the care of the typhoid case, was, by the contamination of the Ottawa water supply, brought about in the grossest possible way. While nurses were disinfecting discharges and sterilizing the utensils of those known to have typhoid, thousands of other persons, harbouring the germ in one or other of the ways referred to [typhoid carriers, walking cases, etc.] were transmitting organisms through the foul water directly into the alimentary tract of innocent victims."

The prevention of such a state of affairs is simple and comparatively easy. For years there has been no room for uncertainty. Give every city pure water and proper drainage, and typhoid becomes a rarity. "The typhoid epidemic today is an unpardonable crime against the world. It is scientifically punishable under the sixth commandment. By scientifically is meant that science has proven that typhoid epidemics are preventable by well known and thoroughly tested methods, which, if not adopted, render the authorities guilty of murder. The command to adopt such measures should be coupled with the charge, 'Thou shalt not kill.'"

The civic authorities of Ottawa have not yet put their house in order. The plans for a filtration plant that would render the recurrence of their epidemics impossible, have, apparently, not yet been finally decided upon. This might seem incredible, but it is the history of nearly every city on this continent. Possibly there is not one that could cast the first stone at her. Refusing to listen to reason, they have all dallied and procrastinated until compelled by bitter experience. The graveyards of all are filled with the victims of municipal ignorance or political corruption.

This is by no means a merely local, civic problem. It is a matter for widespread concern. Such epidemics, by spreading infection broadcast, are a national and international
menace. "That the Ottawa authorities did not realize the far-reaching power of their epidemics, is shown by the fact that they permitted their plan for the annual exhibition, held at Ottawa, to be carried out, drawing thousands to that city, at a time when new cases of typhoid were still being reported." Further comment were superfluous.

The only adequate remedy is the creation of a strong Federal Department of Health, having in its service highly trained—and well paid—experts, unencumbered by petty political influences and local prejudices, and having control over matters of drainage and water supply. After all, the pollution of our rivers is logically the concern of the federal authorities, and the defence of the country is no more important than the health of its citizens. "Why," asks Dr. Camac, "should an army and a navy be maintained against possible destruction to empire or commerce while a national menace to life is met by partially prepared or ignorant local authorities? . . . Our present system is analogous to despatching a body of city police to meet an invading army." Modern sanitary science is a highly specialized branch of medicine and of engineering. It is not necessary, nor at all possible, that every local health officer should hold the Diploma of Public Health. But what is necessary and imperative is that there should be a body of experts, whose services should be available over the entire country, and, moreover, whose services and recommendations could be imposed, if need be, upon an unwilling community. They might begin at home; but there are many Augean stables in the country, other than those at the government's doors.

The recent reorganization of the Health Boards of Ontario and Quebec was a step in the right direction. Indeed, it was only the intervention of the provincial officers during the crisis in Ottawa last autumn, that brought any order out of the chaos. But something more is needed; and it is gratifying to read that the leaders of the government, appreciating the necessity, have expressed their approval of the scheme, and
that active work is being done in the planning of a special Department of Health in the Dominion government.

THE PROGRESS OF THE ASSOCIATION

In this number appears a list of the members of the Canadian Medical Association. Members who may observe any omission or errors in the list are requested to communicate with the secretary-treasurer. It includes the names of thirteen hundred and sixty-six physicians, of whom thirteen hundred and twenty-seven are practising in Canada, the remaining thirty-nine being resident in the United States or abroad. The total number of physicians in Canada, according to the recent edition of the American Medical Directory, is seven thousand two hundred and eighty-seven. Consequently the Association comprises in its membership between eighteen and nineteen per cent. of the physicians of the entire country, or, approximately, one in every five.

This is a satisfactory proportion for the Association to have obtained so soon after its reorganization upon a permanent, national basis, and with the Journal just entering upon its third year. It is, however, only a beginning, and the time should not be far off when the Association will be able to claim that only one in every five of the physicians of Canada is not a member.

During the year the membership has increased over two hundred, and the work of organization has so far advanced that all but one of the provincial associations have now been brought into affiliation. Much still remains to be done in the way of organizing local and county societies, before the object which the Association has in view will be attained.

For the annual meeting, which is to be held in London in June next, active preparations have already been begun. Dr. N. H. Beal has been appointed local secretary. The meeting will be held from June 24th to 27th, inclusive.
THE International Congress of Physical Education is to be held in Paris from March 17th to March 20th, under the patronage of M. Fallières, president, and M. Loubet, ex-president of the French republic.

Early in each year it becomes the duty of the treasurer to send out sight drafts to the members for the collection of fees. This method was adopted as being the surest, quickest, and most convenient, not only for the treasurer, but for the members themselves. There are always, however, some who object to being presented with such a draft, and consequently the secretary-treasurer keeps a list of all members who thus object, and to them bills are sent in the ordinary way.

The medical profession of London held a large and representative meeting at the Board of Trade Rooms on January 14th, and organized for the purpose of making arrangements for the meeting of the Canadian Medical Association, which will be held in that city on the 24th, 25th, 26th, and 27th of June. It is intended to make this a notable meeting of the Association, and the medical men of London are relying on the cooperation of the entire profession in Canada in attaining that object. Dr. McCallum, the president, and the profession in London, realize that a Dominion meeting, to be a success, entails a vast amount of work, and have made an early start. Dr. Moorhouse, who presided at the last meeting of the Association in London ten years ago, was made chairman of committees, and Dr. Norman Beal was appointed local secretary. No effort will be spared to make the meeting a success.

A committee was appointed in 1908 by the Swedish Medical Society to report on the question of alcoholism in its relation to society. The report—a voluminous one which occupies three hundred and ninety pages—has now been published. The question of heredity, the relation of alcohol to poverty, crime, and disease, and the state control of alcoho-
lic beverages are discussed. The committee is in favour of restrictive measures confined to the abuse of alcohol rather than total prohibition, and has outlined a scheme whereby private interests in the sale of alcohol will be eliminated and its sale for consumption at home restricted. It is recommended also that stringent measures be taken against the drunkard, and that central and local authorities be established to regulate the trade in alcohol.

In a recent issue of the *South African Medical Record*, a picture is drawn of the present state of sanitation in Natal, which is far from pleasing. In 1911, it was decided that the Public Health Acts should be reënacted each year. Consequently, on January 1st, 1912, the Board of Health ceased to exist, the appointment of medical officers lapsed, and so far as sanitary matters were concerned the country was left without supervision or control of any kind. This condition has continued during the twelve months since elapsed and the dangers arising from insanitary conditions are spreading broadcast over the land, the coal mines and the coastal estates, where hundreds of natives and Indian labourers are employed, perhaps constituting the greatest menace. The labour of the old Natal government is going for naught, and "the result of years of experience and effort is being allowed to tumble to pieces owing to the dilatory tactics of the government in connexion with their public health policy." May some more efficient policy quickly be evolved!

An interesting question has arisen through the publication, in a recent issue of a popular magazine, of an article on the Schaefer phylacogens. The article is a laudatory one and is intended to make known to the public the benefits to be derived from the use of Dr. Schaefer's phylacogens. The point of discussion, however, is an ethical one. Should a popular magazine encroach upon the medical world to the extent of publishing an article—be it non-scientific or other-
wise—upon a medical preparation which is as yet in its infancy, in that the research work upon its therapeutic value is still more or less in the experimental stage; and what would be the probable result of such action? Messrs. Parke, Davis and Company protested against the publication, claiming that the result would be detrimental and would tend to prejudice physicians against the treatment. They contended that the publication of matter dealing with any medical preparation in a popular magazine at once opened the door to the suspicion that the remedy was being exploited for advertising purposes among the laity; and that the only legitimate means of expression on any such subject was through the medium of some medical journal. There is something to be said for this line of argument, but readers go too far when they assume that everything that appears in a newspaper or magazine is necessarily false or prejudicial to a new discovery.

From the December number of the *Western Canada Medical Journal* it would appear that the establishment of the "Dominion Medical Council" is devoid of all benefit to the medical men of the west, and, it is hinted, even fraught with danger to their interests. We are told that "any one desiring license from the Dominion Council must first obtain a license from the provincial; thus necessitating two examinations—except in the case of Manitoban graduates, whose degree is a qualification for license—and two fees." The object of the whole movement—first the "Roddick Bill," then the "Canada Medical Act of 1902," and now the "Dominion Medical Council"—is to establish a Dominion register and to make it possible for any one who has been enregistered therein to practise in any and every province in Canada. We are further informed that "As to Manitoba, it is questionable whether the delegates are properly elected as prescribed by the Act." The Act requires that two members be appointed from each province; and one member from each university or incorporated medical school having an arrangement with a university for the conferring of degrees on its graduates,
engaged in the active teaching of medicine, who shall be elected by the university or by such college or school. The two members elected from the province of Manitoba are Dr. J. S. Gray, Winnipeg, and Dr. R. S. Thornton, Deloraine; and Dr. J. R. Jones represents the University of Manitoba. The first meeting of the Dominion Medical Council took place in Ottawa, November 7th, and an account of this meeting was published in the December issue of the Canadian Medical Association Journal. The matter was referred to in the January issue of this journal and further information may be obtained by reference to that issue.

As an illustration of the widespread interest in the subject of tuberculosis, we think it proper to mention a contribution which has been offered for publication by Mr. D. Kogut, a working tailor in Montreal, quite apart from the value of his suggestion. Mr. Kogut’s theory, based, as he says, upon common sense and not upon extensive investigation, is that “the food we eat contains tuberculosis and by a clean nourish-ment we can avoid it.” From observations which he made at a tuberculosis exhibition “where good lectures were mostly given by professors in medicine,” he concludes that “all starches and all calcined minerals are elements of bacteria, and so we need to have clean food without minerals.” He notes that amongst animals “none of them have a mineral diet, and wonderful to relate we know of fish running away from salted water.” The bacilli of tuberculosis, he points out, “are stained red on a blue ground, and blue on brown ground, so perhaps it is the white mineral salt which shines white.” He explains the presence of tuberculosis in cattle on the ground that “the farmer gives salt to cows and the milk gets these microbes.” The prophylactic measures which he advises are the avoidance of salt and diseased meat, and the use of “clean foods, such as bread, clean butter, and eggs.” The interest in Mr. Kogut’s contribution lies less in his theory than in the fact that he, and many others in a like situation, reflect upon the matter at all.
Book Reviews

Diseases of the Mouth, for Physicians, Dentists, Medical and Dental Students. By Professor Dr. F. Zinsser. Translated and edited by John Bethune Stein, M.D. With fifty-two coloured and twenty-one black and white illustrations; price, $7.00 net. New York: Rebman Company, 1912.

There is a distinction about all the books of the Rebman Company in subject, letterpress, and illustrations. The present volume is at once an atlas and a text-book, and the aid it gives in diagnosis and study is unmistakeable. The illustrations number seventy-three, on forty-six plates, each one of which occupies a page eight by ten and a half inches. The descriptions of the illustrations are singularly clear. The text is given on the high authority of Professor Zinsser, and every sentence is estimated with due deliberation. The book is a valuable addition to the equipment for dealing with diseases of the mouth, and will necessarily find a place in every library which aims to be complete. One could wish that the translator had added a note to explain what these “moulages” are to which he refers so frequently, three times on one page. They are probably models, and the word itself taken from the jargon of the studio.


The best product of the Philadelphia practice of gynæcology is embodied in this text-book. It is of extraordinary compass and all procedures which have been found useful are described. The illustrations are, as we think, unnecessarily copious and number ten hundred and fifty, all of which were drawn for this work and
betoken great liberality on the part of the publishers. The first edition was published in 1905, and in the succeeding ones the practice has been retained of giving directions so explicit that they may be intelligently followed. Little is left for the imagination or common sense of the practitioner, and the success of the book would seem to justify this plan. In each instance the author has described that method which appeared to him to be the best, and then he has added such variations as may be required in the management of atypical cases. Within the past two years much progress has been made in this department and a complete record of it will be found in this revision. To mention the additional matter in this edition would be really to write the progress of gynaecology since the last one appeared. We would call especial attention to the very full discussion of the influence of a "hormone," or internal secretion of the ductless glands in diseases peculiar to women. The advent of the "hormone" theory has made it necessary to revise thoroughly the chapter on the ætiology and treatment of many disorders. The book is entirely creditable to American medicine and American publication.


For more than fifteen years the present reviewer has watched this book grow through successive editions from the first to the seventh. It has increased from three hundred and fifty-nine pages to eight hundred and seventy-eight pages, and this increase may well be taken as an index of the progress of this branch of medicine during those years. It was always a scholarly book, and is so yet, with ample references and a masterly consideration of opposing theories. The work has arisen out of the laboratory, and principles are considered in the light of facts. The arrangement is orderly and the balance well preserved. On at least six occasions the present reviewer has mentioned this book with praise, and now, for the seventh time, the commendation is none the less sincere.
“McFarland's Pathology” is firmly established in the minds of students as a standard.


It is easy to believe that in a book which contains over a thousand pages dealing with so limited a portion of medicine not much has been left unsaid. The book is no experiment, as it is the second edition which has appeared. The three subjects which are newly dealt with are, infection by the colon bacillus; diseases of the pancreas, and duodenal ulcer. For the illustrations the photographic method has been largely employed, and of these there are nearly four hundred, many of which are in colours. The subject of treatment comes in for full consideration. The work may well be described as a monumental one. It is published in the excellent form with which the Saunders Company has made us familiar.

**Pharmacology and Therapeutics for Students and Practitioners of Medicine.** By Horatio C. Wood, Jr., M.D. The J. B. Lippincott Company, Philadelphia, 1912.

Dr. Wood has given us a book which in many ways will be of use to both students and practitioners. For many reasons it would be of advantage to have a modern up-to-date text-book of pharmacology and therapeutics combined, but, as the author himself says, the science of pharmacology to-day is not what it was a few years ago. It has grown rapidly in importance, both to the student and the practitioner, and it will seem impossible to do justice to the subject in the confines of a short four hundred page book and at the same time to deal with the important subject of therapeutics. In the difficult task of classifying drugs with reference to both their pharmacological action and clinical uses, Dr. Wood has succeeded well.
**Books Received**

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


**Life of Sir William Tennant Gairdner, K.C.B., M.D., LL.D., F.R.S., Regius Professor of Practice of Medicine in the University of Glasgow.** By George Alexander Gibson, M.D., Glasgow. Price, 10s. 6d. James Maclehose & Sons, 1912.


Men and Books

By Sir William Osler, M.D., F.R.S.

XVII. The Young Laennec. The story of Laennec, discoverer of auscultation, and founder of modern clinical medicine, has been told and retold, but not all told. We know of the struggle, the great achievement, and the early death, but much remained jealously guarded by the family—"a very precious mine containing all kinds of treasures, but principally letters—numberless letters, from Laennec, from his father, from his grandfather, from his uncle—then college exercises; verses and humorous works; political and religious pamphlets; inedited notes on different subjects, medical and miscellaneous; prize-lists, diplomas, all sorts of official papers, genealogical documents, and even souvenirs." Some of these, so far as they relate to his life to 1806, are now laid before us in a charming brochure by Professor Alfred Rouxeau, of Nantes ("Laennec avant 1806," Paris, Baillière & Fils).

Born in 1781, at Quimper, of strong Breton stock on both sides, neither the father nor the mother of Théophile appear to have shown any special ability; the former, indeed, had careless talents, but no persistency, while the mother died before the boy had reached his sixth year. The outlook would have been dark for her motherless children, had not the uncle William, a professor in the medical faculty at Nantes, and at the time rector of the university, offered them a home, and an ideal one it proved to be for the young Théophile.

Guillaume-François Laennec, a cultured, highly trained physician "with a volcanic head, but a warm heart," quickly saw that his nephew was a boy of more than ordinary parts, and gave him the best training Nantes could afford. Keen at his books, but keen also at all games, the young student made rapid progress, and his studies were continued even during the horrors of the civil war. The ghastly guillotine was erected under the very windows of their house, to the basement and back rooms of which they had to flee to escape the shrieks of the victims and the noise of their falling heads! The uncle himself was a suspect, but doctors' heads had a value even in those terrible days. It is an extraordinary fact that the college (school) did not close, and the studies of "le jeune
citoyen Laennec," and of his brothers were not interrupted, but they had to participate in the famous Fête of the Supreme Being. Laennec became interested in Natural History, and made long excursions into the country to collect insects, plants, and birds. In 1795, at the early age of fourteen years and seven months, he began the study of medicine and was officially attached to one of the military hospitals as "surgeon of the third class," a position corresponding to that of surgical dresser. The civil war had necessitated the creation of new military hospitals, and the work of the medical school at the Hôtel Dieu (now the Temple of Humanity) had been interrupted, but dissections were continued at the Hôtel Dieu in a room beneath and communicating with one of the wards. Physics and chemistry were taught at the "École centrale."

The devoted uncle watched with pride the growing talents of the young student, though at times distressed by his irrepressible tendency to compose verses and to spend long hours in his natural history studies. In the letters to his father and stepmother a delightful picture is given of the inner life of the lad at this period, with its hopes and disappointments. Money was scarce, the times were perilous; it was difficult to get the necessaries of life, and such luxuries as dancing and flute playing did not appeal to the hard-pressed uncle. The young Laennec found it hard to get anything from his ne'er-do-well father, to whom, after an absence of nine years, he paid a visit at Quimper (1797). The stepmother wished him to take up some business, and it was only a strong appeal on the part of Dr. Laennec that frustrated her designs: "For God's sake let him come back to me as I sent him to you, good, gentle and studious; let him pursue in peace a course of study which is good for his health, sufficient for his fortune and honourable for his reputation,"—and he had his way. The lad walked to and from Quimper to Nantes in four and a half days at the rate of about forty-one kilometres a day. There are sad letters telling of many trials and worries, lack of proper clothing, no money for books, or for his fees, and the uncle too hard-up to do anything, and the father too careless to answer letters. After following for five years the courses at the Hôtel Dieu and the work at the military hospital, Laennec passed the examination for the grade of "Officier de santé."

In 1800 a widespread insurrection occurred in the west, and for a time he served with the regular army in the field. Then followed a period of great anxiety and depression. The desire of his life had been to finish at Paris, but there were no funds, and a sixth year of hope deferred had to be spent at Nantes. At last the
fledgling took flight, and in 1801, with a light heart and light pocket, with only eight hundred francs, the young Théophile set out to conquer Paris. In those terrible days Nantes had been a hard school, but he had laid a good foundation in practical work, he had picked up a fair education, and above all he had developed an intense love for his work. He had given play to a poetic temperament and Professor Rouxseau gives a number of small poems, some of which indicate that a certain "Nisa" had stirred his Breton heart. With a group of old Nantes students and friends he was soon at home in Paris, and at once attached himself to the Charité Hospital, where Corvisart had already revolutionized the teaching of medicine. To-day Paris still follows this great master's method—the morning ward visit, and afterwards the amphitheatre lecture. We get a good idea of the state of medicine in Paris at this time from Joseph Frank's "Reise nach Paris und London" (Wien, 1805). Lectures on the doctrines of Hippocrates were still given three times a week, and one morning at the Hôtel Dieu he saw thirty patients bled out of the one hundred and forty-two in the wards of Bosquillon; but Corvisart was effecting a revolution, and teaching men to observe and compare at bedside and in dead-house. Here, too, was working the man who was to influence Laennec strongly, Bayle; and for a short time he had the inestimable advantage of the instruction and example of Bichat. At the Ecole Pratique he became associated with Dupuytren, and others of his teachers were Pinet and Cabanis. A good short-hand writer, he utilized this gift to make careful notes of lectures and reports on his cases.

In the Journal de Médecine in 1802 appeared his first important communication—"Histoires d'Inflammation de Peritoine," a clinical and pathological study on an affection at that time but little known.

In 1802, largely through the influence of Bayle, he became converted, and in 1803 joined the famous religious fraternity, the Congregation. In the letters to his father and uncle we can follow the progress of his scientific work, and papers appeared on the arachnoid, on a synovial membrane, etc.

In 1803, at the concours for the prizes at the School of Medicine, Laennec had a double triumph, taking those for medicine and surgery, and both in money—a welcome addition to his ever slender purse. One can imagine the delight of the uncle at Nantes—"He is a treasure, that boy!"—who predicted a professorship in a few years.

Leaving Nantes with a good knowledge of Latin, English, and
German, Laennec worked hard at Greek, and in 1804 wrote his doctor's thesis on the doctrine of Hippocrates. A partially written "Traité sur l'Anatomie Pathologique" of that period remained in manuscript until edited by Cornil in 1884. Working at clinical medicine and pathological anatomy, writing for the journals, an active participant in the medical societies, the young Breton of twenty-five had made a strong impression on his contemporaries; but life was still a struggle. He had begun to practice, and—have courage young men!—had only taken one hundred and fifty francs in his first year and four hundred in the second. But he had much capital in his brain-pan, and how the promise of his youth was fulfilled Professor Rouxel has reserved for another volume.

XVIII. Medieval Medicine. A book has recently appeared, which gives a good picture of the state of medicine in the fourteenth century—"John of Gaddesden and the Rosa Medicæ" (Oxford Press). Dr. Cholmeley has here sketched the life and work of the earliest teacher of medicine in England. Gaddesden entered Merton College about 1294, and after finishing the course of Arts, studied medicine for a period of six years. "The candidate had to have 'read' one book of the Tegni, i.e., τεγνη of Galen, or one book of the Aphorisms of Hippocrates, 'pro majori parte.' These were to serve as far as 'theory went.' As regarded practical medicine, the candidate must have read one book of the 'Regimentum Auctorum' of Hippocrates, or the 'Liber Febrium' of Isaac, or the 'Antidotarum' of Nicolaus (Præpositus, of Salerno). A candidate must also have responded to the Masters Regent in the faculty for two years." So far as we know neither dissection nor hospital work was demanded.

John of Gaddesden taught in the university, and in the seventh year of his "lecture" wrote the treatise known as "Rosa Medicæ," or, as it is more often called, "Rosa Anglica." After a far-fetched comparison of the five parts of his book with the five appendages of the rose, he modestly goes on to say:—"And as the rose overtops all flowers, so this book overtops all treatises on the practice of medicine, and it is written for both poor and rich surgeons and physicians, so that there shall be no need for them to be always running to consult other books, for here they will find plenty about all curable disease both from the special and the general point of view." Largely a compilation from Greek, Arabian, and Jewish physicians, the chief value of this work is in the personal observations which show the author to have been a shrewd, capable
man, though not a little given to boasting and to doubtful practices. Some of the pen pictures of disease are admirable, e.g., dropsy, and the description of paracentesis for ascites might be copied into a modern manual—the hole in the skin and in the peritoneum are to be at different levels, the fluid is to be drawn off slowly, never all at once—"lest the patient die suddenly." It is curious to note the recommendation of a diet with very little salt. The "Rosa Angliceæ" is most often quoted now in connexion with the red-light treatment of small-pox, with which Gaddesden cured the king's son. It was not original, but was an old woman's remedy of the time. An appalling number of medicines were used, and he gives a selection of charms and prayers. Curiously enough he is silent on astrological matters. Avicenna and Galen are the most frequently quoted authors.

Dr. Cholmeley has added chapters on the mediæval physician and on the study of medicine at Oxford in the fourteenth century, and has given a translation of the "Isagoge" of Joannitus, an Arabian physician of the ninth century, which formed an introduction to Galen's "Ars parva," one of the most popular of the textbooks in the Middle Ages.

It is very difficult for us to appreciate, still more so to understand, the mediæval mind. To those interested, let me recommend Henry Osborn Taylor's "Mediæval Mind" (Macmillan and Company). The author, "a scholar, and a ripe and good one," has a warm sympathy and a keen art, which enable him to paint for us a vivid and intelligent picture of the period.

Among the contributions already made to the King Edward Memorial Fund for Consumptives, is one from Mr. John Lumsden, of Ottawa. Mr. Lumsden has given the Bellevue Hotel, which is beautifully situated at the foot of Lake Temiskaming and worth $55,000. The hotel has been used as a summer resort and is on the Canadian Pacific Railway, at no great distance from Haileybury. It contains forty rooms and a large dance hall, which could easily be converted into wards. If a hospital is established here, it will be of particular benefit to the miners in the neighbouring districts, among whom there has been a good deal of phthisis.
Retrospect of Medicine

1. A Study of the Endocardial Lesions of Subacute Bacterial Endocarditis, with Particular Reference to Healing or Healed Lesions; with Clinical Notes. E. Libman, American Journal of the Medical Sciences, September, 1912.

2. Glomerular Lesions of Subacute Bacterial Endocarditis. G. Baehr, ibid.


The clinical entity under discussion, subacute endocarditis, is characterized by an insidious onset, a long course, with, for the most part, a low and continued fever, and usually a fatal termination. Clinically it differs distinctly from the severely septic condition produced by endocarditis due to the ordinary virulent pyogenic organisms, viz., streptococcus pyogenes aureus, pneumococcus, etc., in which the symptoms of sepsis are extremely severe and a fatal termination is very soon reached.

The bacteriology of these subacute cases has been somewhat obscure. Most workers in routine pathological laboratories have obtained from the blood and from the lesions cocci which morphologically and culturally resemble both the pneumococcus and the streptococcus pyogenes. Schottmüller, in March, 1910, published five cases of subacute endocarditis, "endocarditis lenta," as he called it, from all of which he cultivated such an organism. "Streptococcus viridans" and "streptococcus mitior" are names which he has applied to it. Poynton and Paine have described in acute rheumatic fever, with and without endocarditis, a very similar organism which they have called "diplococcus rheumaticus."

Libman’s article deals with a series of eighty-nine cases in which the endocardial lesions of the disease are described in their various stages. Baehr’s article discusses the kidney lesions found in most of the cases in this same series. The paper by Rosenow discusses the bacteriology, the conditions, and reports the treat-
ment of a case by the use of an autogenous vaccine and autologous serum.

Libman in the last ten years has studied eighty-nine cases of the disease. In seventy-one positive blood cultures he obtained the typical organism, which he calls the "endocarditis coccus." Four cases yielded the influenza bacillus. He also studied eleven cases of what he considered to be the healed or healing stage of the same condition. These cases, though bacteria-free, presented the typical distribution of lesions described below, and most of them showed characteristic glomerular changes. As a basis of comparison he examined fifty-four cases of endocarditis caused by the streptococcus pyogenes, staphylococcus pyogenes aureus, and pneumococcus without finding in any case typical lesions.

The typical lesions in these cases are yellowish, greenish, or pinkish masses of vegetation attached to the mitral valve, one or both flaps, and usually involving the chordae tendineae and the auricular wall. The aortic lesions are not especially characteristic. In thirty-four cases studied at autopsy, the mitral valve was involved in twenty-five; the auricular walls in twenty-seven; the chordae in twenty-eight, and the aortic valve in nine. Libman notes especially that these cases show a tendency to heal. In some instances organization is well advanced in parts of the lesion, and even the deposition of lime salts may occur before the lesions are bacteria-free. Libman divides the cases into three groups, according to the stage in which the lesion is found: (1) bacterial, (2) bacteria-free, healing, (3) bacteria-free, healed. He points to the fact that healed lesions do not ordinarily mean clinical recovery.

As healing takes place and lime salts are deposited, calcareous emboli are often set free and may cause infarct or embolic aneurysms in the peripheral vessels. These cases in which the bacteria are found during life usually die without becoming bacteria-free. Libman supposes that cases showing typical healed lesions with typical healed glomerular lesions in the kidneys probably are the result of mild and unrecognized cases. This is borne out by the fact that the glomerular lesions are fewer in number. He calls attention to the following points in the clinical aspect of the healing and healed cases: persistance of fever (temperature lower than in the bacterial cases) with signs of endocarditis, and occasionally with joint symptoms; weakness, anaemia, sometimes diffuse brown pigmentation of the face; sternal tenderness; failure of cardiac compensation.
Libman refers to ten cases of chronic infectious endocarditis reported by Harlitz in which the lesions described resemble those which he discusses, and to five by Schottmüller; also to seven cases reported by Jochman in which the typical organization was found and two of which recovered.

Baehr begins with a short description of the characteristics of the organisms in question which are more fully discussed by Rosenow. The glomerular lesions he describes consist of a swelling and hyaline change of one or more loops of the affected glomeruli. A hyaline or granular mass is found which may consist partly of a corresponding hyaline change of the overlying capsular epithelium. This material undergoes some fibrinoid change and eventually becomes organized. The result is a wedge-shaped area of hyaline connective tissue whose base is outwards, that is, away from the base of the glomerulus. Whole glomeruli are sometimes involved. In five cases in which the Gram-Weigert stain was employed, bacterial emboli were found in the glomeruli. The typical lesions were found in all but two of the twenty-five typical cases of the disease studied at autopsy, and also in most of the cases showing typical healed endocardial lesions. They were not found in one case of influenzal and one of gonorrhœal endocarditis, nor in fifty-four cases due to infection by the ordinary pyogenic cocci.

The organism which is ordinarily found in the cases of endocarditis under discussion has been variously named: "streptococcus viridans" or "mitis" (Schottmüller); "streptococcus tennans" (Hastings), and "endocarditis coccus" (Libman).

Rosenow states that the organism resembles the pneumococcus much more than it does the streptococcus, and should be considered an avirulent strain of pneumococcus. It is a diplococcus which grows more or less in chains, and possesses a very low degree of virulence. The growth in early cultures is dry and coherent. On blood agar plates the various strains produce a varying amount of green colouration and no hemolysis. Most strains ferment inulin. The tendency to form dry coherent masses disappears on cultivation, especially anaerobic, and on animal passage, and they may grow exactly as do pneumococci that have been long under cultivation. This clumping property seems to be necessary in order that endocarditis may result. After repeated animal passage the virulence may be so increased that the animal injected dies of septicæmia or pneumonia exactly as after pneumococcus injection. This procedure has been carried out in the case of six cultures isolated from as many endocarditis cases, as well as one strain from a throat and one from an empyema.
In the case reported by Rosenow fifty-six blood cultures were made. The typical organism was obtained. Quantitative estimates made by plating 15 c.c. of blood from the ear were controlled by duplicate and triplicate plates, and occasionally by plating from an arm vein. The relations between the temperature, the bacterial count, the phagocytic power of the patient's corpuscles, and the lysis of bacteria by the patient's blood, were studied. Eight doses of an autogenous vaccine were given, and it was noted that the phagocytic power of the leucocytes is no index of the amount of destruction of the bacteria, and also that the degree of intoxication depends on the number of bacteria destroyed. After smaller doses (twenty-five and fifty millions) of the vaccine there occurred an increased destruction of bacteria, and a decrease in the number of bacteria in the blood. The larger doses were not effective nor was the application of immune rabbit serum. Rosenow advises tonsillectomy in these cases, as similar organisms are found in the tonsil, which is probably the portal of entry.

A paper published by Thalmann in the September number of the Centralblatt fur Bacteriologie describes two cases of septicemia caused by the same organism, without any endocardial lesions.

**Summary**

Subacute and chronic infectious endocarditis is usually caused by an avirulent pneumococcus which has been variously named.

The endocardial lesions are usually characteristic, involve especially the mitral valve, auricular wall, and chordae tendineae, show a tendency to healing, and may go on to a healed (organized), bacteria-free condition.

Typical glomerular lesions occur, and are apparently produced by emboli consisting of the non-virulent organisms.

The portal of entry is probably the tonsil.

Autogenous vaccines in small doses apparently are of some benefit.

A. M. Burgess.

**Amendments** have recently been made to the Montreal City Charter, which give power to the health department to inspect tenement houses and refuges at night. By measures such as these it is hoped to prevent a good deal of the overcrowding which is so frequent, and thus do away with its attendant ills.
Obituary

Dr. J. G. Calder, of Medicine Hat, died early in December while travelling with his family to California. Dr. Calder was a prominent surgeon in the west and had been a resident of Medicine Hat for over twenty years.

Dr. H. B. Ross, chief surgeon of the Jeffrey Hale Hospital, Quebec, died January 9th from pneumonia, after a few days' illness.

Dr. W. J. Wagner, of Toronto, died January 19th, in the sixty-fourth year of his age. Dr. Wagner was well known in Toronto, where he had practised since 1871.

Dr. Wolfred Nelson died January 15th, in the Hudson Street Hospital, New York, after a short illness. Dr. Nelson was the grandson of Dr. Wolfred Nelson known for the part he played in the Canadian Insurrection of 1837 and 1838, and the son of Dr. Horace Nelson, of Montreal, where he was born in 1851. A graduate of McGill, the first five years of his professional career were spent on the Isthmus of Panama, then came a few years of travel in Europe, and finally his return to New York where the remainder of his life was to be spent. Dr. Nelson was a prominent physician and a popular citizen, but he remained a British subject and was one of the founders of the Canadian Society in New York, of which he was at one time president.

The medical profession has lost one of its most distinguished members in the person of Professor H. Hervieux of Montreal, who died January 4th, at sea, while coming home from Europe. Dr. Hervieux, taken away too soon, was only fifty years of age, and had won for himself a well-deserved scientific reputation in Canada and abroad. A member of the Laval Faculty of Medicine and one of its most learned professors, he has taught by his life, and has proven by his example, that nothing will lead to success as well as persistent work. He was a good friend to all and had a well balanced mind. He devoted his last years to a work which he had at heart above all, the reorganization of medical teaching at Laval.
Dr. Hervieux was gifted in a remarkable way to coördinate his fellow-workers' energies and lead them towards a set purpose of utility. He was both kind and wise; and therefore beloved and respected. He was a judicious and sincere adviser. "L'Association des Médecins de langue française," which numbers over five hundred members, had elected him president of its congress for 1913. He was the representative of Laval in the College of Physicians and Surgeons of the Province of Quebec, and his loss will be greatly felt in scientific and educational quarters, where his persuasive eloquence was always devoted to the good cause.

News

ONTARIO

The number of contagious diseases reported during November last in Ontario exceeded by almost one hundred and fifty those reported in November, 1911. In consequence of the new regulations, cases of tuberculosis were more generally reported, but there are still many cases of the disease unnotified. Among the cases of a contagious nature reported were two hundred and eighty-seven of diphtheria, one hundred and forty-four of typhoid, one hundred and sixty-five of scarlet fever, and thirty-three of small-pox.

The Sir Oliver Mowat Memorial Hospital for tuberculous patients was opened by the provincial secretary, Hon. W. J. Hanna, on Wednesday, December 11th. The hospital, which is the tenth of its kind, is pleasantly situated on a plot of thirty-two acres, eight of which are under cultivation; it overlooks the lake and is easily reached. The incipient cases will be placed in cottages, while the more advanced will be isolated in the upper part of the main building. As to funds, the people of Kingston have subscribed $20,000, the province $4,000, and the city council $2,000. Among other contributions were $2,000 from the Daughters of the Empire and $800 given by Major Leonard for the Rowland's Cottage.

Hamilton is threatened with a serious epidemic of small-pox. A great many cases of the disease have already been reported and the situation is the more alarming in that there exists in Hamilton a strong prejudice against vaccination.
The list of contagious diseases reported in Orillia during the past year is not an alarming one—five cases of scarlet-fever, three of diphtheria, two of typhoid fever, one of measles, and one of varioloid.

In consequence of the necessity for additional accommodation, the board of management of the Ottawa Maternity Hospital has decided to build a fire-proof, concrete building, up-to-date in all respects and capable of accommodating from seventy-five to one hundred patients; such building to be erected in sections, from time to time, as the demands upon the hospital increase and when the necessary funds are subscribed by the public.

In a Health Bulletin, issued December 27th, Dr. Hastings makes it clear that an additional filter is needed in Toronto. The plant now in operation is only intended to filter thirty-three million gallons of water a day, whereas the water consumed by the city each day amounts to forty-five million gallons. Consequently the filters are being overtaxed and there is no reserve capacity. The inclusion of North Toronto and the rapid growth of the city make it all the more imperative that some provision should be made to secure an adequate supply of filtered water. The bacteria removed from the water by the filters during November averaged 97.5 per cent.

Another Field Ambulance unit of the Army Medical Corps is to be stationed at Ottawa. The unit will be Number 22 and will be under the command of Major R. Law. The other officers will be Major T. H. Leggett, Captain W. P. Dillon, and Captain Charles Young.

The Hopewell Hospital, which is being built on Porter's Island for the accommodation of small-pox patients from Ottawa, is almost completed.

Dr. Archibald Bruce Macallum, son of Professor A. B. Macallum, of the University of Toronto, has been awarded the Beit Memorial Fellowship for Medical Research. The fellowship is of the annual value of £250 and is usually held for three years. At present Dr. Macallum is working in Munich in Professor Frederick Von Muller's laboratory on metabolism in disease.

The advisability of extending the system of medical inspection to the high schools in Toronto is under discussion. It is not pro-
posed to institute a daily inspection, but a weekly or even monthly examination would be beneficial. The examination of pupils taking part in gymnastic exercises and athletic competitions would be undoubtedly of great advantage.

Several cases of small-pox have been reported in Toronto and in Waterloo.

An endowment of $15,000 has been promised to the Chambers Memorial Hospital at Smith's Falls by Mr. George H. Frost, of Plainfield, N.J. Mr. Frost has also promised to give a sum equivalent to any amount not exceeding $5,000, which may be subscribed for the purpose of endowment within three years from last December.

A by-law was submitted to the ratepayers of Guelph, to provide $28,000 to be expended on the General Hospital—chiefly for building purposes. The by-law was defeated, however. A special committee has been appointed by the hospital board to enquire into the financial position of the hospital and to devise some means whereby it may be placed on a more secure financial basis.

At the annual meeting of the Welland County Hospital Trust, last November, it was suggested that it would be better to build a separate hospital for tuberculosis at Fonthill than to add a ward to the hospital at Welland. The climatic conditions at Fonthill are more suitable for patients suffering from phthisis than are those at Welland and it would be cheaper to build a separate hospital; also, the government grant would be larger were a separate hospital built, and a gift of $2,000 has been promised by an Allanburg gentleman if this is done. A committee was appointed to enquire into the matter.

In his annual report, Dr. Murray, of Owen Sound, the medical officer of health, puts forth a strong plea for the establishment of a municipal abattoir.

The by-law to establish a filtration plant at Ottawa, which was submitted recently to the ratepayers, has been defeated. No solution of the water problem has been found as yet, but the matter is receiving attention.
The position of medical officer of health for Ottawa is vacant. Applications for the position were invited up to the 10th of January, and were to be addressed to the chairman of the Board of Control.

Mr. William Bausch, of Rochester, at one time a patient in the Bellevue General Hospital, has contributed $1,000 to be expended on equipment for the new operating room of the hospital. This gift is made in appreciation of the attention Mr. Bausch received during his illness.

A by-law is to be submitted to the people of Fort William to provide $15,000; the money is to be spent on improvements to the McKellar General Hospital.

Quebec

A reward of $200 is offered for the arrest of Dr. A. Judson McNeil, alias Dr. Edwin Smith. Dr. McNeil opened a private sanitarium some months ago at Franklin Centre, claiming that he was possessed of some specific cure for rheumatism. He formed a company for the manufacture of pills, which were to be an infallible cure for the disease. His claims were enhanced by the assumption of great religious fervour and many people were induced—particularly by the promise of a forty per cent. dividend—to invest their savings in this company. A few weeks ago Dr. McNeil disappeared, leaving the shareholders of his company with no knowledge of his whereabouts.

A large amount of meat, fruit, fish, and so forth was confiscated during the past year by the Montreal food inspectors. The figures are: 145,335 pounds of meat; 70,785 pounds of fish; 182,836 pounds of fruit; and 205,000 pounds of ice. Seven meat-dealers were convicted for refusal to comply with regulations, and sixty-six fruit and fish dealers for the same reason. Seven hundred and three gallons of milk, contained in 646 cars, were confiscated, and 116 dealers convicted of negligence.

There were 9,685 deaths in Montreal in 1912, and 9,974 in 1911. Allowing for the increase in population, the death rate for 1912 is considerably less than for 1911, being 19.99 in 1912 and 21.19 in 1911 for every thousand of population. The infant mortality also has decreased; but it is still much higher than it should be.
The statistics show that tuberculosis is increasing rather than diminishing. In 1911, 737 cases were reported; in 1912, 895 were reported.

An appeal for funds is made by the Montreal Maternity Hospital. This hospital is maintained altogether by private subscription and the expenses have increased tremendously as the work has widened out. The present building has been in use since 1905 and is now much too small for the demands made upon it. Nine hundred and ninety-three patients were admitted in 1912, almost two hundred more than in 1911, when eight hundred and two were admitted; and last December three times as many patients were treated as in the same month of the preceding year.

At a meeting of the provincial board of health, held December 19th, the following district medical inspectors were appointed: Dr. J. A. Sirois, Bic, to have charge of the Metapedia district; Dr. Savard, the Fraserville district; Dr. Couillard, the district of Quebec; Dr. L. Parizeau, the district of Sherbrooke; Dr. J. R. Gauthier, the district of Valleyfield; Dr. Corsin, the district of Montreal, and Dr. Savary, the district of Three Rivers. No officers have been appointed for the districts of Chicoutimi, St. Hyacinthe, and Hull.

Thirteen cases of typhoid were reported in Westmount during 1912. There were also seventy-five cases of scarlet-fever, twenty-six of diphtheria, and twenty-six of tuberculosis. The death rate is 8.05 per thousand population, one of the lowest in the Dominion.

Measles was very prevalent in Montreal during December; there was also a good deal of scarlet fever and diphtheria.

SASKATCHEWAN

Four claims have been made on the city of Saskatoon for expenses incurred through lack of hospital accommodation. The claims were made by persons who had been refused admission to either the general hospital or the hospital for contagious diseases, lack of accommodation making it impossible to receive them. On the recommendation of the executive of the board of health, these claims were all paid.

A hospital to cost $450,000 is being built at Saskatoon. It will be controlled by a board, to be elected each year by the citizens, two members to be appointed by the city council and one by public vote. The population of Saskatoon is now twenty-seven thousand. There are at present two small hospitals in the city, one a civic institution, the other an infirmary under the supervision of the Grey Nuns.

**ALBERTA**

A satisfactory report for the past year is given by the medical officer of health for Lethbridge. One point worthy of note is the decrease in the number of cases of typhoid fever, eighty cases having been reported during the year as compared with one hundred and eight in 1911. As is the case in other places, Dr. De Veber complains that contagious and infectious diseases are not always reported by the physician in charge; this is true particularly of tuberculosis and typhoid. A severe epidemic of measles occurred in June and July, but the disease quickly died out when the schools closed for the summer vacation. The maintenance building of the new hospital is completed, but the pavilions intended for patients are not yet built; this is to be done early in the spring. The water mains have been extended during the year and the sewage disposal plant completed.

The establishment of a medical library at Edmonton was discussed at a meeting of the Edmonton Medical Association on January 2nd, and a committee appointed to report on the matter.

The compulsory vaccination of school children is a question which has been much discussed in Calgary. The matter has been taken up by Dr. Mahood, the medical officer of health, and Dr. Scott, the superintendent of schools, and the result is that every child, who has not already been vaccinated, is to be vaccinated at once or leave the schools.
Several cases of typhoid fever have occurred among the workmen engaged in building the Canadian Northern Bridge between Calgary and Ogden. The water supply is suggested as the possible source of infection and samples of the water have been sent to Edmonton to be examined.

A hospital has been established at North Edmonton. It consists at present of four rooms, situated over a drug store, and it is intended for emergency cases. It is hoped that funds will be forthcoming in the near future which will make it possible to establish a more efficient hospital with at least thirty-five beds. The present establishment only contains six, and as there are a great many accidents in that part of the city, there is urgent need for more accommodation.

The Red Deer Memorial Hospital doubled its capacity during 1912, at a cost of $13,500.

Redcliff has now a population of almost a thousand and possesses many large manufacturing concerns. It is suggested by the Review that the time has come for a hospital to be built and that the large factories in the town should be asked to subscribe.

Dr. William A. Lincoln, medical superintendent of the General Hospital, Calgary, has resigned, with the object of taking post-graduate work abroad. He will leave the hospital about April 1st, next.

**BRITISH COLUMBIA**

Four hundred and seventy-four cases of infectious disease were reported in South Vancouver during the past year, sixteen of which terminated fatally. The most serious outbreak during the year was one of diphtheria.

Notice has been given by the provincial board of health that medical inspectors of schools are to be paid fifty cents for each pupil examined, and are to be allowed travelling expenses at a rate not exceeding fifty cents a mile for each annual inspection. If additional examinations are made on the written request of the board of trustees of the school in question, the inspector is to receive the same remuneration as in the case of an annual inspection.
The corner-stone of the new building of the Royal Columbian Hospital at New Westminster was laid by the Hon. H. E. Young on December 11th. The building, which is four-storeyed, will give accommodation for two hundred and two patients and will cost about $250,000, which is rather above the estimate made. The hospital was first established in 1862.

An attempt is being made by citizens of South Vancouver to have passed a by-law authorizing the establishment of a hospital there. A hospital committee was formed some time ago and a deputation waited on the Hon. H. E. Young. The deputation was promised a substantial grant subject to the approval of the rate-payers.

The new wing of the Vancouver General Hospital is now completed and a campaign has been begun to provide the funds necessary to furnish the wards. The effort has already met with success, two contributions of one thousand dollars each having been made. The hospital receipts for the month of November were $14,702.10, while the expenses amounted to $20,310.42. The deficit for the year is over $20,000.

The deficit of the Vancouver General Hospital for 1912 is more than twenty-seven thousand dollars, and the hospital authorities point out that quite one-fifth of the patients treated during the year came to them from beyond the city limits.

Canadian Literature
Original Contributions
The Canadian Practitioner and Review, December, 1912:

The Uses of White Precipitate in Diseases of the Skin . . . . . D. W. Montgomery.
Malignant Diseases of the Upper Air Passages, with Notes upon Two Cases of Epithelioma . . . . J. Price Brown.
The Local Medical Examiner and Life Insurance . . . . . . . B. G. Connolly.
The Ontario Public Health Act . . . . . . . J. W. S. McCullough.
The Public Health Journal, December, 1912:

The Sanitary Aspect of a Besieged Town  
G. Carleton Jones.  
Sewage Disposal by Oxidation Methods  
G. J. Fowler.  
The Dental Aspect of Medical Inspection of Schools  
W. H. Doherty.  
Schools as Factors in Preventing Infant Mortality  
Henry Coit.  
Saving Canadians from the Degeneracy Due to Industrialism in Cities of Older Civilization  
P. H. Bryce.  
The Carrier Question  
W. H. Hill.  
Trade Quackery in Medicine  
A. W. Wakefield.  
Diet in its Relation to Disease  
H. B. Anderson.  

Dominion Medical Monthly, January, 1913:

The Clinical Features and Treatment of Acute Perforating Gastric and Duodenal Ulcer  
Ellsworth Eliot.  
Why not hold these cases?  
G. R. Williams.  

The Canadian Journal of Medicine and Surgery, January, 1913:

Some Impressions of the Clinical Congress of Surgeons of North America  
J. Milton Cotton.  
Gynaecology at the Clinical Congress of Surgeons of North America  
F. W. Marlow.  

Le Bulletin Médical de Québec, December, 1912:

La Maladie des Caissons  
J. P. Frémont.  
Tuberculose renale  
G. Ahern.  

Le Montréal Médical, December, 1912:

L'Etiologie et le traitement de l'incontinence d'urine  
Dr. Bouquet.  

The Canada Lancet, December, 1912:

Chronic Intestinal Stasis  
W. Arbuthnot Lane.  
Acute Post-Operative Dilatation of the Stomach  
A. C. Hendrick.
The Western Canada Medical Journal, December, 1912:

The Diagnostic Significance of Gait . . . F. Brodie.

Medical Societies

THUNDER BAY MEDICAL ASSOCIATION

The annual banquet of the Thunder Bay Medical Association was held in the Prince Arthur hotel at Port Arthur, December 5th. The officers elected for the year 1913 are: president, Dr. C. C. McCullough; vice-president, Dr. R. J. Manion; secretary-treasurer, Dr. Boyd; executive, Dr. R. W. Bucke and Dr. Eakins.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The fourth meeting of the society was held, Friday evening, November 15th, 1912, Dr. D. J. Evans, president, in the chair.

Pathological Specimens. Dr. E. J. Mullally exhibited the following:

1. Trachea showing traumatic lesions, and lung showing experimental emphysema. From a male aged twenty-six, who was in the hospital for glioma of the cerebellum. An operation was performed to relieve this but respiration failed before recovery from the anaesthetic. Artificial lung insufflation was performed for ten hours. Note the damage done to the lower end of the trachea by the lower end of the tube inserted, and the extreme distension of the lung with petechial haemorrhage.

2. Chondro-sarcoma of scapula. From a male aged thirty-eight, who was admitted for a rapidly increasing swelling of the left shoulder. The arm was amputated and the tumour is seen to have destroyed the lower two-thirds of the scapula. The tumour tissue is rich in cartilage, the central part is cystic and, when fresh, contained free blood.

3. Thoracic organs in a case of tuberculosis of the pericardium and other serous membranes. From a male, aged sixty-one, who had been ailing for a long time. The clinical diagnosis was myocarditis with hydro-thorax. Autopsy showed miliary tubercles of all the serous membranes examined, and adherent pericardium.
4. Lungs and liver in a case of actinomycosis. From a youth of nineteen, who had been ill six weeks with a mass in the gall-bladder region. There was an abscess round the appendix as well as the condition shown. The liver is seen to contain some round abscesses with arborescent borders and multiple central softenings.

**Case Report.** Four unusual prostatic conditions, by Dr. W. Hutchinson. (1) Abscess; (2) Tuberculosis; (3) Calculus; (4) Stricture of internal urethral orifice following suprapubic prostatectomy.

**Paper:** The paper of the evening was read by Dr. Little on "The use of obstetrical instruments with special reference to the use of forceps."

**Discussion.** Dr. D. A. Shirres: One point in this paper particularly interested me and has done so for years, and that is the connexion of injuries at birth with the production of imbeciles, epilepsy, etc. Dr. Little mentioned that he had read in some report that imbecility and injuries to the brain occurred more commonly in long and protracted labours than with the use of forceps. At the outdoor department of our hospital, when we come across these conditions we ask the question regularly, "Was it a long labour, forceps labour, or a precipitate labour?" In my experience we have found a great deal more harm occurring to the child in precipitate labour, next the long and protracted labour, and least with forceps.

**Dr. A. G. Morphy:** I must say that in one respect I would take some exception to the concluding remarks made by Dr. Little, for this reason, that very often in the country confinements are conducted under very adverse circumstances and that, unless there is a very pressing indication for the use of forceps, I consider that in many cases it is much safer to refrain from using them. First of all, there is the lack of a proper dish in which to boil the forceps, the lack of a sufficient quantity of boiled water, the lack of sufficient basins, and all those things we are accustomed to find in plenty in either hospitals or good houses. In that respect only I would take exception. One question I would like to ask: all general practitioners know that occipito-posterior presentations are one of the bug-bears of this class of work. Now in these, after the practitioner has reduced or endeavoured to change the position around to O.A., and has only, as often happens, partially succeeded, how much reliance would Dr. Little place upon forceps to succeed in bringing about rotation to the full extent that is necessary?

**Dr. D. F. Gurd:** I have listened with a great deal of pleasure
and profit to Dr. Little's paper. I might say that in my experience I have used the forceps very often and increasingly often, for in the last sixty-five cases I find I have used them fifteen times. In the statistics found in the maternity hospital I was struck with the difference in the frequency of using the forceps in the public and private patients. I would like to have that explained. I might say that I have never used the axis-traction forceps, but have used axis-traction with my fingers and the forceps, carrying out the same idea, keeping the blades as far as possible from the arch of the pubes, and it has done very well. In speaking of the necessity for the use of forceps, a great many considerations have to be thought of besides malformations of the mother, that is, the angle being a very acute one. One other thing I have noticed lately, and that is, we have to deal with a more emotional class of people who stand the pain of labour very badly, and here I have had to use the forceps earlier and more frequently, else the disturbance would be unbearable. In one case, for example, I had a patient only in labour five hours, and I thought it wise to use the forceps as she could not control herself and distressed every one around her.

Demonstration. Notes of the stable fly, the Stomoxyys calcitrans, by Dr. H. B. Cushing: I wish to present to the society this evening some specimens of the common stable fly which has attracted a great deal of attention lately as being the probable carrier of infantile paralysis. This disease was thought for some time to have an insect carrier, because (1) it is caused by a filterable virus, and a great many similar diseases have an intermediate host, e.g., yellow fever, typhus fever, dengue, and rabies. (2) It is a strictly seasonal disease, occurring in the summer and fall months and ceasing invariably at the onset of cold weather. (3) It is not directly contagious, e.g., in schools or hospital wards. (4) Cases occur where there is no history of direct exposure. (5) Epidemics occur chiefly in small towns and villages and not in densely populated centres. The stable fly recently became suspected of being the carrier for the following reasons: 1. It is most abundant at the special seasons and in special localities where the epidemics of poliomyelitis occur. 2. Live specimens may be secured all the year round, so accounting for the exceptional cases occurring at unusual seasons. 3. Its geographical distribution,—being found over the whole of the northern hemisphere and probably all over the world. 4. It has already been proved to be a carrier of filarial disease in horses. 5. It is able to travel considerable distances and so cause sporadic cases. 6. Recent experiments on monkeys seem
to prove that it is capable of conveying the disease. Professor M. J. Rosenau, at the recent International Congress on Hygiene, at Washington, reported that he had caused the disease in six out of twelve monkeys by exposing them to infected flies. John F. Anderson and Wade H. Frostt more recently published in the Public Health Report of New York that they had caused the disease in three monkeys by exposing them to the bites of stable flies which had recently bitten monkeys suffering from poliomyelitis. The stable fly is universally abundant, especially in the vicinity of horses, it bites human beings frequently, and in fact most of the larger animals. It breeds chiefly in horse manure. It is nearly always mistaken for the house fly, which it very closely resembles, as the specimens demonstrate, but from which it may be readily distinguished by the following characteristics: it is furnished with a beak or proboscis and is able to bite; its bite is slightly painful, but causes no after inflammation as in the mosquito bite; its abdomen is wider and shorter and its wing area a little larger in proportion; the markings of the body are different; the house fly rests on a perpendicular wall with its head downwards towards the floor, while the stomoxyxs rests upon the wall with its head towards the ceiling.

Case Report: Duodenal obstruction simulating pyloric stenosis, by Dr. G. E. Armstrong and Dr. F. M. Fry. Dr. Fry read the case report.

The fifth regular meeting of the society was held Friday evening, December 6th, 1912, Dr. D. J. Evans, president, in the chair.

Pathological Specimens: Exhibited by Dr. A. M. Burgess.

1. Specimen shows brain from a young man admitted to hospital with a diagnosis of hysteria. It was finally concluded that the condition was cerebral—he had eyesight trouble and a discharge from both ears. On consultation our neurologist and otologist made a diagnosis of abscess of the brain, probably the cerebellum—he could not put his fingers together, etc. Dr. Elder operated, going in on the left side of the cerebellum, and found nothing. He then opened on the right side behind the ear and found pus; this wound was opened and drained several times, but the man kept getting gradually worse and eventually died. At autopsy the brain presented on the left side a more or less fragmented appearance with a hernia at the point of the first operation where the brain protruded through and became fragmented. On the opposite side
there was a large abscess in the right lobe of the cerebellum. The left cerebral hemisphere was covered with an acute inflammatory exudate and a large mass of purulent material escaped; between the two hemispheres was thick greenish yellow pus. The patient presented a double optic neuro-retinitis. The explanation seems to be that the abscess of the right lobe had penetrated to the meninges and crossed to the left side under the tentorium simply because the patient was always lying on his left side on account of the operation wound on the other side and that, through gravity, it must have penetrated the tentorium and caused a unilateral meningitis on the left hemisphere. Both middle ears contained pus and the roof of the tympanic cavity on the right side was necrotic and evidently had been penetrated by the pus. The lateral sinus on that side was not at all affected and there was no evidence of thrombosis.

2. Free, floating, unattached tumour. Dr. J. R. Waddell described this specimen. The man came from the Maritime Provinces complaining of a mass in his abdomen, freely movable. It had grown slowly for twenty-three years, he had practically no symptoms, although chronic constipation had been complained of for years, especially when the tumour gravitated to the left side lying over the sigmoid colon. During the daytime it was in the pelvis, at night it was easily movable. Several doctors had treated him, each giving a different diagnosis. The tumour was removed. In cutting it open a hard calcified nucleus can be seen surrounded by a softer area of tissue. Most of the wall consists of fibrous tissue arranged in concentric layers. In a search of the literature I find only one such case reported and that was by Cunningham, of Boston, four or five years ago.

3. Multiple metastases of a rapidly growing tumour. It invaded practically all the organs. The patient was a young Chinese with little or no clinical history. At autopsy tumours were found filling the liver, kidney, spleen, heart wall, bone marrow, dura, stomach, thyroid; tumours practically everywhere. The stomach showed a perforation which had given rise to a fatal peritonitis. In the sections of the liver there are not in the tumour nodules any definite necrotic areas or pitting, such as you expect in ordinary cases of carcinoma, and the slides show that carcinoma is not the diagnosis in this case. A blood count post mortem showed about fifty per cent. lymphocytes and three per cent. polymorphonuclears, the rest of the picture is made up mostly of large mononuclear cells with and without granules. The diagnosis was lymphoblastoma—malignant lymphoma.
LIVING CASE. Bullet wounds of the large and small intestines. By Dr. A. R. Pennoyer. This young lad, C. C., aged fourteen, was admitted to the General Hospital, August 22nd, 1912. While driving a milk wagon that same morning a couple of boys with a rifle attempted to shoot holes in his milk cans and on giving them chase one of the boys deliberately fired two shots at him, the second taking effect and bringing him down. He was admitted to the hospital at 10.30 a.m. with a punctured wound one inch below and one inch posterior to the anterior superior spinal ilium; he had vomited once before reaching the hospital. Anti-tetanic serum was given and an x-ray taken which failed to reveal the bullet. At this time, although very pale, there was no evidence of peritonitis. At 4 p.m. the patient was much paler, pulse rapid, beginning abdominal distension and widespread tenderness and rigidity, frequent vomiting, thoracic breathing, and all the signs of a beginning peritonitis. The abdomen was opened in the middle line and one perforation of the sigmoid and six of the small intestine were found and closed with Czerny-Lembert sutures. The only explanation of the solitary perforation of the sigmoid was that the bullet must have entered through the meso-sigmoid. The bullet was found near the branch of the mesenteric artery which was still bleeding. The patient's condition at this time was so grave that the abdomen was closed with through and through sutures and he was returned to the wards. The convalescence was smooth and complete. In my experience these cases are particularly fatal, and for this reason I have felt justified in bringing this one before you.

DEMONSTRATION of an artificial pneumothorax apparatus, by Dr. E. W. Archibald.

PAPER. The paper of the evening was read by Dr. E. M. von Eberts and Dr. W. H. P. Hill on “Free transplantation of fascia—experimental results—clinical application.”

DISCUSSION. Dr. E. W. Archibald: I think the Society has reason to congratulate Dr. von Eberts upon this very interesting piece of work, which opens up a comparatively new field. It is proved beyond a doubt that one can transplant fascia and expect it to heal in without trouble. I have followed this line of work in the literature and in the laboratory; and also in two clinical cases I have used the fascia transplantation for a particular purpose with success. I refer to the closure of the pylorus in cases of gastro-enterostomy. I believe very strongly that the pylorus, if patent, when one does a gastro-enterostomy, should be closed, and this is
usually accomplished by the inturning with rows of Lembert stitches of the pyloric or pre-pyloric region. When one examines closely the late results of such a procedure, as we do in the laboratory, one finds frequently a dilatation of the pyloric opening and one can readily see that any such procedure is apt to be insufficient. Consequently I adopted from a German source the idea of taking a piece of the anterior sheath of the rectus and tying it like a string around the pre-pyloric region, thus closing the pylorus. In two or three dogs it has succeeded perfectly, and in two human cases also, as far as one can tell, even though in one case it was complicated by some infection. I would suggest that this is another line in which free fascia transplantation might be used. The microscopical examination of the pyloric region in one of the dogs later on showed a narrow cicatricial scar which had become incorporated with the serous covering of the stomach. Concerning the covering or repairing of peritoneal defects, Dr. von Eberts’ results show that adhesions are extremely apt to occur. It appears to me that this corresponds very well with my laboratory experience of a few years ago, when in carrying out a research on the prevention of peritoneal adhesions I used Cargyle membrane, which is the tanned peritoneum of the ox. These tests were uniformly unsuccessful, and that would lead me to expect a lack of success in transplanting free fascia into peritoneal defects. The fate of transplanted fascia in all other places is that it becomes incorporated with neighbouring structures; this is its value and it is one of the reasons why we transplant it. Consequently it is difficult to expect that for a peritoneal defect of any size the fascial graft can remain free of adhesions. In my experiments a mixture of gelatin with formalin gave the best results. In conclusion I think the society’s thanks and felicitations are due Dr. von Eberts for bringing before it so timely and so excellent a piece of work.

Dr. von Eberts: I think one gets much better results where the bandages are removed early. If there is proper implantation, the use of the limb will not cause rupture of the union and will certainly prevent that atrophy which follows fixation and very materially lengthens the period of disability or loss of function. The use of fascial transplants in the reinforcement of injured vessels and in the protection of nerves that might be exposed to pressure or injury has been suggested, and experimentally fascia has been used successfully in this way. It has also been used as a suture material in the place of wire in the fixation of fractures.

Case Reports: Illustrated by x-ray plates by Dr. A. H. Pirie.
Case reports by Dr. J. R. Fraser. The three case reports that are being considered this evening deal chiefly with conditions in which the diagnosis was materially assisted by the use of the x-rays.

1. Gastric ulcer with hour-glass contraction: A woman aged forty-eight had suffered from abdominal symptoms for seven years; she had been treated at first for enteroptosis and remained well for nearly three years. Four years ago her symptoms returned, with indigestion, epigastric pain, and vomiting. These attacks recurred from time to time with exacerbations and remissions, until a few weeks ago the signs became acutely worse. The epigastrium pain was very severe, and was accompanied by nausea, vomiting, moderate haematemesis, and collapse. On admission she was emaciated, anaemic, feeble, vomiting from time to time, the vomitus at times containing blood. Palpation of the abdomen showed some rigidity, epigastric tenderness, and an indefinite palpable mass in the right hypochondrium. Inflation gave one the impression of a very small stomach. A gastric analysis was not made, for obvious reasons, but instead a bismuth meal was given, which revealed the interesting condition shown on the x-ray plate. Dr. Armstrong performed the operation and found a large ulcer in the middle of the stomach causing contraction of the hour-glass type, and adherent to the pancreas were evidently the small saccular pockets shown in the skiagraph. A gastroenterostomy was performed. The patient seemed to do well for a time, but finally died from general weakness. Autopsy verified the clinical findings and showed the presence of a deep ulcer on the posterior wall with marked perigastritis and adhesion to pancreas, showing the hopelessness of excision. The x-ray findings are rendered very clear by the burrowings of the ulcer.

2. A girl of twenty-one, illness began in September with cough, expectoration, profuse sweats, and progressive loss of strength—in fact just such a history as one would expect in abscess of the lung, though the cause was ill-defined. The examination of the chest showed a small area of dulness with blowing breathing and sounds that were suspicious of cavitation in the right apex behind. The skiagraph showed a definite shadow of consolidation and a small area evidently representing the abscess cavity. After one week of intermittent pyrexia and two weeks of very moderate fever, the patient rapidly improved, till at present her condition is practically a cure without treatment, either medical or surgical. The second skiagram shows the return to normal.

3. A woman aged fifty-four, entered hospital complaining of weakness, cough, expectoration, and loss of weight, illness one and a
half years; typical history of pulmonary tuberculosis. Examination of chest showed marked dulness on percussion over right side, particularly in interscapular space and just below it, while the base itself was free from any impairment. Blowing breathing over part showed definitely that consolidation was present, and one naturally concluded that the case was one of pulmonary tuberculosis. Repeated examination of sputum failed to reveal any bacilli, while leptothorises have been constantly present in every examination of the sputum. Cultures could not be successfully obtained, however, but absence of any other germ has made it suggestive that this may have some association with the disease. It is true one does not expect leptothoritic germs except when abscess or gangrene is present, but in this case the sputum never gave any indication of the condition. The patient is improving and the germs are gradually diminishing in number.

TORONTO ACADEMY OF MEDICINE

At the monthly general meeting of the Toronto Academy of Medicine, held on December 3rd, four papers were read.

Professor J. J. MacKenzie dealt with the subject of "Anaphylaxis" and Infection; giving an historical sketch of the development of present day knowledge of anaphylaxis, the phenomena of the condition and their physiological interpretation. Serum disease, hypersensitiveness in man, and the relation of tuberculosis, small-pox and vaccinia were also discussed. The influence of allurgic phenomena upon the clinical manifestations in acute infections was dwelt upon, as also were the allurgic characters in the clinical course of typhoid fever and typhoid relapse.

Dr. Duncan Graham, speaking of the diagnosis and treatment of syphilis, mentioned various interesting historical landmarks. Among these were John Hunter's supposed establishment of the identity of gonorrhoea and syphilis; Metchnikoff's experiments with monkeys; Shaudinn's discovery of the spirochaeta pallida; Wassermann's discovery of serum diagnosis, and Noguchi's cultivation of the spirochaete. Diagnosis may be made by the discovery of the specific germ in the primary sore or by means of the Wassermann reaction, both of which are of the utmost importance in regard to treatment. Local diagnosis (microscopic) may be made in seventy-five per cent. of cases during the first four weeks. This percentage varies from one hundred per cent. during the first week to about twenty per cent. during the fourth week in untreated cases. The
Wassermann reaction, on the other hand, increases in strength. Twenty-five per cent. of untreated cases become positive within the first three weeks, while at the end of two months one hundred per cent. are positive. In cases treated thoroughly before the Wassermann appears, relapses occur only in ten per cent.; this percentage increases if treatment is delayed. In the case of salvarsan, three or four full doses should be given at short intervals. In all cases the Wassermann reaction should be looked upon as the criterion of cure.

Professor J. B. Leathes, speaking on the subject, "Nitrogen Waste and Infection," said, "The excretion of nitrogen is increased in infective fevers (Traube, 1855; Vogel, 1854). The significance of the phenomenon is a question on which opinions differ. Excretion of nitrogen derived from the cells of the body is increased three or four fold by lack of food. Hunger will reduce the average life of the protein components of the body from five hundred to one hundred and twenty-five days. In fever even the latter figure is decreased, so that the mean life of tissue and body proteins approximates that of haemoglobin (i.e., six to eight weeks). One explanation of this excessive nitrogen excretion ascribes it to the raised temperature, a factor, which, acting in a manner analogous to its action in a chemical reaction, accelerates tissue changes. This, however, would only partly account for the surplus excretion since experiment has proved a difference between actual and estimated nitrogen waste. Increased cell destruction resulting from bacterial toxins is another explanation. The fact that a full carbohydrate diet will inhibit nitrogen excretion in fevers is an interesting but confusing discovery. Lastly, it is suggested that toxins may let loose intracellular proteolytic enzymes or paralyze the agents which normally restrain their action. In relation to the phenomena of anaphylaxis it is significant that in treating horses with diphtheritic toxins only those animals will yield antitoxins which react to the injection with an increased output of nitrogen."

Dr. O. R. Mabee discussed the question of "Diseases Produced by Filterable Viruses," illustrating his remarks by means of a chart of these organisms and their properties.

THE OTTAWA MEDICO-CHIRURGICAL SOCIETY

A regular meeting of the society was held December 20th, 1912, in the Carnegie Library, Dr. J. D. Courtenay in the chair. Dr. Valin presented a case illustrating extensive skin grafting.
Dr. Brown read a paper on typhoid perforation. He found records of seventeen cases having perforation in over two thousand cases of typhoid.

Dr. I. G. Smith reported a case, a man aged fifty-five, who had fallen on the abdomen against the edge of a sidewalk, and showed symptoms of bowel perforation. He had been in good health up to the time of injury. Pain and distress were felt in the epigastrium only. On opening the abdomen the bowel presented multiple small hæmorrhagic areas, and in the sigmoid were found a perforation and an area in which the outer coats of the bowel were lacerated. The bowel was repaired and the abdomen drained. Patient doing well after eight days. The symptoms in this case were centred in the epigastrium, and it was only after a careful search that the perforation was discovered.

Dr. Chabot reported a case of enlarged prostate. This was removed under spinal anaesthesia. Patient had delirium before and after operation, and during operation had collapse. Finally made a perfect recovery.

Dr. Gibson reported two cases of malignant prostate. He considered this condition was quite common in prostate cases.

CENTRAL SOUTHERN ALBERTA MEDICAL SOCIETY

On November 4th, a meeting was held of the physicians from the towns of Nanton, Cayley, High River, Okotoks, Blackie, and Vulcan, and the Central Southern Alberta Medical Society was formed. The officers elected were: president, Dr. J. S. Murray, Okotoks; secretary-treasurer, Dr. G. F. Learmonth, High River.

CALGARY MEDICAL SOCIETY

The third annual banquet of the Calgary Medical Society took place December 10th, under the presidency of Dr. E. J. Madden. Seventy members were present and the meeting was a most successful one. The officers are: president, Dr. E. J. Madden; vice-president, Dr. William Hackney; secretary, Dr. J. P. Palmer; treasurer, Dr. G. Johnson.

BRITISH COLUMBIAN MEDICAL ASSOCIATION

The officers for the year 1912-1913 are: president, Dr. A. S. Monro, Vancouver; secretary, Dr. J. W. McIntosh, Vancouver.
PROSTATECTOMY—SUSPENSION OF THE BLADDER

By George E. Armstrong, M.D., LL.D. (Queen's); D.Sc. (Liverpool)

Surgeon to the Royal Victoria Hospital, Montreal; Professor of Surgery, McGill University

Since McGill's paper on the "Treatment of Retention of Urine from Prostatic Enlargement," read at the Leeds meeting of the British Medical Association in 1889, interest in the surgery of the prostate has steadily increased. McGill favoured the suprapubic route, and laid down a few details that have been but little added to up to the present time. We have learned more about the function of the prostate and the frequency of malignant disease; and the technique of its removal is so far improved that the patient suffering from prostatism to-day can be given much greater hope of safe relief than could the patient of twenty-three years ago.

The aetiology of prostatic hypertrophy remains obscure. A goodly number of theories have been advanced, but none of them harmonize with all the facts. And it cannot be said that any one theory has so far been at all generally accepted by the profession. Nor do we know any more concerning the aetiology of prostatic atrophy. The deviations from the normal that are associated with a percentage of the cases of prostatic hypertrophy are varied and important. First, of course, is the obstruction to the outflow of the urine from the bladder and to the entrance of instruments into it. Then follow stretching and degeneration of the musculature of the bladder, damage to the kidneys, and, later, disturbance of the circulation and the action of the heart. Autopsy examination of men from sixty to ninety years shows that prostatic hypertrophy is present in only thirty per cent., and that not more than half of these are in any way disturbed by the increased size of the gland.
A very interesting study of prostatic hypertrophy has recently been published by Tandler and Zuckerkandl. Their findings are important in that they present the subject in a new light and make it necessary to review our operative technique. Most of us have hitherto believed that the whole gland was involved in the hypertrophic process and that when we operated we removed the whole prostate in its capsule. They find that in ordinary cases only a limited portion of the prostate is enlarged; that the median lobe which, they state, is anatomically constant and morphologically and embryologically independent, is the part chiefly concerned, and that the lateral lobes and the anterior and posterior commissures, i.e., all the peripheral portions, are pushed aside, undergo pressure atrophy, and represent what we have regarded as the capsule, and that in conjunction with these portions, the part of the prostatic urethra from the colliculus towards the circumference remains unaltered after the usual operation of enucleation. It appears then that only the central lobe, together with a central zone of the gland surrounding the urethra, is removed in the ordinary operation. It follows that the ejaculatory ducts with the colliculus are preserved in typical prostatectomies, as is also the prostatic urethra counting from the colliculus. The examination of the pelvic organs from the outside in patients who have undergone prostatectomy shows the fifth lobe as felt per rectum to be unaltered in outline. Therefore, "hypertrophia prostate totalis," in the usual sense, is a misnomer. They claim that the only part involved lies between the internal urethral orifice and the colliculus and that the hypertrophic process affects primarily only those parts which are in contact with that portion of the urethra which is involved in the vesical neck and situated above the colliculus seminalis; in other words, the middle lobe. Those who have seen their specimens in Vienna tell me that they are very clear and leave little, if any, doubt as to the correctness of their views.

There has been a difference of opinion regarding the number of lobes in the prostate. Sir Everard Home first described the third or middle lobe. Griffith, in 1889, expressed the opinion that the middle lobe was independent, "having glands of its own which open on parts of the hinder wall of the prostatic urethra." On the other hand, Pallin, Evatt, and Jones all maintain that the middle lobe is always formed by ingrowths from the lateral lobes.

The anatomy and embryology of the prostate has been recently studied by Lowsley who published his views in the Journal of Anatomy, July, 1912. He finds that in the foetus there is clear
evidence that the prostate is developed from five distinct sets of tubules, and is therefore a gland of five distinct lobes, excluding the subcervical glands of Albarran and also the subtrigonal glands. Lowsley finds that the anterior lobe soon atrophies. He found a definite middle lobe in ninety-seven out of one hundred and three cases examined, including ten foetuses. In five cases the presence of a middle lobe was questionable, and in one it was definitely absent. Kuznitzky found a persistent ventral lobe in one out of every fifteen prostates.

Lowsley's fifth lobe is applied like a cap over the under surface of the lateral lobes, forms the apex of the prostate, and is the part felt by the examiner's finger in the rectum. He states that it is separated from the lateral lobes by a definite and persistent layer of fibrous tissue. His studies convinced him that the number of tubules opening into the urethra varies from fifty-three to seventy-four, the average being sixty-three instead of between twenty and thirty.

As might be expected, this new gross pathology of prostatic hypertrophy is not accepted by all. Thomson Walker, for instance, adheres to the more commonly accepted idea that the whole of each lateral lobe is enlarged and is generally removed, although he admits that he could "never find any prostatic gland ducts opening on the posterior wall of the normal urethra below the verumontanum," and believes that "the gland tubules which may be seen in the middle line in this position are processes from the lateral lobes and are absorbed into them when hypertrophy takes place." That it is not difficult to leave a portion of the prostate, to leave behind, indeed, enough of the prostate to continue the hindrance to the outflow of urine, I have observed on several occasions. In three or four instances I have removed a considerable portion of the prostate, over two and three years after prostatectomy had been performed, or at least after an operation at which the patient was assured that the prostate had been removed. In one instance the man told me that his prostate had been removed three times. At the fourth operation I removed a prostate as large as a small hen's egg. In all these cases a sinus had persisted and the patient had been unable to pass his urine naturally. In one the first operation had been by the perineal route; in two by the suprapubic route. In some cases, certainly, it is possible to separate the removed prostate into several more or less distinctly encapsuled portions. In the above cases one would seem justified in concluding that the first operation had been imperfectly carried out, or
that prostatic tissue left behind had subsequently undergone hypertrophy. In favour of the latter view, I may say that in one of the cases referred to the first operation had been carried out by an accomplished and experienced surgeon.

This new conception of Zuckerkandl has an important bearing on our choice of route of approach and on our expectation regarding post-operative disability, especially in reference to sexual competence and potency. It seems quite clear that if only a limited and local hypertrophy is to be removed, and if that hypertrophy is on the vesical rather than the rectal surface, and if the lateral lobes and that part of the urethra distant to the colliculus are not disturbed, that the transvesical approach is more direct and enables the obstructing portion to be removed with less injury to the remaining tissues than when the approach is through the perînæum. It seems also to explain why the perineal approach, by dividing the anterior commissure, is occasionally followed by persistent incontinence. In the suprapubic operation the compressor urethrae is not disturbed. Walker examined the condition of the sphincter in fifty cases and found the constrictor urethrae was the effective sphincter in twenty-four; the vesical sphincter had resumed its normal function in twenty-six, and he believes that these findings strongly contraindicate drainage of the prostatic cavity by the perînæum after suprapubic prostatectomy, as has been suggested and carried out by some surgeons.

Walker has found that the mucous membrane of the urethra is ordinarily divided just above the point where it is held down by the ejaculatory ducts. These ducts are seldom found on or attached to the portion removed. If the verumontanum remains intact and the seminal vesiculae are not disturbed, there is no injury to that part of the genital system, and he claims that such is the case in a considerable portion of the total number of cases. Now, as to his results. Of forty cases from whom he received full details in regard to the sexual functions, he learned that in fourteen, or 35 per cent., no difference was observed; desire, erection, and ejaculation were normal. Five, or 12'5 per cent., noticed a slight, gradual loss of desire since operation, being otherwise normal. In thirteen, or 32'5 per cent., desire and erection were normal, but there was no discharge of semen. In three, or 7'5 per cent., there was diminished desire, this being usually a continued failure of vigour which had been observed previous to operation; and in five or 12'5 per cent. desire was abolished, and there was no erection and no emission. In two cases, where the sexual function was otherwise normal,
there was pain at the moment of ejaculation. When we remember that the operation as a rule is performed on old men, these results would appear to be rather satisfactory. It could hardly be expected that in cases where the sexual power was already failing that any great improvement would follow the removal of the prostate. The point is that where the sexual vigour was normal before operation the prostatectomy did not lessen it if the general health remained good. In another small class the enlargement of the prostate seemed to act as a sexual excitant and the abnormal desire was one of the chief complaints. In these cases the removal of the prostate was followed by a decline of desire.

Another point of great importance observed by all operators is the remarkable recovery of tone in the musculature of the bladder wall that so often follows the removal of the obstructing prostate. Stricture is a rare sequel. I have not known of any serious narrowing in any of my cases. In one of my very early cases the man returned, I think three times at intervals of a year or more, complaining of some difficulty in micturition. On each occasion I passed two or three sounds without difficulty and he expressed himself as entirely relieved. As a rule, sounds or catheters are easily passed after prostatectomy, but in some cases the tip of a soft instrument seems to find an obstruction in the space from which the gland has been enucleated: a hard gum elastic catheter with the point well curved forward or a steel or silver instrument will pass. I think that in cases where the patient can pass a fair stream, but in which there is difficulty in passing a catheter, that so far as I have observed personally, there is no stricture but a depression at the prostato-vesical opening. I have made it a routine practice to pass, immediately after the prostate is removed, a soft rubber catheter through the urethra into the bladder and to a point just internal to the space from which the prostate has been removed. The catheter is used alternately with the suprapubic tube to wash out with hot water, and is allowed to remain thirty-six or forty-eight hours. I have thought that its presence at this time prevented any ragged portion of mucous membrane falling over the prostato-vesical or prostato-membranous openings in such a way as to narrow the urethra and become an obstruction. I can’t definitely say that any good has been accomplished by this detail, but it appears to me to be a safeguard against subsequent narrowing.

The mortality attending the removal of the hypertrophied prostate, excluding those that are malignant, depends almost entirely on the patient’s general condition and particularly on the
degree of renal efficiency. The general experience of operators has demonstrated that hypertrophy of the prostate in a large number of cases is associated with urine of an abnormally low specific gravity: in other words, with renal insufficiency. We know that the specific gravity of the blood serum and of the urine bear a direct relation to each other. If the kidneys fail to excrete effectively for a sufficiently long period, the specific gravity of the blood serum increases, and such patients are ill conditioned to undergo any serious surgical operation or to withstand any serious illness, particularly any general systemic infection.

We have also learned that if the increased intra-vesical pressure due to the hypertrophied prostate can be removed, the kidneys, if not too seriously altered, will quickly recover their secretive power. Relief from high intra-vesical tension may, in some instances, be brought about by frequent catherization, or by the insertion of a suprapubic drain into the bladder. This fact has given rise to the two-stage operation. We now commonly in cases of low specific gravity do the so-called two-stage operation which has contributed largely to the lowered mortality. There is one other condition well recognized, and that is the gradual formation of a pouch behind and below the prostate and internal meatus. If no steps are taken to prevent it, the bladder, after a prostatectomy, tends to lie in the pelvis at a lower level than normal for two reasons: first, the pouching that has already taken place, and secondly, because the natural supports are somewhat weakened and separated while approaching the bladder. To obviate this I have attached the edges of the incision in the bladder to the edges of the abdominal incision. I pass a catgut suture through the anterior sheath of the rectus and through the edge of the opening into the bladder, and then out again through the bladder wall and anterior rectus sheath, the point of exit from the bladder being one inch above or below the point of entrance. This is then repeated on the other side. I then have two strong supporting sutures that bring the anterior wall of the bladder up to the anterior abdominal wall and retain it there. In addition to the support given to the bladder wall, the prevesical space opened up is narrowed, leaving a smaller surface for absorption, and insuring more rapid repair and an earlier final closure. I am satisfied that by this simple procedure there is less residual urine after the operation and a better functional result. There seems to be much less absorption from the wound, less fever, and a smoother temperature chart. Then when the suprapubic wound closes, the base of the bladder, lying on a higher
level, empties more perfectly, and the second period of temperature disturbance is reduced to a minimum. Large diverticula when present defeat to some extent the object, and in these cases there is more constitutional disturbance, as shown by the temperature chart, both after the primary operation and at the moment of closure of the suprapubic wound.

I think it is very important after removal of the prostate to carefully approximate the edges of the incision in the rectal sheath around the drainage tube to insure against a hernial protrusion later on when the patient is up and going about. I use continuous irrigation with a solution of oxycyanide of mercury, 1 in 5,000, for five, six or seven days in ordinary cases. If there is an unusual degree of cystitis it may be necessary to continue the irrigation a few days longer.

In the twenty-two cases that I have operated on in the Royal Victoria Hospital, the ages ranged from sixty to eighty-seven years. I have employed the suprapubic operation in all of them. The fact that the suprapubic and perineal operations have each such enthusiastic advocates is evidence that neither possesses all the advantages in all cases, and further experience may demonstrate that for certain cases the one is better, and for certain other cases the other. I have had more satisfaction with the suprapubic operation. In ill-conditioned patients with urine of low specific gravity, the suprapubic drain acts admirably. In from three to five or seven days the specific gravity will rise from 1004 or 1006 to 1017, 1018, or 1020, the pus will lessen, and the general condition improve. Something may be accomplished by frequent catherization, and more by a permanent catheter, but the suprapubic drain is followed by a greater improvement in a shorter time, and I think with less danger to the patient. It is introduced under local or gas-oxygen anaesthesia and opportunity is offered to make an examination of the bladder, remove calculi, if present, and to detect diverticula or new growths. So far I have found the improved renal secretion to be permanent. In two cases the specific gravity of the urine before operation was 1004; in two, 1005; in one, 1006; in one, 1007, and in one, 1008. The urine in the cases with low specific gravity was usually alkaline and generally contained large quantities of pus. The quantity of residual urine varied from two to twenty-four ounces. Eleven cases were done in one stage and eleven in two stages.

In two cases diverticula were discovered. In one there was a large single diverticulum with an opening near the centre of the
fundus of the bladder large enough to admit my forefinger easily and estimated to contain five or six ounces. In the other, there were two diverticula opening at the base of the bladder. Whether or not the ureter opened into the diverticula or by separate openings was not determined. Vesical calculi were present in two cases. The average time of closure of the suprapubic wound and the establishment of normal micturition averaged sixteen days. I attribute the smooth convalescence and early return of natural voiding to the continuous irrigation during the first week or eight days, and, once more, to the suspension of the bladder, as I have described, which brought up the base to a higher level more directly opposite the internal meatus, and to the almost complete obliteration of the prevesical space. Twelve of these patients left the hospital without any residual urine, one with an ounce and a half, one with four drachms, one with seven drachms, and in three cases the presence or absence of residual urine was not determined. In only two cases was the prostate found to be carcinomatous and there was no example of sarcoma. In this respect this series is more than usually favourable, as in large series of cases carcinoma is present in one case in six or seven. Young reported sixty-eight carcinomata among two hundred and fifty enlarged prostates which had been extirpated. Boyd and Geraghty have found that the fifth lobe rarely or never becomes hypertrophied, and that primary cancer of the prostate rarely or never begins in any other portion. There were two deaths and nineteen recoveries. One died from a cardiac lesion associated with extreme emphysema. This man probably should not have been submitted to operation. We overestimated his cardiac power. He had suffered complete retention for three weeks.

The other was a feeble old man eighty-seven years of age. He was brought to the hospital with urinary extravasation into the tissue of the serotum and extending up over the lower abdomen. He also had multiple, tight, urethral strictures. Free incisions were made over the serotum and lower abdomen, and a good-sized suprapubic drain placed in the bladder. The bladder was nothing less than an abscess cavity, filled with horribly offensive pus and alkaline urine. The old man should have died in seventy-two hours, but instead of that he gradually recovered and got fairly well, with a good appetite. He got so well that when he and his sons were told that he would have to go with the suprapubic opening the remainder of his life, he objected so strenuously that I was finally persuaded to divide his strictures and enucleate his
prostate. From this operation he recovered splendidly and got out of bed and sat in his chair each day. His urine had a specific gravity of 1022. A few weeks later he developed a low form of pneumonia and cardiac dilatation. His urine became scanty and he finally passed away. He really died of arteriosclerosis.

Tandler and Zuckerkandl made interesting observations on the disposition of the cavity from which the prostate has been removed. The space left immediately becomes smaller than the enucleated tumour. This is to be attributed to the contraction of the walls. The vertical measurement of the space is shortened and the edges of the vesical mucosa and the urethral stump are approximated. The lateral wall and base are contracted so that there exists only a narrow groove as an entrance to the wound beneath the sphincter. A part of the bladder is transferred functionally into the urethra.

To-day prostatectomy performed by one or two stages, as may be indicated, is a safe operation in men whose general condition is such that they can undergo any major operation. The functional results are remarkably good, and enucleation is to be commended whenever there are two or four ounces of residual urine and the nights are disturbed by frequent calls to urinate, instead of resorting to the catheter life which almost universally is soon followed by cystitis and impairment of health.

Since reading this paper I have receieved the following report from Dr. Grünér, pathologist of the Royal Victoria Hospital,

"The conclusion of the results obtained in thirty-one hospital cases (1912) was that removal was complete in only a few. There was evidence of adenomatous hypertrophy as far as the extremity of the tissue excised.

"There were four cases of carcinoma, exhibiting different types. One came from the vesiculae, the second was intra-prostatic, and the others (adenocarcinoma) were doubtful. In none of these cases were the pieces of prostate identifiable enough to be able to refer them to the fifth lobe with definiteness."

The ninth International Physiological Congress will be held at Gröningen from September 2nd to September 6th, under the presidency of Professor H. J. Hamburger.
I WISH to present a few contrast cases of common conditions met in practice, with the object of illustrating the advantages of early, exact diagnosis and the results of deferring it.

GONORRHOEA. This disease is usually diagnosed early, but it is often pronounced cured when there are serious probabilities ahead. To take an average case: B. 12411, a contractor, fifty years old, has a gonorrhoeal discharge of three days’ standing. In three days more no gonococci can be found on the slide. So far all is well, but in eighteen days more shreds appear from the posterior urethra. With continued treatment, at the end of forty-three days the urine is almost clear, and thereafter on repeated examinations of cultures from the vesiculae seminales, prostate, Cowper’s glands and urethral glands no gonococci are found. Perhaps this is the best we can do for our patient; but, left untreated at any stage prior to this, and possibly even at this stage, the following types may develop:

Case 1269, impermeable stricture, operation for which requires retrograde sounding. Back of the stricture site will probably always be a deep-seated infection.

Case K. 499, a man of thirty-eight, gradually becoming sexually impotent. Superadded is an acute cystitis. He has a greatly distended prostate from which much pus is expressed. Massage in large part restores his sexual powers, but after nine months of this his bladder still at times is irritable.

Case C. 717, a man of forty-nine, urinates often, night and day. There is urgency. The prostate is smaller than usual, but it contains pus. There is two ounces of residual urine. One makes out a median bar with the cystoscope, and a contracted internal sphincter with a Kollmann dilator. He therefore has a chronic interstitial prostatitis, from which has developed stricture of the outlet of the bladder. A section is removed with Young’s

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Read at the Annual Meeting of the British Columbia Medical Association, 1912.
punch. It is densely fibrous in structure. Symptoms are relieved, but ejaculation of semen hereafter will take place into the bladder.

Case 12314, an Italian labourer, twenty-eight years old, is unable at any time to hold his water more than fifteen minutes. A stricture has recently been dilated without relief of symptoms. The bladder capacity is two ounces. There are abscesses in the epididymis, perinæum, prostate, and vesicula seminalis on the left side, an interstitial and peri-cystitis. As drainage of all these abscesses does not result in the temperature staying at normal, it seems not improbable that the right kidney is also affected. There are some indefinite signs pointing to this rather than to the left.

I shall not take up time by reporting cases of gonorrhœa in women who have been infected by their husbands.

Colon Bacillus Infection. Case 1246, a bank manager of thirty-one has had bladder spasm off and on for two years so that he has had to consider the proximity of a water-closet in all his business and social relations. There is pus in the urine. On cystoscopy the bladder epithelium is normal, but to the left there is bulging of the floor. This corresponds to the area of a distended vesicula seminalis, and the typical bladder spasm comes on when this is touched with a ureteral catheter. Flakes of pus in the urine contain embedded spermatozoa. He has suffered for two years in this way. He is practically free of symptoms so long as the vesicle is kept free of tension by massage, but the duct is stenosed from inflammatory congestion, if not from actual fibrosis.

Case 14611, a girl of twelve, has had a pyelitis since babyhood. She is otherwise healthy and gives no symptoms. Her mother refuses to have the pelvis of the kidney irrigated. Should she become pregnant in the future, the enlarging uterus pressing on the ureter may cause dilatation, impaired resistance to the bacillus, and septicæmia. If a stone-forming organism joins in, calculi will likely form.

Staphylococcus Aureus. This micro-organism occurs in alkaline urine. In my experience, if found in pure culture from the bladder or urethral urine, it may be present for protracted periods without stone forming; but it is not infrequently associated with the staphylococcus albus, which has the power of breaking down urea to free ammonia and carbonic acid, the former uniting with magnesium phosphate, the latter with calcium. Add to these salts an inflammatory exudate, and secondary calculi form.

Case A. 15610, a woman twenty-five years old, has had pyuria for two years, dating from her last pregnancy. The right
kidney is enlarged and tender; the left is normal to all tests. A mere shell of right kidney, containing pus and multiple secondary calculi, is removed. Early in the course of this disease there is a chance of cure with urotropin and lavage of the renal pelvis. As it stands, this patient suffered for two years and has lost one kidney.

The Proteus of Heuser. I have seen this infection diagnosed only at the Johns Hopkins Hospital in advanced stages, when the cystitis it had set up was deeply interstitial. The chances of cure were well nigh hopeless. The bacillus split up urea, and secondary stones formed rapidly and repeatedly.

Tubercle Bacillus. This disease of the kidney or epididymis is, for surgical purposes, primary in these localities. The tendency of the former is to spread to the bladder and other kidney, of the latter to the prostate and other testis. Early removal of the focus results in cure. My earliest case of renal tuberculosis is No. 12516, in which there was hematuria five months previously, followed by the first noticed pus in the urine. Then came left renal colic. To-day he has a right kidney free of tuberculosis. The left is the first source of the tubercle bacilli found in the urine, although the whole bladder is spotted with typical ulcers. With removal of the left kidney one expects the bladder to heal. It does so in a large percentage of cases.

In my experience the next type is far more frequent: Case 1212. The symptoms are referred to the right kidney and the bladder. Cystoscopically, the right side of the bladder only is affected, but the catheters find tubercle bacilli in both ureters. He is placed on tuberculin. To accentuate incidentally how thoroughly a cystitis may mask such conditions, let me add that this case was subsequently operated on suprapubically and again perineally. He died about six months after I saw him.

Prostatic Adenoma. Chase and Tieney in eight hundred and sixteen cases found the death rate of prostatectomy to increase very rapidly with age, being 9 per cent. in the seventh decade, 15 per cent. in the eighth, 33 per cent. in the ninth, and 50 per cent. in the tenth.

Some prostatic growths do not appreciably obstruct urination, at least in their early stages. Usually they do, and then there is back pressure of urine and dilatation of the bladder. Later there is pressure atrophy of the kidney parenchyma, which kind of atrophy, Wilson and Howell affirm, causes permanent loss of function commensurate to its degree. In the second place, obstruction weakens the urinary tract to infection. No microörganism can
obtain a foothold on a normal bladder epithelium—the proteus only excepted. On the other hand, I have never seen a chronically dilated bladder that would not take on a cystitis on simple catheterization. Watson and Cunningham compute the death rate of beginning catheter life at about 20 per cent., due mainly, I believe, to infection from the catheter, but if there is a large amount of residual urine, its withdrawal may cause acute suppression, and this also may cause death. In the later stages of the growth, back pressure uræmia and vesical hæmorrhages may render operative interference much less promising. I believe we delay radical measures too long at present. The death rate of prostatectomy may be reduced by careful preparation, but the number of lives lost during this preparation is much the larger percentage, and this mortality will not be much reduced so long as we think that prostatectomy should be undertaken only as a last resource. I have no early cases to report. The best material I have operated on was case 715 N., a carpenter of sixty-two, with prostatic symptoms for a number of years. Within six months he had had two attacks of urinary fever. Cystoscopically the urethral orifice was distorted by a chestnut-sized growth which covered the left urethral orifice. After enucleation the patient was about the ward in a week, and very active. He still has a chronic cystitis which is troublesome at times, but there is no obstruction to urination.

Case M. 1223, an old gentleman of eighty-four, whose bladder was opened a week previously to remove blood clot. The kidneys now proving competent, although he is handicapped by arteriosclerosis, enlarged heart, anæmia from loss of blood, and local infection, enucleation is undertaken and proves a prolonged business. Death follows a few days after.

Papillomata of the Bladder. These growths, with time, whatever their primary characteristics, tend to become malignant. If removed suprapubically they frequently recur in the incision, and therefore might require repeated operation on this account. Now that we have fulguration at our disposal, papillomata may be almost painlessly removed through the cystoscope without resort to an anæsthetic, and without interfering with the patient's occupation. I have one case under observation now whose papillomata have at several sittings been fulgurated, and the bladder appears almost normal. He is, however, at the age when tumours are more apt to be malignant, and his condition will be under observation for a considerable time yet.

Cancer of the Bladder. Of the seven or eight cases of
cancer that I have seen in Vancouver not one is living. In every one of them the disease was too far advanced to undertake any but palliative measures. In one of them, however, where the growth appeared to be confined to the roof, removal was attempted. A generous margin of apparently healthy bladder was resected with it. An enlarged gland was then found at the base of the bladder. She died of recurrence in six months. If the profession will only realize that blood in the urine, whenever found, should be traced to its source, and that to delay a diagnosis in these cases is to fritter away a patient’s day of grace, such bad results will be less common.

STONE. The chief danger of delaying diagnosis of primary stone is infection. In all kinds of stone, progressive damage to the ureter and kidney results, if there is obstruction to the outflow of urine.

Case P. 580, a man of forty-four, for thirty years, off and on, has been accepted and refused for life insurance on account of intermittent haematuria. At no time did symptoms point to the left kidney, and, as he is very fat, palpation is unsatisfactory. Cystoscopy reveals an inflamed trigone and blood coming from the left ureter. The x-ray gave a shadow as of stone. At operation the left kidney was found so stretched that it could not be delivered through an ordinary incision. A large oxalate was removed from the renal pelvis. The kidney is irrevocably damaged and there is still pus in the urine.

MOVABLE KIDNEY. This is a common thing in women, occurring on the right side, and in the majority of cases does not do sufficient harm to attract much attention. It may lie, however, at the bottom of a gastric dilatation, gastric ulcer, or even obstructive jaundice, if the duodenum, where it is attached to the kidney, is dragged down too much. Chronic constipation may be the cause or the effect of the right flexure of the colon dropping with the kidney. The commoner results are tortion of the renal pedicle interfering with the renal blood supply, or folding of the ureter over its opening in the kidney fascia interfering with the outflow of urine. If operation is done early, results are good; if delayed too long, the neurasthenia which follows persistent worrying of the nervous system by pain is too often not cured by nephropexy. Wilson and Howell say: "In the chronic cases the results are unfortunately far from satisfactory. Of a total of seventeen cases, one only was cured, three greatly improved, nine improved, and four remained in statu quo." Besides this there is lessened resistance to microbial invasion in the tissues involved, and pyelitis and pyelonephritis are
frequently to be traced to this cause. If staphylococcus aureus is the infecting agent, stone is apt to form.

Case M. 1259. Mrs. M., forty-five years old, has always had a weak back. Has borne two children, now grown up. For one year past she has had cystitis, and a dull ache in the right side, with typical renal colic off and on, and sacro-lumbar pain. She has been subject to severe attacks of indigestion. With collargol injected into the renal pelvis, an X-ray reveals the kidney turned over inwards and lying at the level of the iliac crest. Fixation was satisfactory, as the capsule proper was sclerosed. Four months have elapsed, and there is no return of the colic, and the infection has cleared up with no other treatment. Her indigestion is better on the whole, but is still present in a less degree at times. The sacro-lumbar pain was worse after she got up, perhaps because of prolonged confinement in the dorsal position. It steadily improved with massage, but I doubt if she will ever have the full reserve of nervous energy she would have had if neurasthenia had not developed.

Hypernephroma. Watson and Cunningham state that up to 1908 there were only two cases of hypernephromata on record that survived operation three years. I have had only three cases for diagnosis. All were so far advanced that diagnosis was simple. Two of these are dead, and the third, which I operated on four months ago, has metastases already far advanced. Considering that this disease is at first limited to the kidney and that hæmaturia is usually the first sign of its presence, urinary blood should be traced to its origin in all cases.

In conclusion let me emphasize:
1. That the importance of the brood of diseases which follow gonorrhœa is not sufficiently recognized in their incipient stages.
2. That in the urinary tract, as elsewhere in the body, it is important to know the chief microbe present in disease.
3. That we should realize more fully that any obstruction to urination causes serious progressive damage.
4. That blood or pus, whenever found in the urine, peremptorily calls for an explanation of its source.
THE FALLACIES OF EXISTING FATALITY RATES

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The present status of our beliefs concerning the vital statistics of infectious diseases is chaotic. The number of deaths we know with a fair degree of accuracy; and the total deaths we can attribute to their respective causes more or less accurately, depending on a great many factors of varying weight in different localities, and not to be discussed at present. But the number of cases which those deaths represent, or are supposed to represent, I shall show we do not know and cannot know, unless a new source of information, or a new method of obtaining it, is presented; and I shall present both to you; not perfect but improvements.

To illustrate existing conditions. The prevalence of typhoid fever (taken as an example of all the infectious diseases—diphtheria, scarlet fever, tuberculosis, etc.), is calculated very often simply by multiplying the deaths by ten. Ten times the deaths is supposed to give the cases. Thus, twenty-one deaths from typhoid are supposed to represent two hundred and ten cases. The factor ten is used because the belief has become established that the fatality rate of typhoid fever, i.e., the number of deaths which occur amongst one hundred cases, is ten—in brief, that ten per cent. of typhoid cases die. So also, because we are accustomed to believe that about four per cent. of cases of measles die, i.e., that the fatality rate is four, we multiply the deaths from measles by twenty-five and believe that we thus obtain the number of cases which those deaths represent. The reason for thus calculating cases from deaths, instead of determining the cases themselves by actual count, as the deaths are determined, is simply that we know the reported number of cases of typhoid and measles and other infectious diseases to be far, very far, below the truth, while, on the other hand, we believe the number of deaths is fairly accurate.

In the two most important infectious diseases we have, syphilis and tuberculosis, neither deaths, especially in syphilis, nor cases in either disease, are reported accurately enough to permit the application of a fatality rate, even did we know what that rate may be,
although we think we know approximately what it is in tuberculosis, in some places, thanks to Mr. Christopher Easton's work in New York City and to the tuberculosis investigations in Pittsburgh, Pennsylvania.

Here, then, is the root of the fallacy in calculating cases from deaths by the application of an established factor based on the fatality—and the fallacy is this, that we have never had the opportunity of establishing the validity of the factors which we use, because we have never really known the cases. We have been like the ostrich, hiding our heads in the sand. We knew that cases were very inaccurate, and did not dare to use them. Therefore we take a factor established at some previous time, but from equally inaccurate data, and use that with innocent *sang froid*. We never have determined, and never can determine, a factor of this kind, until we know both deaths and cases—and when we know the cases there will be no object in calculating them.

To illustrate the failures of the present method, it is sufficient to remember that in the noted Mankato, Minnesota, typhoid outbreak of 1908, there were thirty-five deaths. On the ordinary basis this would have been interpreted as indicating three hundred and fifty cases; actual investigation of a very minute and thorough character showed five hundred and eleven bed cases, with excellent reasons for believing that there were almost as many more walking cases. But this is not confined to typhoid fever. Applying the factor twenty-five to reported deaths from measles in Minnesota, a total of one thousand cases of measles in the state annually would be deduced. Calculations of the simplest character based on the common knowledge that the majority of persons have measles as children, will show that a population of two million people must necessarily have about twenty-five thousand cases of measles annually.

It has been customary for many years to abuse the medical profession for these tremendous discrepancies between alleged and actual facts; and the non-reporting of infectious diseases by physicians has formed the *motif* of many a public health jeremiad. It is quite true that many physicians do not report the cases they see or only a portion of them, neglecting especially the mild cases, which, of course, are the most dangerous ones. But it is also true that the physician does not see at all a very large proportion of the infectious sick as well as the infectious well. The fear of doctors' bills and of isolation or quarantine, together with the belief that the infectious diseases are a necessary stage in the development of
every child, and that every mother, certainly every grandmother, knows all that is needed for their care, is responsible for this; but however accounted for, the fact remains as a stubborn stumbling block to any accurate determination of the real prevalence of infection. Nor shall we ever know this, the primary essential to a successful campaign for the abolition of infection, until every case is carefully followed up, the contacts examined, and thorough study made of the infected area by experts devoting themselves wholly to such work.

Meantime, however, immensely important data can be secured concerning the natural history of infectious diseases, their distribution and prevalence, by going to the real source of information on this subject, which is not the individual himself, he rarely knows accurately, nor the physician, who almost never knows accurately, but the mother who almost always knows, not only what diseases, but where and when her children have suffered. The method is as simple, direct and accurate as it is possible to achieve at present, with fallible humanity. In brief, it consists in tapping the mine of information held by the mothers of the country through the public school system, and concentrating the half-million items of information secured into compact and practically irrefragable formulae. The following card is distributed through the schools to the teachers, and when these are returned, tabulated, and summarized for a large area, we shall have, for the first time, really reliable, and as we know from the returns already received, extremely startling information.

LONDON PUBLIC SCHOOLS

1 ........................................ 2 ........................................
1 Family name 2 Give name in full

3 ..............................................................
3 Address while attending school
*Strike out words which do not apply

4 Home Address
{ Township
{ Village of
{ City

County of........................................ Province of........

5 Date of Birth ................................ 6 Place of Birth ..................

7 Give dates of Residence outside Ontario ..................................

HEALTH CENSUS

Conducted by the Institute of Public Health, London, Ontario
This method developed from an investigation of poliomyelitis conducted by the writer in Minnesota in 1909. During the investigation, the children examined were recorded as to previous attacks of measles, diphtheria, scarlet fever, whooping cough, etc. The enormous prevalence of these diseases among children of all classes became apparent, and the contrast with the reported prevalence for the same districts was appalling. Hence the plan, gradually developed to its present point by Dr. A. J. Chesley, now Director of the Division of Epidemiology, in the Minnesota State Board of Health. This plan requires the cooperation of the public school system, a cooperation which costs them little in time or trouble, and which we have found most cordially and earnestly entered into in Minnesota, and also in London, Ontario, where the taking of a similar "health census" has been put into practice most successfully.

The five hundred thousand dollars required to build a new hospital at Victoria, B.C., have now been subscribed. A by-law to grant $200,000 was submitted to the ratepayers and was accepted; the provincial government has granted a further $200,000, and over $100,000 has been collected by private subscription.
MUNICIPAL HEALTH WORK PERTAINING TO INFANT WELFARE

By Robert E. Wodehouse

Provincial Medical Officer of Health, District No. 7, Fort William, Ontario

Many municipal health departments have been devoting much time, energy, and money in developing this branch of their programme of preventive medicine. Many health associations have been working, separately and cooperatively, along the same line, and many groups of workers have been formed with this sole object in view. Maternity homes, hospitals, and nursing-at-home associations, as well as settlement workers, have been adding their quota of assistance. Philanthropists have been free in their financial assistance. Funds have been established to protect expectant mothers from work and need; to provide physicians and nurses; to supply the mothers with the scientific attention required; to provide milk depôts to supply free milk; to provide Pasteurizing stations to purify the milk; to provide and maintain clinics to properly modify milk mixtures to suit the age and condition of the baby; and to assist associations established to exercise extreme care in the inspecting of dairy herds and the methods of caring for cows and their product until it reaches the mother. This last development procures for the baby a milk termed "certified," as near pure and free from harmful bacteria as possible. The most money and effort, I think, has been expended in caring for the artificially fed baby. This is the natural result, following investigation into the constant factors bearing on the mortality of infants under one year of age; artificially fed babies predominate in numbers to such an extent in the list of unfortunates.

The sentiment aroused by the helplessness of an infant, along with the knowledge of the seriousness of the facts of the situation and the actual results from feeble efforts to correct this loss of life, have brought this movement world-wide popularity. Medical journals contain helpful solutions. Public health periodicals publish statistics. State and municipal health departments have their experts make investigations as to causes and remedies, publish reports for workers and instructive aids in pamphlet form for.
distribution to mothers and guardians. The popular magazines and daily press lend their aid by printing hygienic articles on the proper care and feeding of infants and the best methods to use in protecting the milk and feeding utensils. Proprietary food firms pay twenty-five cents for each report a registrar sends them of a baby born, that they may visit the home with their persuasive talk, literature, and samples. The only commendable feature of the last mentioned activity is the evidence of energy to get on the ground early—a secret of no small moment in the success of any undertaking.

The dominant note in all the publicity is the care of the artificially fed baby. It is headlined and pictured to such an extent that it almost becomes a menace. One would be led to believe it was the original, true, and natural method provided by Providence. It tends to establish a false sense of safety in those none too capable to judge. This over-publicity or prominence given to the alternative method to nature, unnecessary in ninety per cent. of babies nursed (a conservative estimate), is unfortunate. It seems to the writer that it should be discouraged in every way possible. If the publications cannot be suppressed, it should warrant the collective efforts, on the part of those who have the work sincerely at heart, to publish just as many articles in the same class of lay journals and dailies. These articles should portray the abnormal percentage of deaths, from intestinal causes, among artificially fed babies, also the crime of feeding artificially before all resources to provide mother's milk have been exhausted. They should encourage protection and education of the prospective mother, to the end that she possess a good quantity and quality of milk for her baby. They should demonstrate the ease with which the breast milk can be maintained in sufficiency, by the mother placing the welfare of her offspring and its supply of food paramount, teaching her to rest and conserve all her energies to this end. No mother has been noted, in the small experience of the writer, to wish wilfully to jeopardize the chances of life of her child. The wrong start in feeding is usually the result of the remarks of some unknowing, careless speaking, disinterested person.

In Fort William, the home city of the writer, the work was undertaken in a meagre way in 1911, the population being nineteen thousand. To start with, the milk supply was hopelessly beyond immediate improvement, to a degree which would likely affect infant mortality. It was resolved to pin the fate of the undertaking to publicity. The evening daily paper lent its assistance by grant-
ing a space of two columns wide by eight inches long, on the front page, for "Hints to Mothers," material to be furnished by and over the signature of the medical officer of health. In the spring the mayor of the city gave a banquet to a hundred people,—doctors, nurses, councillors, members of the Board of Health and women’s societies. Papers were read on the state of affairs in this city and in other cities, also on the proper care of mothers and babies. A health visiting nurse was employed, a graduate of the Hospital for Sick Children, Toronto. A pamphlet was compiled, modelled after that of the Chicago Department of Health, "Care of the Baby." A printed copy of it was sent immediately to the home of each baby whose birth was registered. The nurse was furnished with the addresses of the babies registered, and visited the home, discussed the care of the baby and the mother, went into the history of the deaths of any of the mother’s previous babies, demonstrated the advantage of mother’s milk, advised the mother how to assist herself in maintaining a sufficient quantity and quality, and told the mother of the dangerous fatality attending the substituting of artificial feeding for that of breast milk. She taught the mother by actual demonstration how to hygienically bathe the baby and its clothes. She showed the dangers resulting upon failure to keep the house, kitchen, yard, and lane, as well as the yards of the neighbours, clean, dry, and free of flies. She answered all telephone calls for advice, and visited the homes repeatedly to carry out the orders of visiting physicians for sick babies and encouraged and instructed the mothers.

The infant mortality under one year, due to intestinal causes, reacted as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Population *</th>
<th>Births †</th>
<th>Deaths under One Year from Intestinal Causes during June, July and August</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>19,500</td>
<td>490</td>
<td>63</td>
</tr>
<tr>
<td>1911</td>
<td>19,900</td>
<td>553</td>
<td>22</td>
</tr>
<tr>
<td>1912</td>
<td>22,800</td>
<td>706</td>
<td>6</td>
</tr>
</tbody>
</table>

* Population assessor’s figures. † Still births excluded.

No knowledge of the percentage of artificially fed babies was available for the year 1910, but no solely breast-fed baby was known to have died from intestinal trouble, and such was the case in 1911 and 1912. Of the babies investigated in 1911 and 1912, the following results were obtained:
This shows a reduction of almost fifty per cent. in artificially fed babies. Knowing these results, it was exceedingly interesting to hear an English authority of no less experience than Dr. Janet E. Lane-Claypon, professor of hygiene at King’s College, London, state at the recent International Congress of Hygiene, Washington, that the results obtained from the expense and work of providing certified milk of proper modification, were a minimum compared to the returns for the same money spent and the same effort lent in procuring the names of expectant mothers, visiting and instructing them as to the seriousness of failing to nurse their offspring, and the ease with which the child may be raised with safety, if nursed; in impressing on doctors, midwives and nurses, the importance of doing all they possibly can to have mothers nurse their infants; in instilling into these same professional attendants all the available knowledge of aid to mothers in procuring and retaining a good quantity and quality of milk. It is also interesting to read the exhaustive review of Greenwood and Brown, statisticians to the Lister Institute of Preventive Medicine, published in the Nuttall Journal of Hygiene for May, 1912. Of five factors they were working on, having a constant bearing on infant mortality, it seems to the writer that only two were proven to be such. They were:

1. A high birth rate tends to be associated with a high infant death rate.

2. The habit of artificially feeding infants has a definite bad effect on the rate of infant mortality.

In concluding it seems to the writer, from the apparent results shown above, that the percentage of artificially fed babies can be reduced, and that this is the most sane and hopeful method of remedying this unfortunate loss of life. It is inexpensive to the municipality. Breast feeding is the cheapest method of feeding an infant, when convenience, cost of product, health and viability of child are considered. Proprietary foods are expensive. Dr. Lane-Claypon made the unqualified statement that where artificial feeding is necessary, records in her work showed that powdered, dry, unchanged milk, gave the best results. Modified, certified and pasteurized milk, when used, ran so many dangers from careless handling, lack of care in protecting milk and feeding utensils in the
household, and of being altered by bacterial action. One health visiting nurse can handle the tubercular and infant work the year round for thirty thousand of population. It appears to the writer that the expenditure for a capable, specially trained nurse, one with a children's hospital training preferred, to undertake this work, will bring much greater return for money spent than any other method of approach. It seems that more time could be spent to advantage in medical schools and in training schools for nurses, in impressing upon the students the importance of the infant receiving the milk of its mother; and in imparting to the students every known available help to assist expectant mothers in attaining this end and retaining a sufficient supply. Finally, a very enterprising step, worthy of copy, is being instituted in London this month (January). A short course of ten days' duration is being given to those engaged in this branch of preventive medicine. It is being conducted in Guy's Hospital, St. Bartholomew's Hospital, St. Marylebone General Dispensary and at the Lister Institute. It covers the best methods for conducting educational work, before and after birth, for fostering a human milk supply for the baby; the most successful methods for conducting infant welfare work; and a scientific grounding on all matters pertaining to it.

Dr. M. Paul Bonnier announces that he has found the cure for the malady known as stage fright. A nasal cauterization, a short and not very painful operation, is, it appears, all that is necessary. Several artists have already submitted to the cure with thoroughly successful results. Among others, an actress of some twenty years' standing, after a single cauterization, so entirely lost the sensations which on a first night had sometimes led even to a withdrawal from the stage that she cannot now conceive how she ever experienced them. An actor, whose stage fright took the form of a perspiration of hands and face so profuse that all make-up was impossible, was cured after two days' treatment, and now wears his false whiskers with ease.—The Australian Medical Gazette, October 26th, 1912.
Case Reports

CEREBELLAR ABSCESS OF OTITIC ORIGIN, OPERATION — RECOVERY

On March 14th, 1912, I was called to see a patient who was said to be very ill, as it was thought that perhaps the illness might be due to ear trouble. On arriving at the house, I found that the patient was a young man (H. McL.), nineteen years of age, who was lying in bed and appeared to be in a very weak state. There was nothing abnormal about the temperature, respiration, or pulse. The patient was very dull and apathetic, but his cerebration was otherwise normal. The fundi and pupils were normal. The right ear was normal, but the left showed a large perforation of the drum membrane and there was some foul-smelling pus in the external auditory meatus. The mastoid was not tender. There was no headache, dizziness, or nystagmus.

I learned from the mother that the boy had had measles when six years old,—complicated by middle ear disease on the left side. This otitis became chronic, and there had been a discharge of pus from the ear at intervals ever since. The history of the present illness was that six weeks previous to my visit he had had an attack of mumps, on both sides (complicated by orchitis), and at this time the left ear was affected and a purulent discharge came from it.

On February 23rd, when he was convalescent from the mumps, he was suddenly prostrated by an attack of headache and vomiting which was believed to be due to an over-indulgence in heavy food before he had fully recovered his health. Five days before I saw him he became very weak and was believed to be dying. At this time his attending physician, Dr. Pare, of Pointe-aux-Trembles, noticed that his pupils were widely dilated. Taking his condition with the history, I decided that there was in all probability an abscess somewhere in his brain—probably in the cerebellum—and ordered his removal to the General Hospital for further observation. When in the hospital it was found that on rotating the eyes to the right (i.e. away from the lesion) a marked nystagmus was produced.

Read at the meeting of the Montreal Medico-Chirurgical Society, January 17th, 1913.
On these somewhat meagre symptoms I decided that the right thing to do was to clean out the left middle ear and mastoid and explore the neighbouring parts of the brain. Let me state here that when the boy had recovered I got from him an account of his disease that would have made the diagnosis much more clear. He told me that at the time of the attack, he had headache, nausea and vomiting, with extreme dizziness, and that this dizziness was present whenever he attempted to lift his head, until he became too weak to attempt to move. These symptoms would reduce the diagnosis to a question between cerebellar abscess and labyrinthine suppuration. The dilatation of the pupils would, under the circumstances, make cerebellar abscess almost certain. The nystagmus before the operation was away from the lesion, which suggests labyrinthine disease—although this symptom must not be absolutely relied on.

On March 16th I exposed the bone over the left mastoid region, which externally appeared normal. On removing the cortical bone, however, the whole mastoid process was found to be filled with a chole-steatomatous mass which was surrounded by and saturated with greenish pus. After cleaning out this chole-steatoma a radical tympano-mastoid exenteration was performed. It was found that there were two large defects in the inner table of the mastoid, so that about an inch of the lateral sinus was exposed in the postero superior region, while in the antero inferior region, between the lower part of the lateral sinus and the external semi-circular canal (Trautman's triangle), the cerebellum was exposed. The bone about this lower opening was very necrotic, and after removing some more of it one could see a small hole in the dura of the cerebellum from which a thin fluid was oozing. On enlarging this hole, a large cavity was entered from which at least two ounces of foul-smelling greenish pus escaped. This abscess cavity was found to be walled off from the healthy tissue by a firm capsule. The abscess cavity was gently irrigated and a drain of rubber-tubing introduced into it, after which the outer wound was dressed with gauze as usual.

By April 25th the opening into the cerebellum had closed completely and the patient left the hospital on May 12th, though there was still some discharge from the mastoid wound.

Since the operation the patient has gained over twenty-five pounds in weight, and feels and looks perfectly well, though there is still a slight discharge from the ear.
SILVER STYLE IN THE NASAL DUCT—REMOVAL AFTER FORTY YEARS

SOMETHING over a year ago, J. W., a man of fifty-four years of age, came to my clinic at the Montreal General Hospital on account of binocular cataract. Last summer I decided to operate on the left eye. On examining his lachrymal apparatus, which is done as a matter of routine before all cataract operations, I found that while the lower punctum and lid were normal in appearance, there was a peculiar hard mass in the site of the left lachrymal sac. At this juncture the patient volunteered the information that a metal style had been put into his tear canal in England when he was a lad about fourteen years of age. He felt sure, however, that the style had come out not long after it had been put in. An x-ray was taken—which showed that the style was still in situ—so I removed it and excised the sac on July 9th, 1912.

The upper part of the style, as you can see, seems quite unchanged by its forty years' burial, but the lower end where it projected into the nose is slightly eroded. The punctum and eye-lid, as I said above, looked quite normal, and no one could have said that any previous operation had been performed on canal or eyelid. I removed the style because I feared it might have pus about it, which might infect the aya when operated on for cataract, but as a matter of fact the head of the style was found to be imbedded in a mass of fibrous tissue which cut off all connexion between the lachrymal sac and the aya.

George H. Mathewson.

Montreal.

The report of the Cape Breton Hospital for Poor Insane for the year 1912 shows that thirty-four patients were admitted during the year, and on December 31st, 1912, there were ninety-eight patients in the hospital. The appropriation for 1912 was $18,500 and the expenditure $18,390.14.
Editorial

MEDICAL INSPECTION IN TORONTO SCHOOLS

The laity in Toronto is never really happy unless it is enjoying the sensations produced by a tempest in a teapot. The latest whirlwind has been caused by Commissioner Starr's action in placing a nominal fine against certain parents who refused to have their children's throats examined by a competent physician. These children had come under medical inspection in the schools and the parents had refused to procure the certificate of exemption required. Possibly the Commissioner was ill-advised in making these fines, although it is apparent that he acted honestly and with a strong desire to help the medical inspection, which all sensible people recognize as an excellent thing.

Reading between the lines in the numerous articles which have been published in the daily press, it is evident that in the majority of cases the parents recognize the benefits of the inspection system, and are glad to avail themselves of the advice given. There will always be certain people who will reject medical advice of any kind, and they will resent such efforts as those of Commissioner Starr with a vigour that will win them a great deal of misplaced sympathy.

Never before has it been so apparent that "Britons never, never, never shall be slaves." The arguments which apply in the discussion of compulsory vaccination do not exist here, and where there are honest differences of opinion regarding the benefits of removal of enlarged tonsils—as there seem to be—a magistrate who undertakes to enforce a doubtful law is bound to find himself in an unpleasant position.

In the meanwhile, children by the hundreds go to the hospitals to have their adenoids and diseased tonsils removed,
and the few who escape the guillotine are scarcely worth quarrelling about. No doubt the virtuous indignation of enraged parents and incensed physicians will subside in due course, and the city will move on to the next sensation.

GEORGE ALEXANDER GIBSON, M.D., D.Sc., LL.D.,
F.R.C.P.E., F.R.S.E.

BRITISH medicine north of the Tweed loses one of its brightest ornaments and most scholarly exponents in the premature death of Dr. G. A. Gibson, of Edinburgh, which took place in that city on January 18th. It is difficult to write either of his professional or private character, suffering as one is at the moment from a profound sense of personal loss. Not in one sphere alone will Gibson be missed; the Royal Infirmary of Edinburgh, where he worked for twenty-two years, will miss him, the Royal College of Physicians of Edinburgh mourns him who was for ten years its secretary and later vice-chairman of the governors of the medical school of the Royal Colleges; he will be missed in the mansions of the great; but he will be missed most of all in many a humble home in old Edinburgh where from one year's end to the other no sound was more cheering than Gibson's step on the crazy stair—"that'll be Dr. Gibson," and the sufferer sensibly brightened. "Gibson's visit was a ray of sunshine," some one has said. If we had been asked to name the man whom Scottish medicine at this hour could least well spare, there would have been no hesitancy in the answer—Gibson. Only fifty-eight years of age and not yet in receipt of all the honours which would have come to him (he was to have been president of the College of Physicians this winter), death has taken him; and science is the poorer, medicine the emptier, Scotland the sadder.

George Alexander Gibson was born in Perthshire, Scotland, in 1854. His father, a solicitor, had intended him for
the bar, but scientific medicine had marked him for her own. He was educated at Dollar Academy and at the universities of Glasgow and Edinburgh. It was science rather than medicine that first attracted his powerful mind, for in 1874 he graduated B.Sc. at the University of Edinburgh and later D.Sc., taking a geological subject for his thesis. He had already obtained the Falconer Memorial Fellowship in Geology. In 1876 he graduated M.B., C.M., and M.D. in 1881. In 1880 he became F.R.C.P.E. As a student he came under the influence of three great personalities in anatomy, surgery, and medicine, respectively—Professor, now Principal, Sir William Turner, Professor, later Lord, Lister and the late Dr. George Balfour or “heart Balfour” as he was known. Gibson demonstrated in anatomy and never lost his interest in that science; one of his most intimate friends was the late Professor Cunningham, F.R.S. Under Balfour, Gibson naturally turned to cardiology, and one of his earliest papers was on the time-relations of the cardiac cycle in man. In 1876 he was appointed a resident physician in the Edinburgh Royal Infirmary, and thereafter, travelling, he studied in London, Dublin, and Berlin. Dr. Gibson was prominently connected with the extra-mural school of medicine in Edinburgh, that nursery of many fine minds—and was successively tutor in clinical medicine, lecturer in materia medica, and lecturer on the principles and practice of medicine. In 1897 he became lecturer on clinical medicine in the Royal Infirmary. During these years Dr. Gibson travelled in France, Germany, Italy, and in America, gaining experience and making friends. Gibson was a great deal more than the successful general practitioner and consultant; he was a man of wide culture and varied reading and had collected a splendid library. His knowledge of French and German was intimate, his knowledge of the classics a real and working one. The writer remembers his coming into the library one morning just before going off by train to a consultation and, slipping the “Odes of Horace” into his pocket, he said: “There’s something there you don’t
get anywhere else.” Gibson probably knew more about the
history of medicine, especially in Italy and France, than any
other general practitioner of his time.

Cultured in the best sense of the word, not as the pedant
but as the man who can enjoy life, Gibson was a very pleasing
personality. He undoubtedly possessed a fine constitution
which enabled him to get through an amount of physical and
mental work impossible to one less splendidly endowed.
Eager, active, almost restless in body and mind, Gibson was
the much sought-after physician with time for everything,
from a meeting of the Town and Gown Association or of the
Royal Company of Archers, to reading a paper before the
Royal Society of Edinburgh or presiding over a section at a
great medical congress. His recreations were golf, curling,
and fishing. Dr. Gibson belonged to the Church of Scotland.
He has left a widow, a son, and a daughter.

In 1890, in conjunction with Dr. William Russell, of
Edinburgh, Dr. Gibson published his “Physical Diagnosis,
a guide to methods of clinical investigation”; and in 1892
appeared his learned monograph on “Cheyne-Stokes Respira-
tion,” the historical introduction to which is an invaluable
epitome. In 1898 there appeared his large work, “The
Diseases of the Heart and Aorta,” to be followed in 1904 by
his “Nervous Affections of the Heart, being the Morrison Lec-
tures for 1902-03.” This last mentioned volume is a monu-
ment of medical learning, the historical aspect of the subject
again figuring prominently; it was translated into German.
He was the editor of a “Text-book of Medicine.” Besides
making a study of cardiac conditions, Dr. Gibson was very
interested in the pituitary gland and its recent physiology;
he improved the sphygmomanometer.

For many years Dr. Gibson edited the Edinburgh Medical
Journal, and had filled such important examinerships as those
at Oxford and Glasgow. As might be expected, schools of
medicine other than his own recognized his worth; he was an
honorary M.D. of Dublin University, a F.R.C.P. of Ireland;
an honorary B.Sc. of Liverpool; an LL.D. of St. Andrew's University; an honorary B.Sc. of Harvard, U.S.A.; an LL.D. of McGill University, and "Correspondant étranger d'honneur de la Société de Thérapeutique de Paris."

Dr. Gibson had long been a Fellow of the Royal Society of Edinburgh, and had served on its council. He was also inspector of examinations in Ireland under the General Medical Council, and lieutenant-colonel of the General Hospital Territorial Forces. Only last August he delivered the Address in Medicine before the British Medical Association at its meeting in Liverpool. His "Life of Sir William Tennant Gairdner, K.C.B.," has only been published a few weeks. Seeing that Gibson's character and reputation were so exceptional, it seemed a most extraordinary thing that he was not elected to the Chair of the Practice of Physic in the University of Edinburgh on the death of Sir Thomas Grainger Stewart. The reason did not lie in any unsuitability or weakness on the part of Dr. Gibson. Gibson's characteristic of large heartedness was a fit complement to his large brainedness. Just as there was a breadth of view in his science and medicine, so there was a breeziness and refreshing breadth of view in all else he undertook. He was absolutely to be depended upon; sincere in his every relationship, he was sincere as a friend and straightforward as an opponent. He hated meanness and crookedness in any kind of dealing, as all really great minds do hate them. As fair a foe as ever fought when occasion compelled him, Gibson's genius was for making friends.

Dr. MacKenzie, writing in the Lancet of January 25th, 1913, concludes his tribute with these words, "His self-sacrificing disposition was almost proverbial, no one ever appealed to him in vain, and many a one could tell of infinite labour and trouble he has taken to help a friend in difficulties." The present writer can give one excellent example of what Dr. MacKenzie alludes to. On one occasion a meeting, the decision of which was of great moment to the writer, had
been called for an early hour on a Monday morning which made it very difficult to reach the place of meeting even from Edinburgh. But Dr. Gibson had been called on the Saturday to a consultation in the west of Scotland. The Sunday found him in a country town with no railway communication whatever with the place of meeting. To keep the appointment, Dr. Gibson motored through the night in winter from one side of Scotland to the other. The writer heard of this incident from some one else's lips. Dear Gibson; wise, loyal, joyous friend! Oh, that we might say anything but "farewell!"

COÖPERATION IN LONDON

THE strained relations between the Medical Department of the Western University and the Institute of Public Health have been adjusted for the present. The trouble arose from the complaint of the students that the Institute staff was not giving the students the necessary laboratory work, a complaint which was embodied by the students in a protest addressed to the medical faculty. It is claimed that the Institute was established by the Ontario government, mainly through the instrumentality of the medical faculty, for the promotion of medical education, as well as for the purposes of public health work, including the training of physicians for medical health officers. The former object does not seem to have met with the sympathy of the medical director of the Institute, and to that fact the medical faculty attributes the present dissatisfaction; while the Institute staff claim that there have been delays in completing the equipment of the Institute and that any inefficiency in the service to the students has been due to those delays.

Pending the occupancy of the Institute, the laboratory work has been conducted at the medical school up to the present. On the strength of the students' petition, the medical faculty appointed two of its former staff to conduct at the
school the practical laboratory work which it was claimed the Institute staff failed to provide. The faculty at the same time referred the complaints to the Board of Governors of the Western University, and this board now has directed that the Institute be put in readiness without further delay and that the medical students be furnished forthwith with ample laboratory instruction. The governors are determined that the Institute shall be made not only a public health utility, but also a valuable adjunct to the Medical School in providing that institution with instruction in laboratory subjects.

A FRESH VIEW

IN the January number of the Journal some well considered comment, based on reports received from a variety of sources, was published upon the conduct of the Academy of Medicine in Toronto in refusing admission to an applicant. This comment has since been considered by a special committee of the Academy. The result of their deliberations is contained in the following report, and they have accorded to the Journal the privilege of publishing it:

I. The editorial is not in accordance with the facts, and is not in the interest of either the Academy of Medicine, Toronto, or of the Canadian Medical Association.

II. The constitution and by-laws were adopted on the organization of the Academy, after due deliberation; accepted and, necessarily, signed by every Fellow before he could be admitted to the privilege of the Academy.

III. The election referred to in the editorial was carried out in strict accordance with the constitution.

IV. The objects for which the Academy was organized are clearly stated on page 7, article 2, as follows:—"The purpose of the Academy shall be the advancement of the art and science of medicine with its collateral branches; the promotion and maintenance of an efficient library and museum;
professional improvement; the cultivation of harmony and good feeling among its Fellows; and the promotion of the corporate influence of the profession in relation to the community."

V. There is not now, nor has there ever been, friction in the Academy between the Fellows who are members of the Medical Faculty and those who are not on the teaching staff.

VI. Dr. Reeve has not resigned his Fellowship in the Academy but continues, as heretofore, his interest in its affairs.

Readers who are sufficiently interested in the subject are invited to read again the editorial in the light which this report furnishes. They are asked to observe that the first part of the editorial, which appears to have given especial offence, is in the most general terms, and refers to all medical societies in general, not to any one in particular. It merely enumerates the principles by which they should be governed and the practices which they should avoid.

Grades in medicine of McGill University are now permitted to take the New York State Board examination. About six months ago, the Board made certain changes in its requirements—both as to college matriculation and the qualifications necessary for the degree. As biology is not included among the subjects required in the entrance examination at McGill, it was decided that graduates in medicine from this university were not eligible for the Board examinations. However, the matter has been reconsidered and a conference was recently held, at which were present representatives of the New York State Board and of McGill University. It was considered that as McGill gives a five year course in medicine, and as a four year course satisfies the requirements of the Board, the first year course in biology at McGill should be accepted by the Board as equivalent to matriculation biology.
The next annual meeting of the British Medical Association will be held at Brighton in July. This will be the eighty-first annual meeting of the association. The president-elect is Dr. W. Ainslie Hollis, consulting physician to the Sussex County Hospital.

The Canadian Pacific Railway has inaugurated a system of instruction in first-aid work, and a fully equipped car with instructors left Ottawa, January 17th. A complete course of instruction will be given to the men employed by the company, and they will be required to pass an examination in anatomy and physiology. In order to create an added interest in the work, competitions will be held at the different points. We are informed that two thousand men have already qualified in this branch of ambulance work.

The Canadian Medical Protective Association applied for incorporation in a bill which went through the private bills committee, February 11th. Dr. Chabot, M.P., explained that the objects of the organization are "to maintain and protect the honour and interests of its members; to encourage honourable practice and assist in the suppression and prosecution of unauthorized practice; to advise and assist members unjustly prosecuted and to foster the fraternal spirit." The incorporators are Drs. R. W. Powell, of Ottawa; J. O. Camirand, Sherbrooke; J. F. Argue and J. D. Courtenay, Ottawa; T. G. Roddick and E. G. Lachapelle, Montreal; Alex. Primrose and E. E. King, of Toronto. The bill came up for consideration in the House on February 24th, and nearly the whole day was spent upon it. A certain amount of opposition developed on account of the relation which the association might have towards medical practice not commonly approved by the profession, and upon the grounds of provincial jurisdiction. With some amendments covering these objections the bill was reported to take it place for third reading.
A prize consisting of a gold medal is offered by the American Laryngological Association for the best essay upon some subject relating to laryngology or rhinology, preference being given to essays offering new suggestions of practical value arising from original work. The competition is open to practitioners, in regular standing, of the United States and Canada, who are not members of the American Laryngological Association. The essays must be typewritten in English, and placed in the hands of the secretary before May 1st. The author's name and address with the title of his paper must be enclosed in a sealed envelope which will be opened after the award has been made. The successful essay will be published in the "Transactions of the Association," but it may also be given to any other journal for publication.

A general conference of the China Medical Missionary Association was held at Peking last January. The association is a purely advisory body, whose purpose is to unite all medical missionaries working in China and to aid them in their efforts, particularly in regard to medical education. Conferences are held annually at various centres; the general conference, however, only takes place once in three years. The association has undertaken the translation into Chinese and the publication of various medical works, among them, Gray's "Anatomy," Halliburton's "Physiology," Osler's "Medicine," Rose and Carless's "Surgery," and Caird and Cathcart's "Surgical Handbook." Dr. D. J. Evans's book on "Obstetrics" was translated into Chinese several years ago and has now gone into a second edition. The official organ of the association is the China Medical Journal, which is issued quarterly.

Some lack of harmony would appear to exist in certain places between the school authorities and the physician entrusted with the medical inspection of the children attend-
ing school. For instance, in South Vancouver, some friction has occurred. Objection has been made to the inspection of children in the class-room on the ground that, should a child be afflicted with disease, the other pupils would at once know of it. It has been suggested that the difficulty could be obviated if each child were made to pass singly before the medical examiner. The teachers in certain schools have objected to the examination of children in the class-room, and the question has arisen as to whether the medical examiner should report to the board direct or to the school inspector. The board was of the opinion that the report should be made to it, and that any interference on the part of the school inspector in matters concerning the medical examination of pupils would be unjustifiable.

A conference was held in Wellington, New Zealand, last November to consider the means of prevention of consumption. Between 1901 and 1910, 7,769 deaths occurred from tuberculosis in the dominion, an annual average of 776.9. In 1911, there were 738 deaths from the same cause. That is, one death in every eleven in New Zealand was due to tuberculosis, and it is estimated that there are at present about 2,800 persons, excluding children, who are totally, or partially, incapacitated for work because they are afflicted with the disease. Although the law requires that notification shall be made of all cases, this rule is not strictly enforced, and the Maoris are exempt altogether. New Zealand is unique among the civilized countries of the world in that there exists no national association for the prevention of tuberculosis. The objects of the recent conference were: to infuse new vigour into the campaign against consumption; to consider what legislative or administrative departments are lacking; to obtain the opinions of those actively employed in the treatment of the disease as to the forms of treatment to be adopted; and to obtain the views of members of the medi-
cal profession engaged in general practice as to what part they are prepared to take in the campaign.

Messrs. W. B. Saunders & Company, of Philadelphia and London, announce that they will publish shortly a new work on the history of medicine by Dr. Fielding H. Garrison, principal assistant librarian, Surgeon General's Office, and editor of the Index Medicus. The work will be comprised in one volume and will present in a concise form a complete history of medicine from the earliest times, touching on Egyptian, Sumerian, Oriental, and Greek medicine; the Byzantine, Mohammedan, Jewish, and Mediaeval periods; the Renaissance, the Revival of Learning, and the Reformation; and on through the seventeenth, eighteenth, nineteenth, and twentieth centuries, to the present day. Appendices will also be given treating of medical chronology, histories of important diseases, drugs, therapeutic procedures, surgical operations, and so on. The book will be illustrated and will contain many interesting biographies and bibliographical notes. A brief survey of the social and cultural phases of each period will be given, and the book promises to be an important addition to the medical literature.

The International Medical Congress will meet this year in London, for the first time in twenty-one years. Among the many features of interest will be the museum, which is being organized by a committee under the leadership of Professor A. Keith, of the Royal College of Surgeons. The museum will consist of exhibits illustrating the subjects which will be discussed in the various sections, together with such other material as the committee may deem of sufficient interest; it will be housed in the Imperial College of Science, South Kensington, and, if thought advisable, it will be kept open for a few days after the congress has ended. The honorary
secretary of the museum committee is H. W. Armit, Ravenhurst, Talbot Road, Wembley, and medical practitioners and scientists who are willing to place at the disposal of the committee material illustrative of recent advances in medical science, are requested to communicate with him. Expenses of transit will be defrayed and the exhibits insured against damage or loss, and returned in good condition. Exhibitors will be invited to hold demonstrations in the museum on their own specimens.

A second feature of unusual interest will be an exhibition of rare and curious objects relating to medicine, chemistry, pharmacy, and the allied sciences, which is being organized by Mr. Henry S. Wellcome. This will be one of the most interesting collections of historical medical objects ever displayed, and will include medical deities of barbaric and primitive races, amulets, talismans, and charms connected with the art of healing, and specimens of instruments used in every part of the world, while an attempt will be made to trace the evolution of the surgical instruments in use at the present day. Models of ancient pharmacies and laboratories, relics of the practice of alchemy, and specimens of ancient and unusual materia medica will also be shown.

Although we cannot assert that in every walk of life the remuneration is proportionate to the work accomplished, it is usually recognized that some semblance of balance must be maintained. In this connexion, it is of interest to note the case of the medical officer of health—at the moment in Ontario particularly. He must be a specialist in public health and sanitation and a man of judgement and administrative ability; among his numerous duties are the supervision of the water supply and of the food supply, the enforcement of sanitary and hygienic conditions, the control and, if possible, prevention of epidemics of infectious disease, the collection of vital statistics, the study of the causes of infant
mortality and the means of prevention, and so on. And in return for these various activities—which it is expected he shall perform faithfully and well—what is he offered? Take for example the case of Whitby. At a meeting of the city council, which took place January 20th, Dr. C. F. McGillivray was appointed medical officer of health at a salary of twenty-five dollars a year. A second applicant for the position was Dr. F. Warren, but as he had suggested verbally to members of the council that an annual salary of one hundred dollars might be acceptable, "the lower offer of Dr. McGillivray was accepted." We quote from the Whitby Gazette. Another case in point is that of Ingersoll. For some years the position of medical officer of health has been held by Dr. J. A. Neff, and, so far as we can gather, his duties have been performed to the satisfaction of all. Under the new regulations, a medical officer of health cannot be dismissed by the civic authorities unless some good "cause" is given, and the remuneration is to be one hundred dollars for the first thousand of population and fifty dollars for each additional thousand. Accordingly, Dr. Neff requested that his salary should be increased to at least two hundred dollars, claiming that in reality he was entitled to three hundred dollars. After some discussion, the council appointed Dr. Counter medical officer of health at a salary of fifty dollars a year. In truth, the amount is not excessive.
THE DIAGNOSIS OF SMALLPOX

TO THE EDITOR OF THE CANADIAN MEDICAL ASSOCIATION JOURNAL:

SIR,—The science of medicine and surgery has made such rapid strides within the last quarter of a century, that we are today, if we know our science, in but little doubt in reference to diagnosis, for, like the mathematician, we can prove our case.

In a doubtful case with difficulty in differentiation between typhoid fever and appendicitis, we flee to the Widal test, diazo reaction, or blood count. In former days, before science made her last leap on syphilis, we frequently, when in doubt, gave potassium iodide and obtained such marked results that we felt we had proved our case. The microscope, with the fine work of the pathologist and chemist, has brought us to not only practise our profession for a livelihood but to enjoy the science.

It is with this idea of accuracy in reference to the so-called epidemics throughout our country that I am led to ask publication of the following remarks in reference thereto. It has been the experience in New Brunswick that, even though the physician in charge of a case reported it as chicken-pox, such cases of smallpox have been quarantined by the health officer without further notice, and even though men with much experience in epidemics of smallpox, where the death rate has been large, have one after another given their opinion that the disease was chicken-pox after careful examination of the cases in quarantine as smallpox, nevertheless the health officer in New Brunswick—and I presume it is the same in other provinces—continues to quarantine these cases as smallpox. Theologians differ in their opinion, as also do lawyers and physicians, but when we have a way of proving our case as will be shown further on was done in the central New Brunswick epidemic, it seems to me a question for a scientific commission to take out of the hands of political appointees, who sometimes receive increased remuneration according to their activities in epidemic times.

In December's issue of THE CANADIAN MEDICAL ASSOCIATION JOURNAL, I noted with interest an article, written by Dr. Whitelaw, of Edmonton, on a series of smallpox cases with some remarks on diagnosis and vaccination, and not seeing any remarks on the death rate I have concluded that all of Dr. Whitelaw's cases recovered
irrespective of vaccination. A little farther on in his article he treats of the infectiousness in this way: "If smallpox were as easily contracted as is popularly supposed from air infection and from contact with articles in the room through which the patient may have passed, or in which he may have stood, sat, or slept, and if all the elaborate directions as to disinfection and quarantining enjoined by the board of health regulations, which, owing to conditions existing in many cases, can be but imperfectly carried out, were justified by actual experience, there would be after a lapse of time only two classes of cases in Edmonton,—first those protected by vaccination and, secondly, those who had become protected by contracting the disease itself without falling into the hands of the undertaker."

And so I am led to wonder how smallpox has so changed within the last fifteen or twenty years without any scientific research giving us reasons. When we look at statistics of previous epidemics, there has, till very recently, been a mortality of ten to fifty per cent., and often seventy-five per cent. has been recorded.

At St. John, New Brunswick, a few years ago, the death rate was twenty-three per cent., although considered a very mild epidemic, in a city which can boast of its well-qualified physicians and surgeons. Perhaps Dr. Whitelaw has not heard of the epidemic of what was taken for smallpox, carried from Canada to Barbadoes, where the health authorities, at an expense of more than seventy thousand dollars in house to house visitation, vaccination and quarantining, did not succeed in checking the disease at all and there were thousands of cases without a death.

Is it not a scientific fact that vaccination will check smallpox? If not, why vaccinate, if we get no mortality out of hundreds of cases, for there is some risk and much discomfort in vaccination itself? Is it not a scientific fact that vaccine will not take on an individual who has had smallpox? In Osler’s “Modern Medicine,” on page 303, we find the following: “Inoculation of calves with smallpox material, with proper care, produces a disease indistinguishable from primary or ‘spontaneous’ vacinia and giving the same protection against both smallpox and vaccination that natural cox-pox gives.”

A few years ago, we had in central New Brunswick an epidemic of so-called smallpox, and thousand of dollars were spent in such quarantining as one would judge from Dr. Whitelaw’s article was carried on in Alberta; there were no deaths, and the late Dr. Bayard, the father of the board of health of New Brunswick and its chairman
for forty years, and at the time of this epidemic still chairman, a man with a deep interest in the science of medicine, having had much experience in smallpox in the Old World and in that fearful epidemic which St. John faced about forty or forty-five years ago, wondering why there was no death rate in the hundreds of cases reported from central New Brunswick, wrote a request to vaccinate three cases which had been in quarantine for smallpox. This I did, selecting cases which physicians had seen covered with papules and scales from head to foot and showing at time of vaccination stains, or so-called scars, of vesicles: all three took. Another physician, while doing compulsory vaccination, vaccinated a man who had had this disease and been quarantined in a lumber camp a few months before in the province of Quebec, this also took. Dr. Bayard came from St. John into central New Brunswick to examine the result, and in writing reported the cases as successful vaccinations and therefore not smallpox.

In the many cases in the interior epidemic of which reference is made here, there was not one case, of the great number which I saw, in which the vesicles did not appear in crops, extending over many days, and in some cases they were covered from head to foot with vesicles and scabs at the same time, and yet not one vesicle was found to coalesce with another, and even in cases which were hideous to look at, in adults who had never been vaccinated, there was no secondary fever.

In an epidemic of smallpox in which the mortality was twenty-three per cent., a case of chicken-pox got into the smallpox hospital, where it contracted smallpox and died; yet Dr. Whitelaw tells us it is not a serious thing to mistake grippe or chicken-pox for smallpox.

Why has scarletina not ceased to be as contagious as it always has been? Why do we dread syphilis as much as ever? What has so changed the smallpox of Canada to such a mild non-contagious disease within the few years which have passed since the fearful Montreal epidemic?

Harry H. McNally

Fredericton, New Brunswick,
January 23rd, 1913
Book Reviews


To "Hirst's Obstetrics" we may well apply the formula, that a book which has reached its seventh edition has amply justified its existence. The first edition appeared in 1898, and seven editions in fifteen years is a remarkable record. Professor Hirst brought to his original work an experience of twelve years as consulting and attendant gynecologist and obstetrician in eight of the principal hospitals of Philadelphia. In addition he had engaged, during his whole professional career, in teaching medical students in clinics, hospitals, laboratories, and in the lecture-room. Since that time he has enlarged his experience enormously and the present book is the well-considered result. Certain alterations in the arrangement have been made. For example, the physiology of the process of generation is made to precede the pathology of it. Another innovation in this edition is the extension of the article on diseases of the breast; for, as the author observes, with a clinic of three or four thousand women a year the head of an obstetrical department has opportunities for acquiring experience in diagnosis, and skill in treatment, that no general surgeon can rival. But the main distinction of his book is that it includes the diseases of women and their treatment as a necessary part of obstetrics, on the ground that the consequences of child-bearing constitute the vast majority of diseases of women. Excepting in France, many of the best medical schools have dispensed with a separate department for teaching diseases of women to avoid unnecessary duplication, and the imperfection of teaching when the two subjects are separated. It is worthy of remark that during the last year McGill University has placed the two departments under one head. In these years
the book has grown to a volume of slightly over one thousand pages, and in it we note that mechanical excellence for which Messrs. Saunders' publications are distinguished.


This book is the outcome of lectures given to the students in the University of Chicago, and has now reached its third edition. The fresh features which we note are chapters on cholera, and typhoid fever, and a more extended reference to poliomyelitis, measles, typhus fever, and several plant diseases. The description of technical procedures in serum diagnosis has also been amplified. Without attempting to constitute itself a guide for laboratory work in bacteriology or to replace the assistance of a technical instructor, the book makes ample reference to laboratory methods. The present revision has made the book quite new, and all of the most modern procedures are either referred to or described in detail. The reference to the literature is ample and Professor Jordan demonstrates that he is closely in touch with the best that is being done in his special subject. Statistics are used with skill to prove the value of the various methods, especially of inoculation to prevent disease.

A Manual of Chemistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons, Baltimore; Emeritus Professor in the Maryland College of Pharmacy; and Daniel Base, Ph.D., Professor of Chemistry in the University of Maryland. New (tenth) edition, enlarged and thoroughly revised. Octavo, seven hundred and seventy-four pages, with eighty-two engravings and nine coloured plates, illustrating sixty-four of the most important chemical tests. Cloth, $3.00 net. Lea & Febiger, Philadelphia and New York, 1912.

Students of medicine, pharmacy, and dentistry will find in this book all the chemistry which can be learned from books, and much more besides. For many years this text-book has been the
companion of students, and it has always accomplished its object as set forth in the preface: "to furnish in concise form a clear presentation of the science, an intelligent discussion of those substances which are of interest to him, and a trustworthy guide to his work in the laboratory." If proof of this statement were needed, it may be mentioned that this is the tenth edition of the book. The amount of new material is quite large, and so important is it the revision was made none too soon. At the moment the book is the highest standard.


This book fulfils every expectation. It is what it purports to be, not a text-book or a treatise but a guide. It embodies the best practice in teaching of the Edinburgh school, that is, continual reference to the fact; and the author goes so far as to say that it would be better if a book on midwifery were not illustrated at all. The student would then be obliged to have recourse to specimens and sections, and so acquire distinct images rather than conceive mere phantoms and idola. The work is a new one and is dedicated to James Young Simpson, James Matthews Duncan, and Robert Lawson Tait, that trio of pioneers in this field of medicine. It is written in two parts. In the first a succinct account of midwifery is given, and to each chapter has been added instructions in practical work. In the second part notes have been added with a summary of new operations and of recent theories. The chapter on "Evolution in Obstetrics" is of especial value. For students who wish to distinguish between the verbal and the actual, this book will prove a trustworthy and entertaining guide. It is quite new in design and is really a work of art.


At the second triennial meeting of the association for the study of pellagra held in Columbia, October 3rd and 4th, several resolutions were passed, which are summarized by C. H. Lavinder,
in Public Health Reports, November 1st, 1912. The belief of the meeting was that the ultimate cause of pellagra is unknown; that no satisfactory evidence has ever been submitted to show that the disease is transmissible from one person to another; and that there is at present no known specific remedy. Within recent years an extraordinary amount of research has been done upon the disease without any conclusive result; but it has been discovered that it is much more widespread than was commonly believed. For a long time it was known to exist in Italy, Spain, Roumania, but it is only recently that cases have been discovered in the Shetland Islands, Fifeshire, and Aberdeen. The thorny must be abandoned that the disease is due to the employment of maize as food. Till the year 1905 the connexion between maize and pellagra was generally accepted, but in that year Dr. Louis W. Sambon asserted that it was a disease like malaria, or the sleeping sickness, caused by a parasite which was conveyed from one person to another by some blood sucking insect. From his investigations in Italy he discovered that pellagra was very local in its distribution and was confined to the neighbourhood of swift-flowing streams where he found a minute fly known as the simulium. He believes that this insect may be the transmitting medium, but the proof is not at all absolute, as the actual parasite has not been identified. The dictum of Professor Roberts is that the cause is unknown. The disease itself has been recognized in the medical literature of Italy since 1771, when Frapolli referred to it as "a disease among the people called pellagra." The name is of peasant origin and is composed of two words signifying "rough skin." The disease may be endemic in country communities and may suddenly break out in epidemic form in new areas. It is a disease of the country and does not attack dwellers in crowded cities. Women are more commonly affected than men. It may occur at any age. Dr. Roberts gives a most elaborate historical account of the disease in all countries, and estimates that in the United States alone there are at the present time ten thousand cases. The amount of material in the book is mazing, and if it does not very far advance our knowledge of the cause of the disease at least it gathers together all the information that is available. It is one of the most important monographs upon the subject, and illustrates the close attention which has been given to the disease in the United States. In the Southern States the disease is of great economic importance, and we are informed by Dr. George M. Niles, of Atlanta, that he has personally treated four hundred cases.

All surgeons are familiar with Professor Krause's publication, "Surgery of the Brain and Spinal Cord." The first volume was translated by Dr. Haubold; the second was translated by Dr. Thorek, who also translated the third volume, which has just been issued by the Rebman Company. The third volume is uniform with the previous ones, and has been prepared according to the same plan. It is made up of a series of plates, twenty-one in number, which contain various figures. Accompanying the plates is a "series of observations," fifty-one in number. The subjects considered are, neoplasms at the base of the skull, and of the Gasserian ganglion; intracranial suppurations including otitic abscesses of the brain; metastatic processes including carcinoma and abscesses; injuries of the brain; opening of the vertebral canal by laminectomy; tumours of the spinal membranes; meningitis; indurations of the spinal cord; intramedullary neoplasms; tuberculosis of the vertebral column; spinal paralysis in tuberculosis of the bodies of the vertebrae; and injuries of the spinal cord. This volume extends from page eight hundred and twenty-one to twelve hundred and one of the series. The whole book is a record of personal experience. For example, the author has to his credit one hundred and nine operations for neoplasms of the brain substance, and seventy extirpations of the Gasserian ganglion. The mortality is given in great detail, and makes a worse showing than one would expect from reading the results of other surgeons. But Professor Krause points out that only those results are of value which are based upon the whole experience of one operator, since surgeons who have had few and, perhaps, unsatisfactory results, do not feel inclined to bring them to the general notice. It is only by publishing the failures as well as the successes that a true estimate can be obtained. The method of the book is familiar to all surgeons. It gives with scientific precision the successive steps by which each operation is performed. It describes the symptoms in each individual case, and the results, whether favourable or unfavourable. Professor Krause opens up freely his store-house of experience to all his fellow-surgeons. It is at their disposal in this book.
THE PROSPECTIVE MOTHER. By J. MORRIS SLEMONS, Associate
Professor of Obstetrics, Johns Hopkins Hospital. Appleton
& Company, New York, $1.50 net.

To those familiar with obstetrical literature the author needs
no introduction, for he will be remembered as a pioneer in the in-
vestigation of the problems of the metabolism of pregnancy. In
addition, Dr. Slemons has had the advantage of a long association
with Professor Whitridge Williams and an extensive consultation
practice. How thoroughly he has made the most of his opportuni-
ties is best evidenced by the directness and simplicity of his book.
It will be welcomed, not only by the intelligent women about to
become mothers—for whom it is primarily intended—but also by
medical students and practitioners whose obstetrical work is so
limited that they are not kept in touch with all the possible compli-
cations of pregnancy. The broad truths regarding impregnation
and the development of the ovum are stated with the utmost sim-
licity and the bearing of these and various abnormal conditions
that may arise are clearly explained. For each complication the
cause is given and a simple remedy suggested, while such vexed
questions as the wearing of corsets, the amount of exercise, the
possibility of prenatal influences on the child, and similar questions,
receive full treatment. Not the least important chapter in the
book is that dealing with abortion in its various phases and giving
particular attention to the aspect of criminal abortion. The book
to be fully appreciated must be read, and it is heartily commended
to the medical profession for, since the introduction of chloroform in
labour, there are few greater services rendered the pregnant woman
than that done by Dr. Slemons in bringing out this book.

TREATISE ON TUMORS. By ARTHUR E. HERTZLER, M.D., PH.D.,
Associate Professor of Surgery in the University of Kansas.
Illustrated with five hundred and thirty-eight engravings
and eight plates. Lea & Febiger, Philadelphia and New
York, 1912.

The appearance of this book gives rise to the comment that an
extremely active school of medicine is arising in the middle portion
of the United States. Excellent publications come continually
from Mosby in St. Louis, and the University of Kansas affords
ample evidence of a useful activity. This "Treatise on Tumors" is
quite up to the standard in appearance and size. It is well printed,
as Lea & Febiger's books are, and extends to considerably over
seven hundred pages. Dr. Hertzler finds fault with the previous books which deal with the subject, on the ground that they are either "broadly clinical or entirely scientific," and he adds that "a proper comprehension of any tumour demands the application of both the scientific viewpoint and clinical observation." This sentence will serve to illustrate the literary form of the work. The author's aim has been to supply this end, and he has "thought best to place the chief emphasis upon the practical aspect of the subject." Accordingly, the clinical illustrations constitute the chief value of the work. These have been done by Messrs. Jones and Biggar, and are certainly admirable, especially those which are drawn from the living model. Seeing that Dr. Hertzler has deliberately made choice of the clinical aspect of tumours, it is scarcely fair to criticize his work on the scientific side, yet one is bound to remark that the chapter upon endotheliomata is quite out of accord with present views upon the subject. The illustrations are quite remarkable and are likely to find a permanent place in the literature of the subject.

**The Nutrition of the Infant. By Ralph Vincent, M.D.**

Fourth edition; illustrated; price, 10s. 6d. net. London: Baillière, Tindall & Cox, 1913.

Dr. Vincent's book has already gone to the fourth edition. In this one the chapters dealing with the bacteriology of milk and with the various forms of intestinal disorders have been rewritten. Books upon infant feeding take it for granted more and more that the source of supply is not the mother but the cow. In New York, according to Dr. Holt, three children out of every four born into the homes of the well-to-do classes must be fed artificially; maternal nursing is steadily diminishing; and "an educated mother who successfully nurses her own infant for six months is a phenomenon." Dr. Vincent bears similar testimony in respect of England, whereby, he says, the increasing inability of women to nurse their infants is widespread. Accordingly, a modern book upon the nutrition of the infant is, in large part, a treatise on dairying and concerns itself more with the cow than with the woman, or the child either. Dr. Vincent is director of the research laboratory in the London Infants' Hospital which has as an integral part of its equipment a farm at Sevenoaks. The description of this farm is most interesting and the methods employed for securing clean milk might well be copied by municipalities as well as by hospitals. By no process of manipulation can dirty milk be converted into clean milk. This book
suggests that the problem of infant feeding is much the same in all countries, and the methods do not differ greatly.

**Physiology of the Semicircular Canals and Their Relation to Seasickness.** By Joseph Byrne, A.M., M.D., LL.B. New York: J. T. Dougherty

The author's work is divided into general anatomical and physiological considerations, the physiology of the semicircular canals and seasickness. The anatomical section is very thoroughly dealt with, in fact, so minutely, that its value will only be appreciated by those directly interested in otology. It is interesting to note that in the section devoted to the physiology of the semicircular canals, the phenomena of nystagmus and the displacements of the head that occur in rotation, aural irrigations, and galvanism, applied to the mastoid areas, were observed by the author independently, and the mechanism involved in their production was studied and worked out before he had any information of the work done by Barany and Neumann. Upon the subject of seasickness the author devotes a great deal of space, which contains his own personal experiences in endeavouring to throw light upon this interesting subject, not only as to its causation, but its treatment. The work is so thoroughly interesting that a close perusal of it is necessary in order to appreciate its value as a contribution to this complex subject, and it is to be commended especially to those interested in the subject of otology.


Within the past few years we have noticed a large accession to medical literature coming from the middle west of the United States, and this book by Professor Rachford, of Cincinnati, is another indication of this general tendency. In all respects the works compare very favourably with the product of the eastern schools. The general remark may be made that in all these books the sections dealing with treatment are unusually generous. The present book is a volume of nearly eight hundred pages, and being published by Messrs. Appleton & Company, is up to the best standard of medical works. It contains six plates and one hundred and seven illustrations in the text, and all of them are singularly clear,
although some of them not unfamiliar. By all the tests which we have been able to apply, this book will hold its own as an adequate exponent of the diseases of children.


One approaches this book with great respect. It is one of the Oxford medical publications. Each article is written and signed by a person of authority; it covers a wide range of subjects; it contains over fourteen hundred pages with about ten hundred words to the page; it is having remarkable success amongst members of the medical profession; it is dedicated to Sir William Osler. When one has said this one has given merely the salient facts—it would be obviously impossible to consider the work in detail. The object of the editor has been to produce a practitioner's encyclopædia in which nothing of real importance to him in medicine, surgery, obstetrics, and allied subjects should be omitted, a book of a size and scope that he can, within a single volume, find reliable information simply and clearly set forth upon all subjects with which he may be called to deal in his daily work. It is stating nothing more than the exact truth to say that the editor has accomplished the task which he set before himself. The book is sure of a warm welcome wherever it comes to be known, and the present notice is intended as an aid towards that end.


The author of this book has brought to his task a complete equipment of experience in surgery and knowledge of the literature, and he has produced an extremely valuable work; valuable alike to the surgeon and to the dentist. For the dental student the chapters on surgical pathology and surgical principles will be found especially valuable. The knowledge of the subject is well co-
ordinated and it is illustrated by ample reference to actual conditions and operations. The illustrations in the text are three hundred and eighty-four in number, and cover a much wider procedure than is commonly applied to diseases of the mouth and jaws. Indeed the field of brain surgery is largely encroached upon, but no important condition in this area is overlooked. This book is a further illustration of the important place which the Mosby Company is achieving in medical publications.


The important chapter in this book is the one on arteriosclerosis in its relation to life insurance. The insurance examiner is usually the first to detect the condition, and his discovery is not usually received with favour either by the applicant or the agent. Dr. Warfield mentions several cases which are quite typical, namely, those of men in the prime of life, apparently in good health, who show an increased blood pressure. Whilst it is quite true that arteriosclerosis and hypertension are not the same thing, for insurance purposes they may be regarded as identical. The most careful companies now demand a reading of the blood pressure in all cases, and their experience shows that applicants who supply a reading above one hundred and sixty should be declined. Such a reading is almost invariably accompanied by a definite accentuation of the second sound of the heart. The advice of the author is sound, that a person over forty years of age should consult a physician as regularly as he consults his dentist. Arteriosclerosis is on the increase, especially in America, and the author does well to insist upon its prevalence. This is the second edition of the book and especial attention is given to the pathology and physiology of the condition; and the importance of increased blood pressure as a sign is given due prominence. As Dr. Thayer points out in the introduction, arteriosclerosis has come to mean many things, as "billiousness," "malaria," and "neuritis" did in the old days. It is well, therefore, that the word and the condition which it indicates should be subject to fresh scrutiny. This monograph brings within small compass all the important facts connected with this widespread condition. It comes to all, sooner or later, and it is well
that the attention of the profession should be directed continually to its importance. Treatment receives adequate mention, and the importance of exercise is duly insisted upon. It is the author's dictum that "among all the forms of exercise golf probably is the best."

AN INTRODUCTION TO THE STUDY OF INFECTION AND IMMUNITY, INCLUDING SERUM THERAPY, VACCINE THERAPY, CHEMOTHERAPY AND SERUM DIAGNOSIS. By CHARLES E. SIMON, M.D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore. Octavo, three hundred and one pages; illustrated. Cloth, $3.25, net. Lea & Febiger, Philadelphia and New York, 1912.

This book is a most timely one and already is being eagerly inquired for. It is intended as an introduction to the study of infection and immunity, and of the application of the principles underlying them to diagnosis and treatment. The science of immunology is a new one, and no matter how great the difficulty, the general practitioner must familiarize himself with it; to that end this book will be a great aid. It represents the best product of the Baltimore school, and the intricate subjects with which it deals are presented with the authority which rests in that quarter. The book may be taken as the last word which has been uttered up to the present time upon this new division of medicine.


In the preface one finds that "the aim of these volumes is to provide the general practitioner with a series of practical articles, in as concise a form as possible, describing the modern methods of dealing with all diseases and written by those who have special experience in the subject with which they deal." While consisting of four volumes, each contains an index to the whole work, thus affording a decided advantage over many other works issued in separate volumes. Volumes I and II comprise general medicine
and surgery; Volume III deals with special subjects; while Volume IV embraces gynaecology and obstetrics. The arrangement of topics is good, yet when one finds that the treatment of injuries—including those of bones, joints, head, etc., is introduced immediately after constitutional diseases, and is followed by a section on respiratory diseases, one feels like asking if the classification could not be improved upon. We think, too, that the discussion of the general principles of serum therapy and vaccine-therapy is best in one of the volumes on general medicine and surgery, instead of in that devoted to special subjects. To describe the intramuscular method of giving “606” without condemning it, is disappointing. Equally so is a discussion of the treatment of tetanus by antitoxic serum without any reference to the injection of this agent into the tissues about the original wound or into the nerve, or cord. To attempt a detailed review of the work is impossible in such a book notice as this. One may say, however, that the articles are concise, interesting, practical, the text well illustrated, the type clear, and the whole work a splendid “System of Treatment” for the general practitioner.

Diseases of the Ear. By William Milligan, M.D., Aurist and Laryngologist to the Royal Infirmary, Manchester, and Wyatt Wingrave, M.D., Pathologist to the Central Throat and Ear Hospital, London. Illustrated with 293 engravings and 6 coloured plates. Macmillan Company of Canada, Limited, Toronto, 1911.

The authors’ justification of this work on diseases of the ear is that greater attention is now being given to the subject by the senior student of medicine and the general practitioner. In the opinion of the reviewer, a greater one than this is noticeable, namely, the very lucid manner in which all the various diseases of the ear are treated, so that the work becomes valuable to those for whom it is written. In detail, it is clear, concise, and practical. Its value is, moreover, enhanced by the special attention which has been directed by emphasizing the application of pathological data to accurate diagnosis and treatment. The chapter upon the relation of diseases of the nose and naso-pharynx to those of the ear is especially commendable. The work is the combined result of experienced teachers, and therefore is admirably adapted to the needs of the general practitioner and the medical student.
In the present volume of this well-known series there are twenty-seven articles, six coloured plates, and fifty-five plates, charts, diagrams, and figures. Out of so large a number of articles it is obviously difficult to select those which would give a fair indication of the value of the book, but we would call especial attention to one, namely, that by Dr. Paul E. Bowers, in which he discusses the relation of prison life to the development of insanity among prisoners. Dr. Bowers is physician in charge of the Indiana hospital for insane criminals, and he has made a tabulation of twenty-six hundred and eighty-one consecutive admissions to that institution. The effect of his paper is to dissipate the idea that prison life in itself produces insanity. Indeed, he is inclined to the belief that prisoners are more immune from insanity than they would be if left at large. There is an admirable biography of Benjamin Rush, who graduated from Princeton College in 1760, written by Dr. Thomas W. Harvey. These volumes must be especially welcome to every practitioner.


This book is of real value, not only to hospital surgeons but to practitioners who are far removed from the facilities which an institution provides. The average graduate is extraordinarily ignorant of the advantages of local anaesthesia and the means by which it can be secured. As a result, he resorts to general anaesthesia, or neglects cases which require surgical treatment. Local anaesthesia has a technique of its own, which must be learned, and this book will be a help towards that end.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


**Flatulence and Shock.** By F. G. Crookshank, M.D. (Lond.), M.R.C.P. Price, 2s. net. London: H. K. Lewis, 1912.


**Proceedings of the Royal Society of Medicine, Vol. VI, No. 1, November, 1912.** Price, 7s. 6d. net. London: Longmans, Green and Company, 1912.


The third annual conference of the Public Health Association will be held in Regina next August.
Men and Books

By Sir William Osler, M.D., F.R.S.

XIX. Robert Fletcher. Any time during the past twenty-five years special visitors to the great medical library in Washington have been received in a room next to that of the principal librarian, and have had their wants and wishes attended to by a courtly and learned man who has just passed away in his ninetieth year. Surrounded by books of reference, volumes of the Index Catalogue, tables strewn with proof sheets and the newest journals, Dr. Robert Fletcher looked like a student of the old days. But he was more—he had two essential qualities of a great librarian—kindliness of manner, and a genuine interest in books. With Dr. John Billings, and the successive Surgeons-General, he has had an important share in two of the greatest bibliographical works of modern times, the Index Catalogue and the Index Medicus. But first a word or two of biography.

Born in Bristol, March 6th, 1823, the son of an accountant, after a few years at the Bristol Medical School, Dr. Fletcher went to the London Hospital, and in 1844 became a member of the Royal College of Surgeons. In 1847 he went to the United States and settled in Cincinnati, where he practised medicine for some years. On the outbreak of the Civil War he joined the 1st Regiment of Ohio Volunteers, served through the war and was breveted lieutenant-colonel, and afterwards colonel, for faithful and meritorious service. In 1871 he was ordered to Washington and was at first attached to the Provost-marshal’s office, and took part in the preparation in 1875 of the volumes of Anthropometric Statistics. In 1876 he was transferred to the Surgeon-general’s Library. Here he became associated with Dr. John Billings, who had already begun the preparation of the famous Index Catalogue. Nothing comparable with this colossal work had ever been undertaken before in the history of the profession. Not only is it a printed catalogue of the books in the library, but it is an index of all the journal articles. Since 1880 thirty-two volumes have been published, each containing nearly a thousand pages and the total sum of 286,255 book titles, and 1,006,355 journal articles. Not so much the vaulting ambition that promoted the Index excites our
wonder, as that men could be found with the energy and persever- 
ance year by year to carry it out. But in Dr. John Billings, no 
ordinary mortal, are combined tenacity of purpose, good judg- 
ment, and painstaking accuracy. He was fortunate to secure 
as his lieutenant Dr. Fletcher, and, in the preface to the first 
volume, acknowledged specially his valuable assistance, without 
which the work could not have been carried on. After Dr. Billings' 
resignation the brunt of the work fell on Dr. Fletcher.

As a book of reference the Index Catalogue is of incalculable 
value, and not enough used by the profession. Any one in doubt 
about an obscure case, or if a biographical or bibliographical refer- 
ence is needed, has only to turn up a volume in one or other of the 
series, and the chances are a hundred to one that he will find helpful 
information. And a remarkable feature is its accuracy. It is the 
rarest occurrence to find typographical or other errors.

In 1879 Dr. Billings began the publication of the Index Medicus 
with Dr. Fletcher as his co-editor, and for the last nine years Dr. 
Fletcher has been editor-in-chief.

After the organization of the Johns Hopkins Medical School, 
we asked Dr. Fletcher to give lectures on Medical Jurisprudence, 
a subject in which he was greatly interested. He also took part in 
the organization of the Historical Club at the hospital, and in this 
way, year by year, we learned to know him well, and to appreciate 
his delightful personality.

One of two things happens after sixty, when old age takes a 
fellow by the hand. Either the rascal takes charge as general 
factotum, and you are in his grip body and soul; or you take him 
by the neck at the first encounter, and after a good shaking make 
him go your way. This Dr. Fletcher did so successfully that with 
all that should accompany old age, he carried on his work faithfully 
to the very end, reading proofs to within a few days of his death. 
Of few men could it be said more truly, "He saw life steadily 
and saw it whole." As his friend and collaborator, Dr. Garrison 
wrote me: "Even on his grey days his wonderful will-power and 
stoicism are something to command admiration. You have 
probably heard his favourite 'argumentum ad baculum' for any 
bodily complaint—'treat it with contempt.'" And this is the best 
lesson of his long and useful life.
Res Judicatæ

ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS

This form of treatment is not new, it was first suggested, apparently, by James Carson, in England, who lived about 1840, but its employment in a scientific way is to be credited to the Italian Forlanini, who, as far back as 1882, began to use it. In 1898, Dr. Murphy of Chicago, made a valuable contribution to the subject, but it was not until the last few years that the method gained adherents to any extent. At present there seems to be a wave of enthusiasm in its favour, which has spread from Germany and Switzerland to England and America. The rationale of the treatment lies, of course, in setting the affected lung at rest by compressing it as much as possible. It is claimed that the good effects, which are undoubtedly seen not infrequently, are due to the lessening of circulation in the diseased areas, to the consequent lessening of toxic absorption from the lymph, to the compression of cavities, so that the constant centrifugal force of inspiration, which tends to keep open the walls of these cavities, is abolished, and finally, perhaps chiefly, to the arrest of lung movements, giving that physical rest which is so necessary in the treatment of all forms of tuberculosis. It is the belief of Bier, of Berlin, that the compression of the lung induces a passive venous hyperæmia, and that this, as in other parts of the body, promotes fibrosis. Experiments of Tiegel, published last year, in which the pulmonary veins were narrowed so as to induce venous congestion, afford some support to this view.

It is clear that the indications for the establishment of an extensive pneumothorax must be carefully established. The operation is always followed by compensatory overwork on the other side. Consequently the first indication to be met is that the other lung should be sufficiently sound to bear the strain, otherwise an acute process may be set up on the unaffected side, or an old process lighted into activity. While at first it was considered necessary that there should be practically no disease in the other lung, it is now recognized that this indication need not be so narrowly set. A patch of trouble, if not extensive, and apparently arrested,
offers no bar to the treatment. On the other hand, as regards the more affected lung, the indications may be said to be, putting it briefly, chronic ulcerative tuberculosis, particularly with cavitation showing no tendency to heal. In general the severer cases have been chosen which have resisted ordinary treatment, and yet the process must be of a chronic nature; acute or subacute inflammatory, infiltrative processes offer an element of danger, in the sense of their being liable to be increased in activity by the operation. There are, nevertheless, many cases without cavities of any size, and yet of a chronic type, in which the lung may be compared to marshy soil; there is a tendency to miliary destruction combined with areas of fibrosis. At Saranac Lake, where I had several opportunities of talking over the question with Dr. Trudeau, Dr. Baldwin, Dr. Brown, and others, they were inclined to include such cases as being favourable for the injections. Recurring haemorrhages offer a strong indication for it. The compression of the lung seems to stop these with a considerable degree of certainty. Adhesions offer no contra-indication, but, if extensive, they are apt to prevent proper collapse of the lung, and consequently to lessen the good effects that might otherwise result from it. It has been found that many of the adhesions commonly existing in tuberculosis can be stretched, or broken, by careful distention with the gas, and a case in which it seemed at first hopeless to attempt gas injections, has not infrequently, by dint of gradually increasing the amount of gas injected, given ultimately a very good result.

The good effects of the injection are seen chiefly in the lessening or disappearance of fever, in the slowing of the pulse, in the very considerable diminution, amounting often to a disappearance, of the sputum, and in an increased sense of well-being. It is now generally recognized that the pneumothorax must be maintained for long periods of time before one may speak of cure. An average of one and a half to two years is generally considered advisable. In one patient of Spengler's it was kept up for seven years, and when finally allowed to disappear, the lung even then expanded normally. In two patients of Forlaninini's the lung was kept compressed on one side for about two years, with cure; subsequently the other side became diseased, and Forlaninini did not hesitate to apply the pneumothorax treatment to this side also, relying upon the first side, now cured, to carry on the work. In both cases the ultimate result was excellent on both sides.

As to statistics, while the treatment has been extensively used only within recent years, it is becoming more and more evident that
the method, in carefully chosen cases, is being abundantly justified by its results. It is clear, of course, that statistics in such a disease as this, of so protean a variety in its course, must be very carefully sifted. In 1910 Brauer reported upon forty cases, and the result was in 45 per cent. very good, in 17.5 per cent. merely good, in 15 per cent. sufficient to justify the use of the method, and in 15 per cent. insufficient to justify it, while 7.5 per cent. died. Saugmann reports thirty-five moderately severe cases. Of these the bacilli disappeared entirely in eighteen; five were completely "cured" or arrested (the intervals running from four months to three and a half years), three were free of symptoms, but still under treatment; ten were definitely improved, while four died. In a recent article by Lucius Spengler, of Davos, upon his "permanently arrested" cases (Dauererfolge), taking into consideration all his patients up to August, 1910, and taking only the cases in which pneumothorax treatment had been discontinued nine months previously, requiring also as conditions of cure that there should be no fever, nor cough, nor sputum, or if sputum in a few cases, that it should be free of bacilli; and that all patients should be fully able to work, I find his figures as follows: The number of patients fulfilling these conditions was fifteen. Of these, twelve gave at the beginning a very grave prognosis, and three a bad prognosis. In seven the pneumothorax was right-sided, in eight left-sided. The length of treatment was in one case two months, in one case five months, in six cases seven and a half to ten months, in three cases ten to sixteen months, and in four, eighteen to twenty-four months. The lapse of time since the pneumothorax disappeared varied from nine months to four years. Spengler concludes with the remark that such results ought to give proof of the curability, even of desperate cases, by means of artificial pneumothorax.

The Technique of the Injection.* There is no need of costly or complicated apparatus. Perhaps the manometer is absolutely necessary. This gives the one sure indication that the point of the needle lies in the pleural cavity and not in the lung, or in adhesions, or outside the chest altogether. The ordinary respiratory variations of intrapleural pressure are immediately recorded in the rise and fall of the coloured fluid in the manometer; not until this is seen, should the nitrogen gas be allowed to flow into the chest. Perhaps the most convenient and the safest needle is the one devised

*The interested reader is referred to the article of Robinson and Floyd (Archives of Internal Medicine, April, 1912), in which the details of technique are more fully set forth.
by Floyd of Boston.* The nitrogen can be made from the appropriate chemicals, but it is more convenient to buy it ready made in tanks. Two two-litre graduates are used, one of which is filled with pyrogallic acid solution, to take up any trace of oxygen that may get in. The two bottles are connected by rubber tubing and have close-fitting rubber corks. From the tank, nitrogen is allowed to flow in under pressure, displacing as it enters the solution into the other bottle. This other bottle is used as the source of pressure, and the pressure amounts to a column of water representing in height the difference between the levels of the solution in the one and the other, amounting to from five to fifteen or twenty centimetres. As the gas runs into the chest the solution crosses from one bottle to the other and the number of c.c. of gas is read off on the side of the bottle. It has been found wise not to put in, at the first injection, more than four hundred to six hundred c.c. of gas. Later ten or twelve hundred may be sent in without fear of trouble. But naturally one should always stop if the patient complains of any pain or dyspnea. I think it wise that, where possible, the patients should be in hospital for at least the first two or three weeks of their treatment, in order that they may be kept from undue exercise, and particularly that the result obtained may be controlled under the x-rays, for it would seem that unless one gets a fairly complete collapse of the lung, treatment by this method is apt to be insufficient, and this collapse can only be correctly estimated by an x-ray photograph.

E. W. A.

*To be obtained of Codman and Shurtleff, surgical instrument makers, Boston.

It would appear that the directors of the imperial post-office in Berlin have come to see the error of their ways and are even anxious to make amends. For some time past a regulation has been in force whereby women employees in the postal service of the German capital have been unable to consult a physician of their own sex, save by special order. Now, however, all this is changed, and a woman doctor has been officially appointed whose duty it is to give professional services to any woman employee who may require them.
Retrospect of Surgery

PYELONEPHRITIS AND THE PYELITIS OF PREGNANCY

THE place which tuberculosis of the kidney has occupied on the surgical horizon during the last five or ten years is being rapidly filled by that of the subject of pyelonephritis in general, and more especially of pyelonephritis of ætiology other than tuberculous. This is not because of the lessened importance or incidence of tuberculosis, but for the reason that urological surgery at least has recognized its importance and to a large extent digested the facts of its diagnosis and treatment. While other pyelonephritides, such as that caused by stone, have long been recognized, it is not so long since that type, fairly exemplified in the so-called pyelitis of pregnancy, and till recently ill-defined and ill-described, has forced itself on the clinical conscience. It is this type which is looming large in the urological literature of to-day. It presents itself as an acute or a chronic infection involving not only the pelvis of one or both kidneys, but almost invariably including the parenchyma. The commonest infecting organism is the bacillus coli, but other bacteria such as staphylococcus and gonococcus occur. It may resolve entirely, leaving an apparently undamaged kidney, or it may persist indefinitely, and it may evidence itself as an acute illness or remain as a simple pyuria.

A recent review of the literature dealing with the ætiology, symptomatology, diagnosis, prognosis, and therapy of these conditions, brings up for answer certain questions.

First, regarding the ætiology: 1. What is the source and nature of infection? Do the bacteria reach the kidney through the blood or lymph stream or do they ascend the ureter from the bladder and so cause infection?

2. Are there contributing factors? 3. What bacteria are responsible?

The route of infection is not a settled matter. Probably some cases are infected from the blood and lymph stream, others by an ascending infection. The greater incidence of the condition in women, where owing to the short urethra a cystitis is of commoner occurrence, is perhaps the strongest argument for the latter route; while the analogy of blood and lymph borne infection as it obtains
in tuberculosis of these organs, and such evidence as is supplied by occasional blood cultures, or the simultaneous occurrence of thromboses, point as strongly in the opposite direction. Experimental work, such as that of Frank, would show a close connexion between the lymphatics of the larger bowel and kidney, while Bauereisen has shown a lymph stream from bladder to kidney about the ureter.

Whatever the path and whatever the infecting organism, there exists a remarkable unanimity of opinion that there is some other factor than a simple bacteriuria. This is exemplified in the pyelitis of pregnancy, where a bacteriuria may exist for some time without giving rise to symptoms, but let some interference with the urinary flow occur—some obstruction to the drainage of one kidney—a urinary stasis and an invasion of that kidney, with symptoms, immediately occur. What may bring about the obstruction is not always clear. It is possibly a gravid uterus or other pressure on the ureter from without, some abnormal blood vessel which acts as a band over which the ureter kinks itself, a stricture of the ureter, a movable or floating kidney with a resulting kink of the ureter; but that some interference with the free flow of urine is present is the opinion of those best qualified to think so.

Mirabeau has classified these cases according to the infecting organism, gonococcus type, pyogenic type, bacillus coli type, and tuberculosis type. Storckl would classify them according to the obstruction: (1) Mild, a simple dilatation of the ureter without infection, a hydro-ureter. (2) Moderate, the same as type 1 but infected, as evidenced by pyuria, a pyelonephritis. (3) Severe, a pyonephrosis. A study of these two classifications should give a correct idea of the probable aetiology.

The pathological picture varies from a dilated pelvis without infection to a pyonephrosis, the common type being a slightly dilated pelvis filled with purulent urine and a kidney with many small abscesses throughout, often most marked beneath the capsule. The symptoms are those of an acute infection, varying according to the infecting organism and the degree of obstruction. The most important sign is pyuria, and the onset is almost invariably marked by symptoms referable to the bladder alone.

The prognosis likewise will depend upon one's ability to improve the drainage of the involved portion of the urinary tract. Many cases recover entirely; others are never quite the same; and a persistent bacteriuria, with or without pus, but without marked symptoms, is not uncommon.

Treatment should be conservative at first, and only in case of
failure should recourse be had to such operations as nephrectomy. The principal means at one's disposal are posture, plentiful use of fluids, urinary antiseptics, lavage of the renal pelvis, and vaccines, which should be autogenous. All are useful, none is infallible. Recently Koll has tried the systemic and local use of aluminum subacetate in those conditions due to bacillus coli, with very encouraging results.

In the past these cases undoubtedly have frequently figured as cystitis, and it is only now that we are learning that cystitis, i.e., primary cystitis, is a rare disease, while symptomatic cystitis or cystitis secondary to disease elsewhere is a common one. In no case has this lesson been pressed home to observing men better than in the case of tuberculosis of the genito-urinary system and nowhere is that lesson better repeated than in such instances as those to which this review refers.


R. P. Campbell.

The Vancouver hospital board decided, at a meeting held October 29th, to request the municipalities of South Vancouver, Point Grey, and Burnaby, to give some financial assistance to the hospital in return for the treatment of patients belonging to these municipalities. The request has not received favourable consideration as yet. The municipal council of Point Grey met on the afternoon of December 28th, and the matter was discussed. It was considered by some of those present that, if a contribution were made, Point Grey should be represented on the hospital board and an agreement made whereby the Vancouver General Hospital should undertake to accept all patients from Point Grey, including cases of infectious disease. The matter was left over for consideration by the new council for 1913. In the case of Burnaby, the council declined to accept any responsibility, on the ground that none of the patients had been sent to the hospital by order of the council. We have not been informed of any action taken by South Vancouver in the matter, but it would appear that the lack of hospital accommodation in that municipality is keenly felt.
Obituary

DR. THOMAS A. MCDougall, of London, Ontario, died suddenly in the forty-sixth year of his age. Dr. McDougall had not been well for some time, and dropped dead as he was getting up after taking a short rest.

DR. Chauncey E. Coke died at Winnipeg, February 7th, in the forty-third year of his age. Dr. Coke was born in Watford, Ontario, and graduated in 1898 from Trinity College, Toronto. He then went to Manitoba, where he taught for a number of years, and for the last seven years he practised his profession at Beausejour, Manitoba. Dr. Coke also studied at the universities of Edinburgh and Glasgow.

News

MARITIME PROVINCES

The establishment of a tuberculosis hospital at Halifax is now engaging the attention of the city council. An unoccupied building in the south end of the city has been granted as a hospital, but objections to this were made by the residents and the resolution rescinded. Several suggestions have been made but the councillors have been unable to reach a decision; the matter therefore has been referred to a committee for further consideration.

Three hundred and eight patients were treated in the Hotel Dieu at Chatham, New Brunswick, during the year 1912; twenty operations were performed and nine deaths occurred. At the Fredericton Hospital three hundred and five patients were treated.

At the county council meeting, which took place January 23rd, the annual grant of two thousand dollars was made to the Moncton Hospital. An additional grant of one thousand dollars, however, was refused. Improvements and extensions were made to the hospital last year and an x-ray apparatus installed. This involved
a large expenditure and the financial statement of the board shows a deficit of four thousand eight hundred dollars.

Unusual interest has centred round the hospital question at Sydney for some time past. Better hospital facilities are now needed and, to quote from the report of the medical health officer, "Sydney requires a fire-proof, concrete or brick building of fifty beds, well-equipped in every respect, with a contagious annex of ten beds, costing in all at least $55,000." Since 1901 there appears to have been some difference of opinion concerning the maintenance of the hospital. The matter was brought up before council in May, 1901, and later in the year it was decided that a yearly grant of three hundred dollars should be made by the city to the Dominion Iron and Steel Company. This money was not paid, however, and, in 1906, the city solicitor gave a legal opinion to the effect that the grant was illegal and that the city had no power to make it. No definite action was taken until 1909, when $860 was paid to the Steel Company in settlement of all claims to date. In 1910 and in 1911 the $300 was paid. The question at issue is whether or not should the city of Sydney continue to pay the $300 grant to the Dominion Iron and Steel Company's hospital.

The fees charged at the Pictou Hospital have been increased from $3.50 to $5.00 a week for public ward patients, and from $8.00 to $10.00 a week for private patients. The increased charge to take effect from the first of the present month.

It is probable that, during the present session, provision will be made by the New Brunswick Legislature for the erection of a number of hospitals for the treatment of advanced cases of tuberculosis and for the appointment of a trained medical examiner, whose duty it will be to visit the various counties to conduct examinations and to give instruction in connexion with the prevention of this disease. He will be assisted by a staff of nurses and a system of county clinics will be inaugurated.

The representatives of the Anti-tuberculosis League met the committee of the Halifax city council on February 6th, when the question of the tuberculosis hospital came up for discussion. The committee suggested that the sanatorium be placed between the Tracoma Hospital and the Smallpox Hospital on a plot of five acres to be secured by the city and given to the trustees of the League,
the ground, if used for any purpose other than the erection of a tuberculosis hospital, to revert to the city. It was proposed also that the city should contribute $1,000 towards the cost of building a ten thousand dollar sanatorium and should make an annual grant of $500 towards the maintenance of the proposed institution. If the city will grant $1,000, the League is prepared to subscribe $5,000; and it is thought that $2,000 could be secured from the provincial government, $500 from the county of Halifax, and $1,500 by private subscription.

The first annual report of the St. Boniface Hospital states that, during 1912, 6,284 patients were admitted to the hospital, and the total number of patients treated was 6,527; of these 6,024 were discharged and 243 died.

Several cases of diphtheria have occurred in Halifax during the last few weeks.

ONTARIO

A course of lectures has been given at the Canadian Military Institute by the Toronto Branch Association of the Militia Medical Officers. The subject of the first lecture, which was given by Lieutenant-Colonel J. A. Grant, on January 29th, was "The medical service at Magersfontein." On February 6th, Lieutenant-Colonel A. H. Macdonnell spoke on "The infantry division in attack," and on February 13th, Major J. A. Shaw chose as his subject, "Transport and supply, and their relation to the medical service in the field." On each occasion the lectures were followed by an interesting discussion.

The medical officer of health for Petrolea states in his annual report that, during 1912, sixty-nine births and fifty-four deaths occurred in the town. The general health of the citizens was particularly good, and the only cases of contagious disease which occurred were fifteen cases of measles and one of scarlet fever; in addition, two cases of tuberculosis were reported.

At a meeting of the Hamilton Board of Control on January 30th, a deputation asked that $25,000 be granted by the city to the Infants' Home and that the Jeannette Lewis fund be placed at the disposal of the hospital committee. They also requested that the site already chosen, near the General Hospital, be abandoned for a
site in the western part of the city, where the children would be able to get fresh air and enjoy healthful surroundings. The proposed hospital would only accommodate thirty-five patients and this the deputation considered was not enough; they were of the opinion that provision should be made for at least sixty children. The matter was again taken up on February 8th. Mr. T. H. Pratt, chairman of the hospital board, strongly opposed the suggestion, stating that he did not consider it right to use money, which had been provided for the hospital which had been commenced, for another hospital. It was decided that a committee should see Miss Lewis and should ask her to join the other ladies who are interested in the matter in an effort to collect the necessary funds for a hospital to be built in the west end and to be known as the John Patterson Memorial Sick Children's Hospital. At first this hospital would be managed by a board of ladies, and, later on, might be taken over by the general hospital board, who would then use their children's hospital as an annex to the General Hospital.

The Port Hope Hospital was formally opened on Wednesday, January 15th.

Dr. Robert Lyle Sanderson, who for many years has been the medical officer of health for Sparta, has resigned on account of ill-health and advanced years. He is succeeded by Dr. Shannon.

Smallpox is so prevalent in Waterloo that it has been necessary to order the compulsory vaccination of every resident who has not been vaccinated during the last seven years. As an additional precaution, all the schools have been closed.

A committee has been formed to consider the advisability of building a hospital at Walkerville.

The death rate in Lindsay for 1912 was 11.7 per thousand, and the town was exceptionally free from contagious disease throughout the year.

The smallpox epidemic is over in Hamilton. No fresh cases have occurred for some weeks.

Several cases of smallpox have been reported at Niagara Falls.
The tuberculosis hospital at Brantford is almost completed. The cost of construction and equipment has been about twenty-five thousand dollars.

A psychiatric clinic is to be established in connexion with the new General Hospital at Toronto. The site will be provided and the institution maintained by the city, but the building will be erected by the provincial government.

A serious epidemic of a malignant form of measles with diphtheria has broken out in the Toronto Infants' Home. The disease developed in a child after admission to the home and rapidly spread. The situation was rendered all the more difficult as the home was overcrowded and, owing to financial stress, deficient in the most improved sanitary arrangements. Twenty-five deaths have occurred and one member of the staff has contracted the disease.

Application is to be made to the Legislature by the Toronto Board of Health for permission to license lodging-houses in cities of over one hundred thousand population and to limit the number of inmates in each. In one instance, an inspection of lodging-houses revealed the fact that five hundred and thirty-nine men were crowded into nine houses.

It is proposed to establish a Consumptive Preventorium in Toronto. The necessary property has been secured and a request has been made that a civic grant be given for this purpose. The intention is to establish a Home for children who otherwise would be exposed to the dangers of a tuberculosis environment, and to ensure their getting plenty of fresh air and good nourishment.

In his report, Dr. Bruce Smith, the inspector of hospitals and charities, speaks very highly of the Toronto Hospital for Sick Children. Some additions are now being made to the hospital which will increase materially the accommodation. At present the hospital contains two hundred beds, and a further one hundred and fifty are provided at the Lakeside Home for Children which is open during the summer. In November last there were sixty-eight boys and forty-six girls in hospital, of whom seventy-one were receiving free treatment. The daily cost of maintenance during the year was $1.98 for each patient, the total expenditure for maintenance amounting to $104,478.
In his annual report, Dr. H. O. Howitt, the medical health officer of Guelph, gives the following figures in speaking of contagious disease: there were reported last year, 63 cases of diphtheria; 15 of scarlet fever, 4 of measles; and 15 of chicken-pox. Dr. Howitt recommends that, in cases where patients honestly believe vaccination to be dangerous, it should not be enforced, except when smallpox is known to be present in the city.

At the annual meeting of the Conservation Commission, held at Ottawa, January 21st, it was suggested by Dr. C. A. Hodgetts that a national housing and town planning congress should be held in Ottawa as soon as possible, with a view to stimulating better housing and town planning. He also spoke of the need of securing uniform statistics concerning births, deaths, and marriages in the various provinces of the Dominion.

A surgical wing is to be added to the Oshawa Hospital. The estimated cost is $10,000, which amount has been given by Mr. and Mrs. G. H. Pedlar.

Dr. Williamson, the medical officer of health at Kingston, in his annual report contrasts the number of cases of infectious disease which occurred in Kingston during the years 1911 and 1912, and is able to show a decrease in the number of cases of typhoid, diphtheria, and scarlet fever. Means are being taken to ensure a better water supply, and, as soon as it is possible to do so, a thorough examination of the intake pipe is to be made.

Dr. E. J. Foster, Dr. R. E. Johnson, and Dr. M. E. Reid, of Toronto, have been elected members of the Royal College of Surgeons.

At a recent meeting of the Pharmacy Council for Ontario, a discussion arose concerning the employment in hospitals of unqualified dispensers. Several complaints have been made to this effect, and a letter has been sent by the registrar of the college to the superintendents of all hospitals throughout the province, bringing to their attention the fact that the Pharmacy Act requires that no one, other than a qualified chemist or physician, shall dispense drugs, medicines, or poisons.

Dr. M. H. Limbert has been appointed medical officer of health at Parry Sound, at a salary of $200 a year.
The death rate from typhoid fever in Toronto during the month of January was 4·8 per 100,000 of population. It is interesting to note that in 1905, during the same month, the death rate was 32·1, and in 1910, 57·3 per 100,000 of population. The average rate during January for the last ten years was 20·9 per 100,000 of population, so that this year there was one one-fifth of the average number of deaths from this cause. As for tuberculosis, during the same month there were 1,122 cases on the visiting list, forty of which were discharged, twenty deaths occurred, and one hundred and nine fresh cases were reported. On February 12th, there were two hundred and forty-two patients suffering from tuberculosis in the city hospitals. The mortality from pneumonia and broncho-pneumonia during January was heavy. Dr. Hastings stated in his report that ninety-seven deaths were directly attributable to these diseases and that in forty-two additional cases pneumonia, with other complications, was the cause of death. Forty-eight deaths occurred as the result of the measles epidemic.

The condition of street cars frequently leaves much to be desired, and, as an insanitary car is a probable source of disease, it would seem advisable that they be subject to inspection by some duly qualified person. At a meeting of the Toronto Board of Health, which was held February 12th, it was considered that such inspection should be made by the medical officer of health and that he should be authorized to order any car that was unfit for use off the line. Dr. Hastings was asked to discuss the matter with the Provincial Health Department.

Several cases of smallpox are undergoing treatment in the Swiss Cottage Hospital, Toronto. In two cases, the disease was contracted from a man, supposed to be suffering from chicken-pox, who came to the city to visit his sister and at the same time paid a visit to his brother. The sister contracted the disease, as did also a man living in the brother's house.

A hospital for the treatment of measles is to be built near the present hospital in Riverdale Park, Toronto. Until the hospital is ready for use, cases of the disease will be isolated and treated in a house which will be used as a temporary hospital.

A request for a grant of $15,000 has been made to the city council by the London Hospital Trust. If the money is granted,
it will be expended on improvements and additions to the Victorian Hospital.

A new wing is to be added to the Pembroke Cottage Hospital. The accommodation for private patients is not enough, and it is intended that the new wing shall contain sixteen rooms for the use of such patients.

There was a large increase in the number of cases of infectious disease reported in the province during January when compared with the same month last year. This year 1,709 cases were reported and 237 deaths, while in January, 1912, only 927 cases were reported and 125 deaths. The increase is particularly marked in measles, scarlet fever, and typhoid, as will be seen from the following figures: January, 1913—measles, 705 cases, 42 deaths; scarlet fever, 359 cases, 14 deaths; typhoid, 101 cases, 35 deaths. January, 1912—measles, 82 cases, 2 deaths; scarlet fever, 285 cases, 10 deaths; typhoid, 41 cases, 12 deaths. These figures are not quite correct, as some of the municipalities of the province have not sent in reports to the chief medical health officer.

Two hundred patients were admitted to the Kingston General Hospital during the month of January. This is the largest number ever admitted in any one month.

The plans for an isolation hospital at St. Thomas have been approved by the provincial health authorities and by the Daughters of the Empire, who have undertaken to furnish the institution. Two cottages, each to cost about $3,000, will be built, one of which will be used for cases of diphtheria, the other for scarlet fever. The smallpox hospital will remain unaltered for the present, but, later on, it is hoped to make some improvements.

Seven hundred and seventy-six patients received treatment at the John H. Stratford Hospital at Brantford during the year ending September 30th, 1912, and two hundred and sixty-seven operations were performed. Several improvements to the buildings are needed, among them being a new wing for public ward patients, and new operating suites. The hospital is supported chiefly by public subscription, the government grant for the year 1912 amounting to $3,075. A Nurses' Home, which is not yet quite completed, is being provided by the Women's Hospital Aid.
There are six hundred and thirty-three patients in the Verdun Hospital for the Insane at Montreal.

Eight hundred and ninety-nine patients were admitted to the Montreal Homoeopathic Hospital during 1912, and eighteen hundred and ninety outdoor patients received treatment. The financial statement showed a balance of $193 in favour of the hospital.

One hundred and fifty first-aid certificates, thirty-six vouchers, and seven labels were issued last year by the Quebec Provincial Council of the St. John's Ambulance Association. The centre was formed in 1897 and since then almost six hundred certificates have been given. Last year two hundred and twenty-five persons completed the course in first-aid in Montreal.

Twenty-four cases of smallpox, thirty-one of diphtheria, and ten of typhoid were reported in Hull during 1912.

The annual dinner of the Société Médicale de Montréal was given at the Ritz-Carlton on Monday, February 3rd, Dr. J. P. Decarie presiding. The members and guests present numbered over one hundred and thirty, and among the latter were: Hon. J. L. Decarie, provincial secretary; Dr. D. J. Evans, president of the English Medical Society; Dr. H. A. Lafleur; Dr. E. P. La-chapelle; Dr. Gardner; Mayor Lavallee; Colonel Aubry; Dr. Savard, of the Quebec Medical Society; and Dr. Normand, of Three Rivers, who represented the French Medical Association of North America. It was suggested by Colonel Aubry, that the provincial government should establish a bureau of legal-medical research. This suggestion was promised favourable consideration by Mr. Decarie, speaking on behalf of the provincial government. An interesting feature of the occasion was the presence of almost one hundred ladies, who were served with refreshments upstairs and afterwards listened to the speeches made.

During January, one hundred and eighty-five deaths from contagious disease occurred in Montreal; and a large percentage of these were due to tuberculosis. One hundred and sixteen cases of measles were reported, of which two were fatal; forty cases of scarlet-fever, with two deaths; seventeen cases of diphtheria, with five deaths; two cases of typhoid, with one death; fifteen cases of
chicken-pox; two cases of meningitis, with one death; fourteen cases of smallpox; seven cases of erysipelas, with two deaths; and four deaths from grippe.

The civic grant to the Montreal Hospital for Incurables has been increased from thirty to fifty cents a day for each patient.

The nineteenth annual meeting of the board of governors of the Royal Victoria Hospital, Montreal, took place January 21st. Last year 5,566 patients were admitted to the hospital, an increase of 893 over the previous year. Of those admitted, 4,194 were residents of the city. In the outdoor department 4, 279 patients were treated, and the ambulance received 1,941 calls. Two hundred and ninety-eight deaths occurred, seventy-four of which took place within forty-eight hours of admission. The financial statement for the year showed a deficit of $11,328; this, however, was paid off by the members of the board. The average daily cost for each patient was $2.07.

At the Western Hospital, Montreal, 1,416 patients were treated during the past year, an increase of 81 over the year 1911. There were 74 deaths, and of these 22 died within twenty-four hours of admission. There were 251,808 hospital days; the ambulance was called out 864 times; and in the outdoor clinic 11,657 patients were treated. The demand for accommodation is increasing, and it will be necessary in the near future to extend the hospital or to make some arrangement whereby this demand may be satisfied.

A branch of the Victorian Order of Nurses has been organized at Ste. Agathe des Monts. It is probable that two nurses will be maintained.

During the week ending February 8th, 250 cases of contagious disease were reported in Montreal; 12 were cases of diphtheria, 27 of scarlet fever, 136 of measles, 44 of tuberculosis, and 7 of smallpox. There were 173 deaths in the city, 34 of which were the result of contagious disease. There were 274 births during the week.

The following grants have been made by the Montreal Board of Control: $10,000 to the pure milk stations; $2,500 to the General Hospital, and $1,000 to the ambulance service; $1,000 to
the Western Hospital; $2,000 to the Sœurs de la Misericorde; $2,000 to the St. Justine Hospital; $2,500 to Notre Dame and $1,000 for the ambulance; $1,500 to the Hôtel Dieu and $500 for the ambulance; $500 to the Children's Memorial Hospital; $1,200 to the Grey Nuns; $500 to the Protestant Infants' Home; $1,000 to the Orphelinat St. Arsène; $500 to the Grace Dart Home; $500 to the Montreal Maternity Hospital; $500 to the Montreal Foundling and Sick Baby Hospital; $600 to the Institut des Aveugles de Nazareth; and $1,000 to the Hôpital St. Luc. In addition, a grant of $3,000 has been made to the Royal Edward Institute and to the Bruchesi Institute; $850 to the Victorian Order of Nurses; and $250 to the St. John Ambulance Association.

Dr. Albert Lesage has been appointed to the chair of pathology at Laval University in succession to the late Dr. Hervieux.

MANITOBA

The members of the executive of the Manitoba Union of Municipalities waited on the government, January 15th. Among other requests made were the following, which were sanctioned by the government: "That a commission be appointed to inquire into drainage matters with a view to amending the Act; that hospital secretaries be required to send statements of bills for patients to the municipalities concerned; that there be a monthly inspection of children in town and village schools and a quarterly inspection in country schools by the district health officer, to discover any ailment among the children attending the school; and that a definition be made of the liability of heads of families for care during infectious and contagious diseases."

The report of the provincial board of health for the year 1912 gives a satisfactory statement concerning the general health conditions throughout the province, no serious outbreaks of infectious disease having occurred. As in other places, the infant mortality is higher than it should be: in 1910 it was one hundred and forty-five to the thousand, and in 1911 one hundred and twenty-eight to the thousand. In order to lessen to some degree the number of cases of tuberculosis, a sanatorium has been established at Vinette, where early cases of the disease may receive treatment.

Scarlet Fever is very prevalent in Winnipeg. The hospital on Bannatyne Avenue has been greatly overcrowded, sixty-three
patients undergoing treatment there at one time, although there is really only room for fifty. The building which had been fitted up as a nurses’ home in connexion with the King Edward Hospital has been utilized as a temporary hospital for scarlet fever patients, and the congestion relieved to some extent.

The annual meeting of the governors of the Brandon General Hospital was held January 20th. On this occasion, reference was made to the need of increased hospital accommodation in a town growing so rapidly as Brandon. A maternity hospital is badly needed also. During the past year sixteen hundred and eighty cases were treated in the hospital and the accommodation severely taxed.

Dr. A. E. Walkey has been appointed medical officer of health for Portage la Prairie at an annual salary of $200, in the place of Dr. A. P. MacKinnon. Dr. MacKinnon resigned as he felt that the remuneration was not sufficient for the amount of work involved, but offered to continue his duties if he were reappointed at a salary of $300 a year.

A delegation from the hospitals of the province waited on the premier, February 4th, with the request that the municipal grant for charity patients be increased. The premier stated that as this would involve the principle of direct taxation, he felt that the government could not take such a step without first consulting the people. It was then requested that the hospitals should be allowed to charge $1.50 a day, and if the patient failed to pay this sum, a charge of $1.00 should be made to the municipality. The premier promised that the matter should receive consideration.

The following are the figures given in the annual report for 1912 of the North Winnipeg Hospital: patients treated in hospital, 281; operations, 70; births, 60; accidents, 27; deaths, 14; number of days treatment, 4,318. In the outdoor clinic, 1,428 patients were treated and 3,136 consultations were held. The financial statement shows a surplus account amounting to over $2,750.

The Hospital for the Insane which has just been built at Brandon, to replace the one which was burnt down two years ago, was formally opened by the lieutenant-governor on Saturday, February 8th.
The Regina General Hospital has met with a certain amount of criticism in the past, but important changes are now being made and one feels confident that, under the new régime, the institution will prove itself worthy of the highest regard and of true benefit to the community.

The plans are being prepared for a hospital at Alsask. If the hospital is established, it is intended that it shall be open, not to residents of Alsask only, but to patients from neighbouring municipalities and from the surrounding country. Five municipalities have been asked to subscribe $3,000 each, thus providing $15,000. The cost of the proposed building is estimated as $5,000; the site has been given by the Canadian Northern Railway and the equipment of the private wards has been promised by certain merchants of Alsask. It is thought, therefore, that when all the expenses of building, etc., have been paid, a balance will remain of from seven to eight thousand dollars and this is to be used as an endowment fund.

The new smallpox hospital at Saskatoon is now completed and already has at least one patient. Over sixteen hundred patients were treated in the Saskatoon General Hospital last year.

The Waddell Memorial Hospital, which is about to be built at Canora by the Presbyterian Board of Home Missions, will consist of a four-storeyed building forty-four feet by seventy-eight feet, of solid brick on a cement and rock foundation. Later on a Nurses’ Home and a Superintendent’s residence will be erected on either side of the building.

It is probable that a hospital will be established at Gravelbourg, a rapidly growing town seventy miles south of Moose Jaw.

The Lady Minto Hospital at Melford, which was established in 1907, can now accommodate twenty patients, and has treated, since its inception, eight hundred and thirteen patients, two hundred of whom have been unable to pay anything. Owing to the increased cost of living, the hospital authorities have been compelled to advance the charges for public ward patients from $1.00 to $1.50 a day.
The hospital at Big River, the headquarters of the Mackenzie-Mann lumbering interests, ninety-five miles north of Prince Albert, was burnt down early in February. The fire originated from an overheated furnace pipe. Fortunately the patients were all removed in safety from the building.

A meeting of the board of directors of the Victoria Hospital, Prince Albert, took place January 14th. Among other matters discussed on this occasion, was the establishment of an isolation hospital. It was suggested that such an institution might be established in the north-west part of the city, and a committee was appointed to investigate the matter. A good deal of difficulty has been experienced in securing probation nurses; the question of fees was discussed and it was decided to write to several hospitals to secure information as to fees paid to probationers. It was also decided that a letter should be sent to each physician in Prince Albert, inviting him to join the staff of the hospital and to assist in the organization of a permanent medical staff.

Dr. Stafford, who has been acting as medical officer of health at Saskatoon during the absence of Dr. McKay, has resigned.

Alberta

Although Moose Jaw has been visited by more than one severe epidemic during the year, the number of cases of infectious disease reported during 1912 is much less than in 1911, the exact numbers being three hundred and forty-four and five hundred and fifty-two. There was a good deal of smallpox in the city from March to July, some fifty-four cases being reported. Then in July came an epidemic of typhoid, which continued till well on in November, one hundred and six persons suffering from the disease. Here again the number is less than in the preceding year, when two hundred and eighteen cases were reported.

The necessary land has been bought and a large building already secured, which it is intended shall form the nucleus of a new hospital at Lloydminster. The present hospital is adequate no longer and it is hoped that the new hospital will be in use before the end of the year.

An arrangement has been suggested whereby the Calgary city council will appoint six of the directors of the General Hospital,
the subscribers will appoint four, and the medical profession the other four. It is proposed to submit a by-law for $150,000 and, if this is granted, to expend the money on increasing the hospital accommodation. The present building can admit about one hundred and twenty patients.

Dr. Middlemass has been appointed medical officer of health at Wainwright.

BRITISH COLUMBIA

Three hundred and twenty-five thousand dollars has been granted by the city of Vancouver to the General Hospital. With this a new isolation hospital is to be built, as the present buildings are quite inadequate and, in fact, were never intended to be used as a permanent hospital. The new hospital, when completed, will consist of four units, for scarlet fever, diphtheria, tuberculosis, measles and chicken-pox, each of which will cost $75,000,—in all $300,000. Two of the units will be erected this year, and for this purpose $135,000 have been appropriated from the grant just made. The remainder will be expended,—$100,000 on a nurses’ home and $90,000 on improvements to the main building of the General Hospital. A smallpox hospital has been established at Hastings.

Approximately fifty-five hundred patients were treated last year at the Vancouver General Hospital. The daily cost for each patient was about $1.93, and about seventy-five per cent. of those treated were public cases, of whom less than thirty per cent. were able to pay for treatment. The deficit for the year amounted to $30,000.

The directors of the King Edward Sanatorium for Consumptives at Tranquille have asked the provincial government to grant $150,000 to the sanatorium. The money is needed to build a new hospital for the treatment of advanced cases, and it is estimated that a hospital which would contain one hundred beds would be built for $125,000. The present buildings are the original farm structures of the Fortune Ranch, which was bought in 1907 and converted into a hospital. They are insanitary and quite inadequate for the purpose for which they now serve. Other improvements are needed also, and the remaining $25,000 would be expended on the other buildings and on the grounds of the institution. The directors also pointed out to the government that, in order to put
the institution on a sound basis financially, an annual per capita grant of $1.00 for each patient treated and an additional fifty cents for each non-paying patient, should be made.

There were two hundred and sixty-eight deaths in Victoria last year, a death rate of only 6.63 per thousand of population.

Dr. Bapty, of Victoria, has been appointed inspector of hospitals for the province.

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**Canadian Literature**

**Original Contributions**

*The Canadian Practitioner and Review, January, 1913:*

The Treatment of Inoperable Cancer of the Uterus .... William O. Stevenson
The Ontario Hospital for Mental Diseases. Edward Ryan.
Appendicitis .... J. B. Fraser.

*The Public Health Journal, January, 1913:*

The Open Window .... J. F. Goodchild.
Rockwork and Plants for the Rock Garden .... R. R. Todd.
Militia Sanitation, A Civil Asset .... Lorne Drum.
The Hygiene of Building from an English Standpoint .... P. L. Marks.
The Prevention of Tuberculosis .... J. H. Elliott.
The Value of a Health Laboratory to a Municipality .... G. T. Masmith
The International Hygiene Exhibition of Dresden .... J. F. Honsberger.

*The Canadian Journal of Medicine and Surgery, February, 1913:*

Treatment of Diffuse Septic Peritonitis .... H. A. Bruce.
Medical Aspects of Septic Peritonitis .... John Ferguson.
General Peritonitis in Gynecological and Obstetrical Practice .... B. P. Watson.
General Septic Peritonitis .... S. M. Hay.
Dominion Medical Monthly, February, 1913:

Caesarean Section—With the Report of
Two Successful Cases . . . J. P. Kennedy.

The Canada Lancet, January, 1913:

A Medical Slander Case in Upper Canada,
eighty-five years ago . . . Hon. Justice Riddell.
The Surgical Treatment of Arthritis of
Infectious Origin and the methods
Appropriate to Special Cases . . . C. F. Painter.
Scrotal Tumours . . . . . . . . S. M. Hay.
The Carrier Question . . . . W. H. Hill.

L'Union Médicale du Canada, January, 1913:

Incision Obligée Transversale dans les
opérations sur la Vésicule et les Voies
Biliaires . . . . . . . . . . . . . . M. A. Marien.
De l'Importance de la Perméabilité Rénale
dans les Néphrites . . . . . . . . E. P. Bénoit.
Mesure de l'Activité Rénale—Constance
Urémique et Chlorurémique d'Amard . . G. W. Dérome.
Contribution à l'Etude des Fluxions et des
Alternances Morbides . . . . G. Archambault.
Les Devoirs du Médecin aupres d'une
Parturiente . . . . . . . . . . . . . . E. A. René de Cotret.

Medical Societies

KINGSTON MEDICAL AND SURGICAL SOCIETY

The Kingston Medical and Surgical Society held its annual
meeting on Friday, January 10th, under the presidency of Dr.
James Third, fifteen members being present. On this occasion, the
Widal reaction in the diagnosis of typhoid fever was discussed by
Drs. Etherington, MacCallum, Gardiner, Third, Day, and W.
T. Connell. The officers elected for the year 1913 are: president,
Dr. W. G. Anglin; vice-president, Dr. R. J. Gardiner; secretary,
Dr. W. T. Connell; treasurer, Dr. G. W. Mylks.
MONTREAL MEDICO-CHIRURGICAL SOCIETY

The sixth regular meeting of the society was held on Friday, December 20th, 1912, Dr. D. J. Evans, president, in the chair.

LIVING CASES: 1. Free transplantation of fragments of tibia into cranial defect. By Dr. E. W. Archibald. Dr. F. A. C. Scrimger read the report of this case and presented the patient for Dr. Archibald. The case will be reported in full in a coming number of this Journal.

DISCUSSION. Dr. C. A. Peters: Might I ask if there is any reason for the nocturnal convulsions in this case. A relative of mine was injured just in that way at the age of three, and twenty-eight years later Dr. Armstrong operated on her. During all that time she frequently had nocturnal convulsions; since the operation she has had very few and none during the last three years.

Dr. F. A. C. Scrimger: Unfortunately I only read the notes of this case and do not know any other particulars of the history, so am unable to throw any light on why these convulsions should be nocturnal.

2. Adult with extreme deformity following hip disease relieved by subtrochanteric osteotomy. Living case presented by Dr. J. Appleton Nutter.

This woman, aged twenty-eight years, suffered long in early life from hip disease, which left her hideously deformed. She at that time lived in Glasgow and as a child of nine years was operated on by Ogston "to stiffen the hip." She presented herself to me last summer for relief of the deformity which she had borne for more than twenty years. At that time she was wearing a boot with a cork sole nearly four inches high, which, however, did not give her leg the required length. Her left hip was ankylosed in a position of right-angled flexion and 20° adduction, while the left leg presented about one and one-quarter inches actual shortening. She could with difficulty stand erect by assuming an attitude of enormous lordosis; the photographs being passed around show this plainly. An x-ray taken by Dr. Wilkins showed bony ankylosis of the left hip-joint, the head and neck of the femur practically gone (probably largely as the result of operative interference), and the disease apparently long since healed. This last was confirmed clinically by the absence of spasm or tenderness on attempting to mobolize the hip-joint. She at that time gave a history of recent nephritis with generalized oedema and suffered almost continually from backache. Her urine showed a thick ring of albumin and numerous
hyaline and granular casts. She was admitted to the orthopaedic service of the Montreal General Hospital through the courtesy of Dr. MacKenzie Forbes, to whom I am indebted for kind advice, and for some time was kept under observation. It was finally decided that she could stand the strain of a general anaesthetic without undue risk. In cases presenting so much flexion at the hip, an osteotomy through the femoral neck (the Adams operation) is usually chosen. By this procedure the short, upper fragment cannot project anteriorly when the flexion is overcome. In the present case, however, the head and neck had practically disappeared and time was of great moment, hence a simple Gant’s (linear) osteotomy below the great trochanter was decided upon. This I did under gas and oxygen anaesthesia, experiencing no difficulty in overcoming the deformity. The patient was put in an extension apparatus and a long plaster spica applied. I was able to substitute 10° adduction for the 20° adduction, and 30° flexion for the 90° she formerly had. It is well known in this connexion that full extension in an ankylosed hip is very troublesome when the patient is sitting or is going up and down stairs, hence I did not regret leaving a small amount of flexion.

In a month and a half the patient began to get about on crutches and soon afterwards could put weight upon her left leg. Her convalescence was uneventful. She now has three-eights of an inch apparent shortening in place of the original three and a half or four inches, and walks best with only one-eighth of an inch thickening in the sole of her left boot. Her actual shortening remains as before, about one and a quarter inches. Her figure is nearly normal and her gait very good indeed, as one can easily see. A point of great interest has been the improvement in her kidney function following the operation upon her hip. Several months after the osteotomy I referred her to Dr. Gordon’s clinic and was much surprised to receive a report that her urine was in a practically normal condition. It will be remembered that she presented a distressing lordosis before operation, which was relieved by the osteotomy. No doubt her unnatural position of standing had the mechanical effect of putting an almost continual strain upon the kidneys, hence the albumin and casts in her urine.

Discussion. Dr. Wm. Hutchinson: The fact that albumin was found in the urine in this case is very interesting in view of some work recently done on the "Albuminuria of Lordosis." In one of the large orthopaedic clinics on the continent, work was done on this subject and it was shown that patients suffering from lordo-
sis very frequently had albumin in the urine. It seems to me that the albuminuria is due to pressure exerted on the kidney by the abnormal position of the spine. It is a well-known fact that rough palpation of the kidney will produce a temporary albuminuria. In view of the fact that a very large percentage of cases of lordosis suffer from albuminuria, and many times it is accompanied by casts, it is advisable to correct the lordosis as soon as possible, as serious disease of the kidneys is liable to result.

Dr. Nutter: I am very glad to hear what Dr. Hutchinson says with regard to the occurrence of albuminuria in patients with lordosis. The improvement in the function of the kidneys in this case was a surprise to me, all the more so for the reason that it was some weeks before we came to the conclusion that it was wise to risk an anaesthetic.

Pathological Specimens: Exhibited by Dr. E. J. Mullally.

1. Epithelioma of oesophagus. The specimen shows a lozenge-shaped ulcer of the oesophagus behind the bifurcation of the trachea. The tumour has spread into the right bronchus and set up a septic bronchial pneumonia of great intensity. On the other side there was a diffuse and much marked septic inflammation. The lumbar glands are full of pus. (From a male, aged fifty-eight, who had been ill with characteristic symptoms for six months.)

2. Carcinoma of the hepatic flexure. From a female, aged forty-three, the specimen was removed during life and shows a large growth of low papillary form with central ulceration, the floor of which is formed by a cavity almost large enough to receive the fist. This contained foul material, and is walled in by dense fibrous tissue infiltrated by tumour. There was extensive involvement of the mesentery.

3. Impacted fracture of neck and femur. From a female, aged sixty-four years. The specimen has been sawn in half to show the structure of the lesion. There was very firm union which proved to be fibrous, not osseous.

Case Report: Bone metastasis in cancer of the breast. By Dr. J. M. Elder.

Discussion. Dr. A. R. Pennoyer: I am reminded of a very interesting case which was under my care in 1910; it differed from this in the very much earlier occurrence of secondary growth. The patient was a woman between thirty and thirty-five, unmarried, who came to the hospital for relief of pain in the hip. Examination revealed very little until in the routine examination of the case a small, hard, unmistakably malignant nodule in the right breast
was discovered. This she had noticed for only a few months. X-ray showed very beautifully a secondary growth in the upper end of the femur. She was in the hospital a good many months and died from the disease. This was the earliest case of bone metastasis I ever saw, in fact the primary tumour certainly had not been there over nine months and still she had this secondary growth giving her pain in the hip.

PAPER. The paper of the evening, on "Clinical and Experimental Observations on Chronic Pancreatitis and Bile Pressure," by Dr. E. W. Archibald, was read by Dr. Scrimger, and as Dr. Archibald was unable to be present there was no discussion.

The seventh regular meeting of the society was held Friday evening, January 3rd, 1913, Dr. D. J. Evans, president, in the chair.

Pathological Specimens: Exhibited by Dr. A. M. Burgess.
1. Cancer of the uterus. Last August I received curettings from this patient and was able to diagnose in the mass of blood clot a few areas around some vessels which consisted of large cells showing numerous mitotic figures. The rest of the section was blood clot and necrotic tissue. The uterus was subsequently removed and the specimen here shows an elongated tumour filling the body of the uterus and has a perfectly smooth surface. This differs from the ordinary cancer of the uterus, both adenocarcinoma and epidermoid. There are two common types: that of the cervix you are all familiar with, it usually affects the vaginal wall and there is a great deal of scar tissue and stroma formation associated with it. The other, adenocarcinoma of the fundus, is usually a fungating mass. This tumour is of neither type, but invades the wall only slightly, and has a perfectly smooth surface.

2. An interesting specimen of a general infection of the kidney. This patient was sick for about six weeks. She had a fall on the back of a chair which struck her across the abdomen. Eventually she developed signs suggestive of meningitis. At autopsy we found several small abscesses in the cerebral cortex, a "malignant" endocarditis with ulceration of one aortic valve cusp, infarcts of the spleen, and both kidneys in the condition in which you see this one. Throughout the cortex and pyramids there are minute abscesses. The blood, abscesses of the brain, and the vegetations in the heart valve, all yielded pure culture of staphylococcus aureus. There is a mass of blood clot in the pelvis of the kidney which shows how blood may pour in large quantities into the urine.
3. Carcinoma of the liver. I show this specimen because it is apparently a primary carcinoma of the liver. This inferred (1) because we could not find any origin for it; (2) it is confined to one area with small apparent outgrowths in the other parts of the liver, and (3) morphologically the cells resemble bile-duct epithelium. The history is of a typical carcinoma—loss of weight, weakness, etc. From the frozen section we were able to diagnose carcinoma, apparently resembling bile-duct carcinoma. Therefore this is probably cancer of the liver which is primary, arising from bile-duct epithelioma. There are two main types of primary cancer, the so-called malignant adenoma, which arises from true liver cells and which may show in these cells perfectly well-defined bile capillaries, or the cells themselves may even produce bile; and the other type—of which this may be an example—a cancer arising from the bile duct epithelium. In rare cases carcinoma of the liver resembles cirrhosis and is a very diffuse growth.

4. Case of a woman aged forty-two, complaining of loss of weight, sudden jaundice and abdominal symptoms with distension. Fluid was found in the abdomen. She was sick for six weeks, and three weeks before admission the jaundice appeared and she was operated on with a supposed diagnosis of gall stones. The gall bladder was found distended and the cystic duct apparently obliterated. There was found a hard mass in or near the head of the pancreas, and also a cyst which was supposed to be in the head of the pancreas. The gall bladder was removed, a rubber tube inserted, and the wound stitched up. Twenty-four hours later she bled freely and died from haemorrhage. We found at autopsy the abdominal cavity filled with fluid blood and blood clot. The specimen shows the tube filled with blood clot leading down to apparently what was the common bile duct, but there seemed to be an erosion between this bile duct at the base of the tube and one of the large vessels of the portal system. We found all the bile ducts distended with a mixture of clotted blood and bile throughout the liver. We were unable to follow the common bile duct through the Ampulla of Vater and on dissection we found it obliterated by a small nodule about 2 cm. in diameter which apparently in the gross is a carcinoma of the Ampulla of Vater. It is interesting to note that the pancreatic duct, the duct of Virsung, passes right over this mass and is not at all occluded, while the common bile duct is completely occluded, thus giving rise to the marked jaundice and distension of the bile passages. I made a frozen section of this tumour and find it to be an adenocarcinoma of a very scirrhous type.
Discussion. Dr. F. A. L. Lockhart: I would like to ask Dr. Burgess a little about the history of this uterine tumour, and also about the structure of the tumour itself.

Dr. Burgess: I cannot give you the history of the patient. The structure of the tumour was soft, yielding, and microscopically consisted of large masses of epithelial-like cells which were undergoing mitosis very freely. It is a rapidly growing tumour, but one which instead of extensively infiltrating the uterine wall has grown into and filled the cavity of the uterus, as may be seen in the specimen.

Case Reports: I. Appendicitis Epiploica, by Dr. C. B. Keenan.

Discussion. Dr. A. M. Burgess: There recently occurred a case in the Montreal General Hospital in which at autopsy there was a very marked acute colitis of the ulcerative type and one of the ulcers had perforated (it was in the sigmoid) into the fatty tissue and formed a little abscess in which was a concretion about 4 or 5 mm. in diameter. I should think that, if the colitis had subsequently healed, this would have been a condition such as Dr. Keenan has spoken about to-night.

Dr. C. B. Keenan: As regards Dr. Burgess's specimen, I think if recovery had taken place there would have been a sessile mass. The interesting thing in these cases is the pedicle, just a thread, so to speak, and about an inch long. As to the comparative anatomy, I have not looked this up, and as to whether it has anything to do with diverticulitis of the colon I hardly know. Of course Bland, Sutton, and others, state that a diverticulum extends into an appendix epiploica, but as far as I remember every appendix epiploica has a pedicle, a long one and a very slim one, and how a diverticulum is going to extend into that and through it and not break it at any point I could not say, so I cannot see any connexion between the two.

2. High enterostomy in post-operative diffuse-spreading peritonitis, by Dr. W. W. Chipman.

Discussion. Dr. F. A. L. Lockhart: We should congratulate Dr. Chipman on the excellent result he has had in this case, and although his first result was not entirely a success I think the good result of the latter case is due entirely to his treatment. We all know how desperate such cases are.

Dr. E. W. Archibald: I have been very much interested indeed in this report of Dr. Chipman's, and I would like to congratulate him on the result. Clearly he would have had the same success in the first case, if it had not been for the unfortunate complication
of the infection in the pelvis. Looking back I can recall several
cases where such a procedure as this might have saved the patients.
One sees not rarely cases of acute peritoneal infection die in the
course of a few days with persisting signs of obstruction and also
signs of peritonitis, and it is often difficult to decide to what the
end was really due, whether to the peritoneal infection or the tox-
æmia from the obstruction. It would seem that at least a number
of such cases really die of a toxæmia from the obstruction rather
than from the infection. In Dr. Chipman’s patient the result of
the operation showed that her very grave condition was due to the
obstruction toxæmia rather than to the streptococcus toxæmia.
She immediately improved when the tube was put in. I was
present in Ottawa when McKenna’s paper was read, and I decided
to try it if the occasion arose. Since that time I have tried it in
two cases. I remember two previous cases in which I performed
enterostomy for a similar condition, but not purposely high up.
In both I opened the abdomen and took a chance coil of small
bowel which was well down in the jejunum or the ileum. In these
two cases the procedure had practically no effect at all, the bowel
remaining flaccid, nothing came through it and the patients died.
But I have to report that the two other cases in which I introduced
the tube into the jejunum, close to the duodenum, died also.
I report these particularly in order to show that in some instances
at least, the method cannot be counted upon with certainty. These
patients were also in extremis. There were post operative adynamic
obstructions with moderate peritoneal infection. In both I intro-
duced a Paul’s tube. In one a coil of the bowel was brought out
upon the abdomen, in the other only an inch or so. In neither of
these cases did I succeed in getting that free drainage which I hoped
for; the amount evacuated was clearly insufficient. The exhibition
of hormonal in one was without effect.

The work of Hartwell, published in the American Journal of
Medical Sciences last March, went to show fairly conclusively that
the toxæmia in such cases is very largely original in the duodenum
and upper jejunum. McKenna advises washing out with saline
so as to get rid of these toxines. The whole subject is fascinating
because it promises so much and yet is still rather unclear.

Dr. C. B. Keenan: I have not had any case of post operative
peritonitis, but many cases where this condition was secondary to
disease of some of the abdominal viscera. Here I have come to
look on the condition of the bowels, that is, whether they are moving
or not, as the chief factor in prognosis. For the paralytic condition
of the bowels, I commenced at first by draining through large openings then changing to very small ones, and have now come to depend upon the use of the various purgatives to combat this condition.

PAPER: Re-infection in syphilis. By Dr. R. P. Campbell and Dr. F. S. Patch. Dr. Patch read the paper.

Dr. R. P. Campbell: Dr. Patch and I have been very much interested in these cases. There are still some other patients in the clinic who might come into this category, but they have not been brought to a conclusion yet. The whole question hinges on immunity. It is probable that in these animal parasitic diseases, e.g., malaria, etc., individuals are immune simply because the causative organisms are still present in the individual. Take the African, for example, he does not suffer from malaria simply because he has it always with him. In the past the theory was that once a man had syphilis he always had it, and it is only recently, when our treatment has been more thorough and we have gained new knowledge along lines of infection, that these views have changed. The cases which Dr. Patch has reported tonight really represent but one question and, that is, these sores are either primary sores or they are tertiary sores. You can leave out super-infection and auto-infection, which are more or less academic and entirely theoretical. Neither of these cases can be put down as tertiary lesions, the fact that in each case the spirochetes were so numerous is unmistakable and would justify the diagnosis of a second infection of the disease. A further interesting point is with regard to the efficacy of 606. In one case the patient had received but a single injection of salvarsan and that was given him in the late secondaries, but in spite of this he seems to have been cured, so much so that a short time afterwards he was capable of re-infection, and so far as animal experimentation goes re-infection is quite impossible so long as there are any organisms in the individual.

HALIFAX MEDICAL SOCIETY

A meeting of the Halifax Medical Society was held December 16th, under the presidency of Dr. E. A. Kirkpatrick. On this occasion, an interesting paper was given by Dr. John Stewart, a former president of the Canadian Medical Association. Dr. Stewart’s address was entitled, “Cases from an old surgical note book with comments,” and in it he reviewed cases seen with Lister, when he was acting as that great teacher’s house-surgeon and assistant.
SOME CLINICAL OBSERVATIONS ON ARTERIO-SCLEROSIS

By James Third, M.D.

Professor of Medicine and Clinical Medicine, Queen’s University, Kingston

FOR the mass of humanity, life is one unceasing struggle. During the first half of this struggle, our enemies come largely from without. In armies whose strength none can estimate, they camp along our line of march, break through the weak points of our defence, burden us with fears and suffering, cripple and deform where they cannot destroy. During the second half, these external agencies, disordered and discomfited, give up the fight, to a large extent, just as the vital forces begin to show the wear and tear to which they have been subjected, as damage and decay begin to advance just a little more rapidly than the processes of repair. With the second period, we are more especially concerned to-night. Our observations will be confined, in the main, to three classes: physicians and surgeons from fifty to sixty; women from forty-five to sixty; business men from forty-five to sixty-five years of age.

Physicians and Surgeons: That a man is just as old as his arteries, is one of the durable maxims of internal medicine. Almost daily we are reminded of this fact by the tragic death of some member of our own profession. Why should a man in the full vigour of life be cut off by disorders of the circulation, disorders that are more easily prevented than nine-tenths of the so-called preventable diseases? To answer this and other questions, we must study the factors leading to an early breaking-down of the vascular system. Even when due allowance is made for the influence of heredity, an influence that we have no means of estimating accurately, there

Address before the Academy of Medicine, Toronto, March 4th, 1913.

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yet remains unexplained a wide disparity in the death-rate from arterial disease.

The following statistics are taken from the report of the Registrar General for the Province of Ontario for the year 1911. They have been compared with those of nine other years and may be considered a fair average.

<table>
<thead>
<tr>
<th>Total deaths for year.</th>
<th>Deaths 50-60.</th>
<th>70 and up.</th>
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<tr>
<td>Clergymen..............</td>
<td>61</td>
<td>11·5 per cent.</td>
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<tr>
<td>Barristers..............</td>
<td>33</td>
<td>12 &quot;</td>
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<tr>
<td>Physicians..............</td>
<td>60</td>
<td>33·3 &quot;</td>
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<tr>
<td>Carpenters..............</td>
<td>308</td>
<td>18 &quot;</td>
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<tr>
<td>Blacksmiths..............</td>
<td>112</td>
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<tr>
<td>Farmers..................</td>
<td>3,229</td>
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These figures should give us cause for reflection, but not necessarily for alarm, since the measure of a full life is not indicated by years. It will be observed from the above that the toll levied on the medical profession is highest for the decade between fifty and sixty; highest not only for the profession itself, but much the highest when compared with the other professions and the trades generally. It will be noticed, too, that the percentage of deaths for the medical profession for this period is exactly the same as that for the legal profession some twenty years later. From the published statistics, it is impossible to ascertain the causes of this high mortality in the medical profession for this period. I have therefore collected from the obituary notices in representative British, American, and Canadian journals for the year 1911, the causes of death of fifty medical men between the ages of fifty and sixty. It may not surprise you that 70 per cent. of these deaths was due to a breaking down of the cardio-vascular-renal system. The limited number investigated is due to the fact that the cause of death is not always given in obituary notices. While evidence based on such small numbers is not conclusive, it must be regarded as of some value, first, because the diagnosis in these cases would be accurate, and secondly, because the Registrar General's report, above referred to, shows that excluding "old age" and "still born," the mortality from disease of the cardio-vascular-renal system is 18·5 per cent. of the total. In the light of our present knowledge, a diagnosis of chronic interstitial nephritis in most patients past fifty is incomplete.

Another small series of cases is interesting and at least suggestive. Of nine gentlemen known to many of us, who began the study of medicine after thirty-two, and who had previously been
engaged in agricultural or kindred pursuits, seven died of arteriosclerosis within fifteen years of their graduation, one is living twenty-two years after, but in a condition, from vascular degeneration, scarcely preferable to death, and one, twenty years after graduation, is still in active practice but with a blood pressure rarely below 200 mm. Hg. Are we to regard the development of arteriosclerosis in these nine gentlemen as a mere coincidence, or are we to regard the undertaking, comparatively late in life, of hard mental work as a special cause of vascular decay? This leads us to ask, what is there in the practice of medicine that causes such a high death-rate of practitioners between the ages of fifty and sixty? Why is it that 79 per cent. of the profession do not run the allotted span? Or again, with regard to those who are our valued helpmates in the profession—the Sisters and nurses—why is the mortality in comparatively early life so high? From the Registrar General’s report for 1911, we find that 61.6 per cent. of deaths among the Sisters in our hospitals and other charities, occurred before the age of forty, and that no less than 82 per cent. of deaths among nurses occurred before fifty. Even when we remember that a considerable number of the Sisters die of tuberculosis and that the nursing profession is still in its infancy, we must admit that the mortality, both among Sisters and nurses, is alarmingly high. In an endeavour to find an answer to our questions, let us examine, without too much detail, the everyday life of the general practitioner. Hard mental work is, and always has been, the open sesame of our profession. John Y. Bassett, the Alabama student, immortalized by Osler, writing from Paris in 1836, beautifully expresses this idea, “There is not a solitary great man in France that is idle, for if he were, that moment he would be outstripped; it is a race and there are none so far ahead that they are not pressed by others; many are distanced, it is true, but there are none allowed to walk over the course.”

It is a common observation that most men of whatever occupation who lead regular lives, free from excesses of all kinds, as a rule live out their allotted span. It is fair to argue then, that the irregularity of the life of the general practitioner is a potent factor in his early break-down. Physiologists tell us that most men after forty or forty-five take food far beyond the needs of the body. In this respect, medical men are notorious sinners. Overeating when combined with constipation, induces passive congestion of the abdominal viscera, overfilling the splanchnic reservoir, and autointoxication. The absorption of toxins leads not only
to early degeneration in the circulatory apparatus, but to poisoning
of the nervous system. This poisoning shows itself in worry, in
neurasthenia, and a vicious circle is thereby established.

With the toxins as a cause in mind, I have been at a loss to
understand why phlebo-sclerosis is so much less common than
arterio-sclerosis, since the toxins would be present in full strength
in the venous blood. Is it due to a difference of work, a difference
of structure, or is it a combination of the two? The actual ex-
penditure of energy in mental work is relatively small, but the in-
fluence of that expenditure on the organism generally, and on the
digestive system particularly, is very considerable. In most of
our text-books we are told that hard manual labour by increasing
the peripheral resistance, favours the development of arterio-
sclerosis. The statistics, so far as Ontario is concerned, do not lend
confirmation to this view.

Observations: From the statistics quoted, no one can accuse
the members of the medical profession of "intruding themselves
into the company of posterity."

The large number dying between fifty and sixty must be re-
garded as a calamity, not only to the profession, but to the world.
It is fitting that we should ask ourselves why the mortality among
the members of our profession is approximately three times that
of the other professions for this period; and having asked the
question, it is surely our duty to ourselves, to our homes, to our
science, to find the answer.

The limited statistics quoted seem to indicate that 70 per-
cent. of those dying between fifty and sixty are carried off by
what may properly be termed a preventable disease. We cannot
longer limit the preventable diseases to those of bacterial origin.
Arterio-sclerosis, up to a certain age, must be regarded as a pre-
ventable disease.

From the lessons of statistics, from the lessons of everyday
life, it is fairly evident that our irregular hours and epicurean
appetites are the chief causes in the early development of arterio-
sclerosis. The spiritual injunction of St. Paul, "Let a man ex-
amine himself," should be taken to heart by the members of the
medical profession, at least in a physical sense. How often, in
recent years, have men who considered themselves in excellent
health been stunned to find they had a blood-pressure well nigh the
breaking point? We should not examine ourselves too frequently,
however. Over-solicitude leads to introspection. No man can
stand a contemplation of his own ailments, real or imagined. So
much for the profession.
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FEMALES WITH HYPERTENSION: Total in series, two hundred and fifty. Ages forty-five to sixty.

**Group 1.** Moderate sustained hypertension at climacterium, returning to normal, 67 per cent.

**Group 2.** Hypertension at climacterium, going on to definite sclerosis, 33 per cent.

Of the eighty-two making up Group 2, fifty-five, or 22 per cent. of the total, either lost weight or remained about normal, while twenty-seven, or 11 per cent. of the total, increased in weight (180 lbs. or over), and of the latter, all were heavy feeders, showing a preference for meats and sugars. Let us now study the history of a fairly typical case of each group.

**GROUP 1.**

Mrs. J., aged forty-five. Good family history, except that her father suffered from asthma. She has always been more or less nervous; has a restless eye and a high buccal arch, appetite good, but is afraid to eat, bowels constipated, belches large quantities of gas, suffers from frequent attacks of palpitation, especially at night. Does not sleep well. A trilling noise made by the children “gets on her nerves.” Has lost ten lbs. in weight. Menstruation regular. No nocturia. The stomach contents, four hours after an ordinary meal, showed free Hcl. 0.2 per cent. The right kidney could be made out below the costal margin; no pain; urine, no albumin, Sp. Gr. 1015. Haemoglobin 80 per cent. Apex of heart in normal position. Blood pressure 175 mm. Hg. No stiffening of radials or brachials. She was ordered a generous proteid diet, an alkaline mixture with small doses of sod. brom. and a laxative, to be taken well diluted, one hour after meals. This prescription she took at intervals for two years, at the end of which time menstruation had ceased and blood pressure was normal.

**GROUP 2.**

Mrs. S. came under observation March 4th, 1904, at the age of forty-three. Her illness at this time was similar in all respects to that of the patient whose history has just been given and the same line of treatment was followed. Eighteen months later, she again presented herself. There was no burning in the stomach, though she complained of flatulence and frequent attacks of palpitation, especially at night. When tired, a dragging pain was experienced in the neighbourhood of the right kidney which could be readily palpated. She had lost thirteen lbs. in weight; menstruation had ceased. She complained of headache, largely occipital. The apex of the heart was in the normal position, although the second aortic sound was markedly accentuated. Her blood pressure stood at 190 mm. Hg. She had to rise once or twice during the night to void urine. No albumin, Sp. Gr. 1005.

The proteids were reduced, though white meats, bacon, and a very moderate number of eggs, were allowed. An abdominal bandage was ordered. She was under observation at this time for five months and during this period took iodides with a laxative, small doses of bromide being added occasionally. She regained her lost weight and expressed herself as feeling well. Her blood pressure was now 170. She was advised to stop medicines with the exception of the morning laxative and to lead a quiet life, free from worry, excitement and fatigue.

She again consulted me in April, 1912, or six years later, when the following notes were made: Dizziness and shortness of breath; numbness in left foot and hand; pains in the legs if she walks more than three or four blocks; these were always relieved
by resting for a few minutes and elevating the feet—the "peripheral crisis" of Pal; indefinitely pains about the joints, described as rheumatic. Has some difficulty in descending stairs; there is much less pain in legs if she comes down backwards. Occipital headache almost constant, frequently wakes her in early morning. The apex is displaced downwards and to the left two inches, second aortic sound accentuated, heart rapid, no murmurs; brachials tortuous. Blood pressure 300. The urine contains a small amount of albumin, with many hyaline and granular casts. Patient died suddenly two months later.

Observations: When we consider the histories of these cases of hypertension, two facts seem evident: first, that many women at the climacterium show hypertension, and, secondly, that a certain percentage of these pass on insensibly into definite arterio-sclerosis. In none of the five hundred hypertensives, not even in the advanced sclerotic cases, could headache be said to be a prominent symptom until the appearance of a trace of albumin in the urine. So constant has this relationship been that I am usually able to anticipate the renal involvement.

Approximately 75 per cent. of women over thirty-five years of age, show an increase of blood pressure of from 5 to 10 mm. Hg. for the twelve hours preceding menstruation. About the same percentage under thirty years of age, show no change whatever. The slight increase cannot, therefore, be regarded as physiological.

The period of observation has not been sufficiently extended to form even an approximate idea of the duration of the disease in those of Group 2, who remained about their normal weight; but of those who gained in weight (180 lbs. and over), none have lived three years after decided stiffening of the arteries could be made out.

Business Men: Number in the series, two hundred and fifty; syphilis and leadworkers not included. The majority began to show definite hypertension between fifty and fifty-five.

Mr. R. Present age sixty-seven. Came under observation five years ago, complaining of dizziness on any sudden change of position, motor-boat uproar in his ears, some ill-defined numbness in the legs, occasional attacks of abdominal pain, attributed to flatulence, confusion of ideas towards the close of a hard day's work. Some dyspnoea on exertion but never a prominent symptom. Bowels constipated; apex of heart displaced downwards and to the left one and a half inches. Impulse slow, strong and wide-spread. Second aortic sound accentuated; mitral systolic murmur of recent rheumatic origin. No headache. Radials and brachials tortuous: blood pressure 250; urine, no alb., no sugar. Sp. Gr. 1018. Loss of weight seventeen lbs. He was advised to continue his work, but to lessen both responsibility and number of hours. Was allowed fresh fish, bacon, white meats and given pot. iodid., sod. brom., and a laxative until the thumping in his ears was relieved, when the bromide was discontinued. At the end of six months, his blood pressure stood at 180 mm. Hg. The iodide was now discontinued and one dram of mag. sulph. on rising prescribed. The blood pressure was taken each month for the next year, without showing any appreciable variation.

About this time he suffered from a haemorrhage into his vitreous, and iodide was again given for three months. He then spent several weeks at one of the Ontario springs, drank freely of the laxative waters and, on returning, reported himself much improved. For the past two years, his blood pressure has ranged from 190 to 240. He eats sparingly, takes a glass of mineral water on rising, avoids fatigue, takes frequent holidays, and continues at the head of a large business concern.

Observations: Modern methods and modern competition require men to work at high tension and for long hours. Directly or indirectly, the circulatory system bears the brunt of the stress and strain. The pulse tension creeps steadily up. There is increased work thrown on the heart, which in order to maintain a sufficient flow in the capillary beds, daily draws on its reserve forces. There is a limit to reserves as there is to everything else human, and ere long, the irrigation system shows signs of clogging. The heart quickens its speed in a final effort to meet the emergency. For a time this strategic move succeeds, but only for a time. Sooner or later, stagnation shows itself, especially in the abdominal viscera. Imperfect digestion results, bringing in its train putrefactive changes in the bowels, flatulence and other disturbances. The toxins now literally pour into the defenceless life stream and the destruction is well-nigh complete.

Diagnosis: When the arteries begin to stiffen, the patient presents many symptoms closely resembling those of neurasthenia. A systematic study of the blood pressure will do much to clear up the diagnosis. The sphygmomanometer is quite as helpful in the diagnosis of vascular and certain neurotic affections, as the stethoscope is in respiratory diseases. We must not be misled by hypertension due to angiospasm so often seen in nervous women at the eliamaeterium. Digital compression in the estimation of blood pressure, no matter how experienced the finger, is untrustworthy.

The size of the arteries differs a good deal in different individuals. If the radials are small, we are too apt to conclude that the heart’s work is not being properly performed. We must take the blood pressure and, above all, search for the corroborative evidence.

A low reading does not necessarily mean an absence of sclerosis: the myocardium may be weakening or the general health below normal. The position of the apex of the heart is a valuable sign. It is well to remember, however, that the apex is usually three-quarters to one inch to the left of the point of maximum cardiac impulse. This can be determined by percussion and confirmed by fluoroscopy. If there is tortuosity of a vessel that is usually straight, we may safely infer that there is some degree of arterio-sclerosis. In health, the temporals are tortuous. Before
applying the sphygmomanometer to the arm of a nervous woman, it is advisable to spend a few moments in explaining its use, otherwise a reading altogether too high will be registered, but don’t let your patients know too much about blood pressure or blood-pressure instruments or you’ll breed a colony of very troublesome neurasthenics.

**General Management:** A careful examination is the first essential in treatment. It quiets useless fears, inspires confidence and gains intelligent coöperation. If a business man, he should relax, but not relinquish, his grip on business, and should take frequent holidays, especially at some of our mineral springs. I am not a Nauheimite, but neither am I blind to the fact that many patients with hypertension and even well-marked arteriosclerosis are greatly benefited by six or eight weeks at the Nauheim Springs. I attribute the “cure” to the laxative waters, the regular hours, the quiet restfulness of the place, the cheery optimism that seems to pervade everything, and, last but by no means least, its reputation as a healing shrine.

In routine practice to-day, too much dependence is placed on vasodilators and iodides. A certain variable degree of hypertension is necessary, and so long as it does not approach too closely the breaking point, it should be left alone. The nitrites may relieve some symptoms for a time, but only for a time. Except in the earliest stages of the disease, I have never seen any permanent benefit from the iodides. With the hippurates as recommended by Oliver of Harrogate, my experience is limited and not altogether favourable. With the preparations of mistletoe, I have as yet had no experience. The splanchnic reservoir is usually over-filled and judicious purgation will do more than anything else to restore the equilibrium. An occasional dose of calomel is often of the greatest advantage. When dilatation of the heart takes place, abstraction of a pint or a pint and a half of blood, will give temporary relief. Hot air baths, by stimulating the action of the skin, will also give temporary relief. Alcohol should be prohibited in all cases and tea and tobacco too, if there are intermittent pains in the calves, relieved by resting. It is better perhaps that the patient should become a vegetarian, as that term is understood to-day. I have for years, however, allowed bacon, fresh fish and white meats in moderation, and apparently with advantage. The mental attitude of the patient must be considered. Too many restrictions are apt to lead to gloomy introspection. We must make life worth living. If we fail in this, we fail in discharging one of the important functions of our high office.
THREE CASES OF ACROMEGALY WITH ONE AUTOPSY

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Cases showing pronounced disturbances of pituitary function are not common. Woods Hutchinson, in 1898, collected from the literature up to that date two hundred and eighteen cases of acromegaly, some of which were of so remote a date, and the symptoms so ill-defined, that it may have been incorrect to consider them. His article has special reference to the condition of gigantism, which has been shown to be associated with a hypertrophied pituitary, an abnormality which is either congenital or begins before growth is complete, whilst acromegaly is said to be produced by a similar hypertrophy occurring during adult life. The principal findings in the cases of gigantism he was able to present were: (1) Their immense size—between seven and eight feet. (2) Their abnormally short life—averaging twenty-two years. (3) Their poor mental development. (4) Their lack of sexual power. Since his article appeared, many interesting cases of acromegaly have been reported, and much work of an experimental nature has been done on the pituitary gland. A condition of under-functioning of the pituitary gland, as opposed to over-functioning, has also been recognized.

The organ which modern anatomists call the pituitary body or hypophysis cerebri was considered by the ancients to supply a mucous secretion to the nose, hence the origin of the word "pituitary" from the Latin pituita, meaning phlegm or mucus. Vesalius in his work, "De corporis humani fabrica," published in 1553, called it the "glans pituitaria excipiens." The term "hypophysis cerebri" was suggested by Soemmering in 1778. Wenzel, in 1810, wrote as follows: "The appendix of the brain seems to play a more important rôle in the human body than one would be inclined to believe." He considered epilepsy as due to disturbances of its functions. In 1886, Pierre Marie, when acting as assistant to Charcot at the Salpêtrière, was the first to point out enlargement
of the pituitary body in the condition which is now known as acromegaly. He reported two cases. Souza Leitte, a pathologist who was associated with Marie in the publication of an article on the subject in 1890, first suggested the word "acromegaly" as a name for this disease.

Within the past three years three cases of acromegaly have been in the wards of the Royal Victoria Hospital, one of which came to autopsy. Through the courtesy of Dr. W. F. Hamilton, in whose service the cases occurred, I have been permitted to give a short synopsis of the clinical notes.

Case 1. A. B., female, a French-Canadian, aged sixty-one years, occupation charwoman, entered the hospital complaining of headache, weakness, and deformity of features. She was married at the age of nineteen years, and had eleven full-term children. There is a vague history of transient swellings of the neck, legs, and arms about the age of twenty-five, but these symptoms cannot be connected with other facts in her history. The patient also had suffered from neuralgic pains on the right side of her face and neck for many years. It was not until shortly after her menopause, at the age of fifty years, that a change was observed in her features; her nose and lower lip began to gradually enlarge; nearly two years later her tongue began to get longer, and it gradually increased in size until the time of admission, when it was with difficulty retained in the mouth and phonation was almost impossible. About the same time as her features were beginning to be noticeably altered, her hands and feet got larger, and when she entered the hospital they were markedly enlarged. In addition to the deformity of her features, her skin, particularly on her face, became roughened and coarse. A kyphosis of the upper dorsal region was present; her thyroid was not enlarged, and there were no ocular symptoms. Her cardiovascular and respiratory systems showed no abnormality. She left the hospital at the end of a few days before the case could be properly studied.

Case 2. P. G., female, Galician, aged fifty years, entered the hospital in February, 1910, complaining of change in her features, cough, shortness of breath, weakness, palpitation, pain over the heart. She was born in Galicia, and lived there up to a few years ago. She was troubled with attacks of sore throat and of eye-ache, up to the age of twelve years. Her menstrual periods began at twelve and a half years, and she was as large and fully developed at that age as other girls were at twenty years. She was married at eighteen, and has had ten children. The last was born when she
was thirty-four years old. Her neck began to enlarge when she was ten years old, and it increased in size for two years and then stopped. Her husband had enlargement of his neck, and all their children, shortly after reaching the age of ten years, began to have enlarged necks. Enquiries about her friends and neighbours show that many of them had the same condition (evidently a goitreous district). She had disturbances of menstruation (menorrhagia) two years before the onset of her menopause, which occurred one year ago (at the age of forty-nine). About four years ago she began to have "heavy feelings" in her head which prevented her from sleeping at night. Three years ago, almost coincident with the time of the disturbances of menstruation, her features were noticed to be becoming coarser; then there gradually developed an enlargement of her lower lip and jaw, and her teeth projected, her figure became stooped, and then her hands and feet enlarged. Thirst and polyuria were present during the past year. These changes in her features, figure, and extremities were gradual in their development, occupying about three years.

Present Condition: There is a marked change in her figure from the tall, slender woman of a few years ago, to the stooped squatty appearance of the present. There is marked enlargement of the thyroid, particularly the left lobe, and it has increased in size during the past few years when her features were changing. There are disturbances of vision. Prior to the onset of symptoms connected with this condition of acromegaly, there were present shortness of breath and palpitation on any exertion, and no improvement has been observed in spite of treatment, in fact it was for the relief of dyspnœa and palpitation that she came to the hospital. Her temperature was ninety-nine, pulse eighty, and respiration twenty to the minute. There was no cyanosis nor oedema. An x-ray taken showed evident enlargement of the sella turcica. She is at present being kept under observation.

Case 3. H. C., female, French-Canadian, aged sixty-four years, married, entered the hospital complaining of shortness of breath, palpitation, lump in throat, deformity. She has always worked hard, most of her life on a farm. Menstruation began at twelve years. She had smallpox at twenty-two years. She was married at thirty-five; two children were born. A gradual enlargement of her throat was noticed when she was about forty years old. Her menopause occurred between forty-eight and fifty, and shortly after an enlargement of her features became noticeable, and then her hands and feet got larger. The finer
movement of her hands, such as required in sewing or knitting, became impaired, and a pronounced stooping of her figure was apparent. Her speech became thick and her tongue enlarged. Headaches and a sense of heat in the eyes were troublesome symptoms. Between five and six years ago, dyspnœa on any exertion was noticed; this symptom, along with swelling of her feet which came on three months ago, has become much worse and caused her to seek hospital relief.

Abstract from clinical notes. A bulky, coarse-featured woman, breathed with difficulty and markedly cyanosed. Her nose and ears were large, long, and broad. Her lips broad, thick, and covered with long coarse hairs. The lower lip protruded. Her teeth were loose and separated considerably from each other. Her tongue seemed too long for her mouth. Her eyes were prominent and the skin of the lower lids puffy. Her sight was impaired, the pupils were pin point, and did not react to light or accommodation. She talked very thickly. There was marked forward bowing of her figure. She could not straighten her back. There was marked generalized enlargement of the thyroid. Her hands and feet were large. Her skin was thickened over her body and covered with coarse hairs. The abdomen was prominent and the feet and legs œdematous. Blood, Hb. 110 per cent., reds 7,380,000, whites 8,000. Urine, normal. Range of vision impaired. The area of cardiac dulness markedly increased, the heart sounds weak and rapid, accompanied by murmurs. The respiratory system showed marked effects from this cardiac change. She died, apparently from heart failure, two weeks after admission.


Large elderly female, 145 cm. in length, weight about 175 lbs. Skin grimy, coarse and thickened. Lips enlarged and thickened. Nose and ears large. Lower jaw markedly enlarged and teeth loose and widely separated. Hair long and coarse; abundant over the body. Hands large and spade like; fingers enlarged, resemble sausages. Feet enlarged. Abdomen very prominent. Marked thickening of the skin; œdema of the feet, legs and abdomen, with thickening and puffiness of skin of the lower eyelids.
The scalp is scaly, very thick and hard, and loosely adherent to the skull. The latter is considerably thickened, opaque and heavy. The dura strips readily from the skull. The sinuses are greatly engorged, as are also the superficial cerebral vessels. The Sylvian and basilar arteries are atheromatous. The cerebrum weighs 1050 gms., and the cerebellum 155 gms. On section, nothing abnormal is found. The choroid plexus is normal. The sella turcica is greatly widened to accommodate a greatly enlarged pituitary body. The pituitary weighs 10 gms. (about twenty times larger than normal) and measures 4 cm. vertically and 2.5 cm. transversely. Two small projections, one on each side, are present about the middle of the growth. It is evident that the enlargement is made up entirely of the anterior lobe; the posterior lobe is normal in size. On section, the growth presents a pale brain-like colour and is uniform throughout. The posterior lobe is hardly discernible, recognized by only a few shreds of tissue attached to the stalk.

Microscopically, sections show a great hypertrophy of the anterior, with compression of the posterior, lobe. In places an adenoma is suggested, but closer examination reveals merely an exaggeration of the normal cellular arrangement. Strands of trabecular tissue, of varying size and distribution, but relatively of small amount, are seen throughout, particularly in the neighbourhood of the blood vessels, which are very abundant, congested, and have slightly thickened walls. The capsule is somewhat thickened. The striking feature about the sections is the entire absence of acidophilic cells; all the cells are basophilic. They are greatly increased in number, and vary in size and activity. The cytoplasm of the majority of the cells is finely granular or reticulated, with a relatively large rounded nucleus, somewhat pale, with deeply staining chromatin granules scattered through it, and a well defined nuclear membrane. In many there is a well marked nucleolus. In places the nucleus is represented by an irregular, incomplete, nuclear membrane and a few granules. Other cells are shown in which the cytoplasm is not so reticulated, but uniformly stained, and the nucleus very deeply stained. The nuclei in these cells are more inclined to be oval or elongated in shape. The posterior lobe shows no abnormality. Choroid plexus sections present an oedematous appearance. The epithelium is swollen. Corpora amylacia are numerous and stain deeply. The blood vessel walls are thickened.

The thyroid is greatly enlarged, weight 185 gms. (about six
times larger than normal). It is made up of a number of subdivisions, the left lobe having three lobules and the right two. The isthmus is flattened out. The length of the left lobe is 11 cm., and the greatest width 6 cm.; of the right lobe, 8 cm. and 4 cm. On section these lobules are found to contain rounded masses of different sizes, having a brownish red colour. They can be easily shelled out from the surrounding tissue. There is also present a large number of small cysts of varying size containing colloid material. Some of the lobules contain more than others. Parts of the organ cut with difficulty owing to a calcified change here and there. Parts of the gland show hypertrophy of normal thyroid tissue without adenoma or cyst formation. The parathyroids were not found.

Sections cut from the thyroid consist of a large number of irregularly rounded acini of varying sizes, filled with colloid material. The acini are lined by cells whose cytoplasm is indistinguishable from the colloid, but the nuclei are rounded, and are chromatin-granular or pale, as a rule. Some of the acini nearer the edge of the sections are flattened out, whilst others show little or no lumen. There are a few fairly wide strands of fibrous tissue which stain faintly with Van Gieson. The blood vessels are congested slightly, their walls slightly thickened, and in a few places red blood cells are seen in the acini. In places the fibrous strands may be seen incompletely surrounding groups of acini. The amount of fibrous tissue relative to the rest of the tissue is not great.

The lungs were voluminous, full of blood, edematous and slightly emphysematous with congestion of the large and small bronchi. Microscopically the acini were dilated and their epithelium denuded. Some contained a few red blood cells and coagulated proteid material. Many had pigment-bearing cells of large size. The blood vessels were congested.

The heart was very large, weight 615 gms. There was extensive thickening of the visceral pericardium over the right ventricle. There was marked dilatation of the cavities and hypertrophy of the whole organ. Sections showed no increase of interstitial fibrous tissue, but much branching of muscle fibre. The muscle nuclei were scanty and pale; some brown pigment was seen in the vicinity of many. The coronaries showed fatty atheroma and the aorta had extensive plates of calcareous degeneration.

The skin of the abdomen was thickened and the subcutaneous fat coarse and abundant. The abdomen contained a large quantity of clear, straw-coloured fluid. The liver was 3 cm. below the costal
border in the right nipple line. The spleen was not visible. The great omentum was coiled over the small intestines. The stomach was large and occupied the greater part of the epigastric space. Its lower border reached the level of the umbilicus.

The liver weighed 1,660 gms. and measured $26 \times 17 \times 7$ cm. It had several Liebermeister’s grooves on the right lobe. There was no increase in fibrous connective tissue. Some areas of what looked like fatty degeneration were present. The blood vessels were greatly congested. The gall bladder was normal. Sections of the liver showed extensive passive congestion, very little fatty infiltration and no increase of connective tissue.

The spleen weighed 235 gms. and measured $12 \times 8 \times 5$ cm. Its capsule was tense and the organ firm. On section, the Malpighian bodies were conspicuous. The splenic artery was atheromatous. Sections showed a slight increase in the thickness of the capsule, an increase in number of Malpighian bodies, the central vessel thickened and in places tortuous. There was some degeneration of the pulp cells and the splenic channels were greatly dilated.

The kidneys showed a few small cysts on their anterior surface, but apart from this there were no abnormalities. The sections showed cloudy swelling of the epithelium and some oedema. No fibrosis.

The left adrenal was bulky. It weighed 18 gms. and measured $6.4 \times 3.3 \times 1.6$ cm. The differentiation was good. The cortex was pale yellow with scanty pigment. The medulla was spread out in a thin film and was occupied by accessory cortical tissue. In the centre was a rounded nodule 1.4 cm. in diameter and with a creamy, yellow surface.

The right adrenal weighed 7 gms. and measured $5.5 \times 3 \times 0.2$ cm. Its cortex was scanty and pale yellow, pigment layer scanty, and the medulla cavitatated.

Sections showed uniform hypertrophy. There was slight thickening of the capsule and parts of the section showed a slight connective tissue increase. The glomerular layer varied in width; on the whole it was somewhat increased. Its cells were large, stained deeply, with large, deep-staining nuclei. The fasciculate and reticulate layers were increased in size; their cells were large and many showed a reticular framework with a large pale-staining nucleus. The chromatin cells were large, and contained a considerable quantity of pigment. Large extra-cortical adenomas were present which presented the same cytological features.

The pancreas weighed 180 gms. and measures $21 \times 4 \times 1.5$ cm.
Sections showed no fibrous interstitial increase. The islands were small, pale, and not numerous. The blood vessels were congested and dilated. There were a number of large, round, fat spaces to be seen throughout.

The stomach measured $26 \times 10.5$ cm. It showed an old ulcer, $2.5$ cm. in diameter, close to the cardiac orifice on the lesser curvature. Its floor was smooth and its edges sharply defined and red. The surrounding tissues were thickened. The pyloric ring was poorly marked, and there were punctiform haemorrhages in the mucous membrane.

The uterus was quite small, and a small fibrous polypus was attached to the fundus.

The right ovary was $2 \times 1.2 \times 1$ cm, and very firm on section.

The left ovary was $2.2 \times 1 \times 1$ cm and contained a number of small, thin-walled cysts with clear contents. Sections of the ovaries showed extensive fibrosis.

The bone marrow was soft, pultaceous and maroon coloured.

The following abstract of a report on an acromegalic subject, by O. C. Geddes, M.D., of Edinburgh, is of interest, inasmuch as it practically agrees with our case: Female, aged fifty. The pituitary body weighed 15.55 gms. (the normal weighs on an average 0.5 gms.). The thyroid gland weighed 312 gms., was very large in this case, forming an enormous goitre, which extended below the sternum. The thymus was not enlarged. There were five parathyroids. The suprarenals weighed: right 9 gms., left 9.5 gms. The normal weight is 6 gms. The ovaries and uterus were small. Hence the pituitary was thirty times the normal size and the thyroid ten times; and the suprarenals were increased 50 per cent. The ovaries were apparently functionless. Sections of the pituitary in this case showed that the great increase was due to proliferation of the cells of the anterior lobe. The posterior lobe was apparently normal. The enlargement was due to a simple hyperplasia, not an adenoma. Histologically, the general appearances of the thyroid were those of a parenchymatous goitre. The suprarenals appeared to be normal. The ovaries, for a person of fifty, showed an extensive fibrous change. They would have been normal for a very aged woman, but at her age were indicative of premature senility; corpora lutea were not discovered; and germinal epithelium not present.

Comments. The cases which are outlined above show the inter-relation between some of the ductless glands. Briefly, the outstanding features in the cases were:
CASE I. Married when nineteen years old and became the
mother of eleven children. Indefinite swelling of the neck at age
of twenty-five years. Onset of acromegaly shortly after meno-
pause. It is presumed that a hyper-functioning of the pituitary
occurred here, and it is interesting to note its occurrence after
whatever influence the ovaries exert had become to a certain extent
quiescent.

CASE II. Thyroid enlargement at the age of ten, gradual
enlargement for two years, and commencing again when acromegaly
symptoms commenced. Early menstruation, early physical de-
velopment. Married at eighteen, and mother of ten children, last
child born when mother was thirty-four years old. Menstrual
disturbance before menopause, and onset of acromegaly about the
same time. X-ray photograph showed some widening of sella
turcica. Slight ocular disturbances. Presumably hyper-function-
ing of pituitary with sympathetic thyroid enlargement at a time
when ovaries cease to function.

CASE III. Early menstruation (at twelve years); married at
thirty-five, two children born. Gradual thyroid enlargement at
forty. Acromegaly symptoms shortly after menopause, duration
fourteen years. Death from cardio-respiratory failure. Autopsy
findings: marked hypertrophy of anterior lobe of pituitary, con-
sisting exclusively of basophilic cells of great activity. Adeno-
cystic colloid change of thyroid, with slight fibrous and calcareous
change; marked hypertrophy of adrenals. Marked fibrosis of
ovaries with a few small cysts. Hypertrophied and dilated heart;
voluminous lungs; myxœdema-like changes in skin.

As to the causation of acromegaly little is known. Marie was
of the opinion that although the disease was accompanied by pituit-
ary enlargement, it was due to a decreased secretion of the pituit-
ary cells. This view has not been held in recent years, the hyper-
trophy of the gland presupposes increased function—increased
secretion—the nature of which is unknown. The evidence is rather
conclusive that in the majority of cases of acromegaly and gigantism
the pituitary is hypertrophied; when the hypertrophy occurs
early in life, before ossification is complete, gigantism is produced;
when it occurs after this period, acromegaly is the result. Other
interesting features about gigantism are loss of sexual functions,
poor mental development, and short period of life. Hypo-function-
ing or hypo-secretion, on the other hand, when congenital, causes
retardation of growth, amounting to infantilism, and when it occurs
later in life the condition first described by Frölich occurs: loss of
sexual characteristics, adiposity, etc. As to what part the other ductless glands play in the causation of the respective conditions is unknown. Woods Hutchinson attributes to the pituitary the function of a growth centre regulating the growth of the body.

Extracts of the anterior lobe of the pituitary produce no appreciable effect on injection into the body, but extracts of the posterior lobe, although it is not definitely glandular in structure, produce a rise in blood pressure more prolonged than that obtained from adrenal extracts. Further analogy with the adrenal is shown by the fact that the adrenal has likewise a double origin, nervous and glandular.

There are several theories of acromegaly:

1. Marie's, that it is due to decrease of the hypophysial secretion.
2. Majendi and Von Recklinghausen's nervous theory, that it is due to a change in the nervous system.
3. Freund and Campbell's, that is is not a disease, but merely a reversion to a lower type, an anthropoid ape type.
4. Klebs', that it is due to a persistent thymus, particularly an increase in the vascular arrangement.
5. That it is due to disturbances in the organs of generation.
6. That it is due to a diseased condition of the thyroid.
7. That a lesion of the pituitary is not the only cause, but that abnormalities in the internal secretion of the thyroid and genital glands contribute to the causation (Parisot).
8. That it is due to over-secretion of the pituitary.

Without discussing in detail these theories, it may be said that, whilst positive proof has not yet been advanced to show that over-secretion of the pituitary is the cause of acromegaly, yet there is little reason to doubt that this is the cause. Myxoedema is believed to be due to under-activity, and Graves' disease to over-activity, of the thyroid. There is no hesitancy in attributing to the other ductless glands certain well-known disorders, so that it is not unreasonable to attribute acromegaly to abnormality of pituitary secretion, probably over-secretion, and that the condition described by Fröhlich, and generally termed hypopituitarism, is due to under-secretion of the organ. Furthermore, there exists a number of cases which cannot be classified as due to over—or under—secretion of the pituitary, but which display vague indefinite symptoms suggestive of slight disturbances of the gland.

Further evidence may be offered in support of the over-secretion theory: (1) Experimental removal of the pituitary in
young animals retards growth. (2) Surgical removal of portions of the diseased gland in acromegaly has led to improvement of the symptoms. (3) In acromegaly the pituitary is abnormal, either enlarged, or there is a marked increase in certain cells of the gland.

Relation Between Pituitary, Sex Organs, Thyroid and Adrenal.

Clinical and experimental findings have shown that a close relationship exists between the pituitary and the other ductless glands. That the pituitary increases in size in pregnancy has been demonstrated at autopsies following parturition. Erdheim and Stumme find that a third type of cells, which they declare are normally present, more or less indifferent to the acid or basic dyes, increase in number during pregnancy, and fill the strands of the organ. In animals that have been deprived of their ovaries or testicles, the pituitary enlarges. Clinically, cessation of menstruation in the female, and impotence in the male have been observed as initial symptoms of acromegaly. Exner's observations are of great interest; he reports two of Hochinegg's cases of acromegaly, who, after removal of a portion of the hypertrophied pituitary, resumed their menstrual function, which had ceased at the beginning of the disease. Von Eiselberg reports the case of a male, aged twenty years, with symptoms of hypopituitarism, in which the infantile sex organs were a marked feature; successful removal of a pituitary tumour caused genital development one year later. Casey Wood reports the case of a married woman, aged thirty-nine, who consulted him for eye symptoms, and who gave a history of menstruating about once a year since the age of thirty years; an x-ray showed enlargement of the sella turcica.

Atrophy of the sexual organs has followed removal of part or the whole of the pituitary, as reported by the majority of workers. The extraordinary feature about this phase of the question is that sexual functions cease, or are much diminished, in cases where the pituitary shows a hyperplasia or a hypoplasia in adults, whilst if either of these conditions occur before adolescence is reached a condition of infantilism of the sexual organs is produced. Our cases offer corroborative evidence of the intimate relation between the sexual organs and pituitary disturbance. Interesting cases have been recorded where pressure effects on the pituitary have produced symptoms referable to that organ. Reismann reports the case of a woman, aged thirty-two, who failed to menstruate for seven months, with a small uterus and enlarged breasts, and general increase in the size of her body; at autopsy there was found a
malignant cystic swelling at the base of the brain, which pressed upon a normal-looking pituitary, causing disturbance of blood supply, and probably of secretion of the organ. Another interesting observation was made by Schutz, viz., that castrated horses had a pituitary longer and heavier than studs.

Relation of Pituitary to Thyroid: Cases II and III in our series illustrate very well the close relationship between the pituitary and thyroid. Rogowitzch found that hypertrophy of the pituitary followed thyroidectomy in dogs and rabbits, and he considered they were closely related in function. Hofmeister arrived at much the same conclusions. Schönemann reported increased formation of colloid material, increased number of chromophiles, and increased blood supply in the pituitary in cases of goitre. Collins, as reported by Tilney, states that "the compensatory or vicarious relation between organs of different functions is a general principle, indicating the retention of some element in their cells which persists in them as a result of a derivation from a common cell type." In the two cases reported by Exner, where the pituitary had been operated upon for the relief of acromegaly, there was found later hypertrophy of the thyroid.

Caselli considered the pituitary to be merely a supplementary thyroid. Woods Hutchinson, in 1898, found in twenty-three cases of acromegaly that the thyroid was enlarged in five, atrophied in seven, and had a normal appearance in eleven.

Boyece has reported two cases of myxœdema each of which was associated with enlargement of the pituitary and atrophy of the thyroid. In nearly all of the experiments which have been performed on animals to show the vital necessity of the organ, this at least has been gained from the work—that the thyroid almost invariably enlarged after pituitary removal. The argument that acromegaly is produced in part by disturbances of the thyroid is nullified by the fact that there are numerous recorded cases of thyroid disturbances of all sorts without the occurrence of a single acromegalic symptom. It would seem that there is a close relationship between the pituitary and the thyroid, and that deficiency in the one is compensated to some extent by the other.

Relation to Adrenal. The relationship between the pituitary and the adrenals is of great interest, from the fact of their analogous development, and from the somewhat similar effects produced by injection of extracts of the portion of neural origin. Whilst a number of observations have been recorded to show the relationship of the adrenals and the sex functions, very few are found in
the literature on the relation of the pituitary to the adrenal. Case III of our series showed a remarkable hypertrophy of the adrenals. Geddes in a report of an autopsy on an acromegalic subject—reports enlarged adrenals; in fact, his findings were similar to ours in every particular. The hypertrophied pituitary, the enlarged thyroid and adrenals with atrophied ovaries, forming a close resemblance to our case of acromegaly which came to autopsy. Marengli is authority for the statement that "removal of the adrenals in rabbits causes hypertrophy of the pituitary."

Is the pituitary essential to life? With this question in mind, many experiments have been undertaken from Horsley, in 1886, down to the present. Our limited knowledge of the physiology of the organ has been gained from incidental observations made from experiments with this object in view. It is somewhat remindful of the historical aspect of physiology, when nearly every organ of the body was experimented upon with a view of finding out whether it was a vital organ or not. There seems little need for experiments of this kind, for we know that the really vital organs of the body are few, all are to a certain extent essential, but many can be dispensed with if the other organs are allowed a little time to compensate for them. There is a great difference in removing organs for experimental purposes and for pathological reasons. In removing for the latter cause, the other organs of the body have gradually compensated for the diseased member's work; whilst in the experimental work, a great shock is sustained by this sudden removal of a healthy organ, and the other organs are not able to rapidly adjust themselves to the change. Yet, in spite of this handicap, experimenters are able to report that a number of animals of every species experimented on have survived the operation.

As this question has not even yet lost interest (although why it should not have been forgotten long ago, is probably only explicable on the ground that the pituitary was a practically unknown organ), it may be of interest to mention the names of those who have worked on the question: Horsley, Friedmann and Maas, Fichera, Gemelli, Eisellberg, Ascoli, Aschner, Tilney, are amongst those who consider the organ unessential to life; whilst Vassali and Sacchi, Caselli, Pironne, Paulesco, Livon, Gatta, Cushing, Norbout, consider it essential.

Within recent years the organ has been interfered with surgically, and physiological experimental work has been confirmed. Large portions of the organ have been removed, cysts have been
drained, and the patients have survived, and improvement and cure has followed; so that there is very little doubt that this small organ is not a vital centre, and can be removed without a fatal result. The fatalities which occurred in the work of many men, due to shock, hemorrhage, and infection, and the symptoms which were described as occurring shortly after the removal, were due to sudden interference with its function and to operative trauma.

The writer desires to thank Dr. O. C. Gruner, pathologist to the Royal Victoria Hospital, for permission to study the organs removed at autopsy from Case III.

BIBLIOGRAPHY.

Berkely, Johns Hopkins Hospital Reports., iv, 1895.
Boyece, Jour. Path. and Bact., 1892, p. 224.
Caselli, Pfugler's Arch. f. ges. Physiol., 1898, lxxiii, 385; Regio Emelia, 1900.
Casey Wood, Ophthalmic Record, March, 1908.
V. Cyon, Arch. d. Physiol., 1898.
Haller, Morph. Jahrbuch, 1896, Bd. 25, IIft. i.
Hallion and Alquier, Comp. Rend. Soc. de Biol., 1908, Ixv. 5.
Herring, Quart. Jour. Exp. Physiol., i, 1908, p. 121.
Horsley, Lancet, 1886.
Livon, Marceleles Méd., 1908, xlv, 745.
McCosh, Med. Record., 1907, ii, p. 1080.
Marengli, Lo sperim., 57, 1903, Marz.
Oliver and Schaffer, Jour. Physiol., xviii, 1895.
Pamberton and Sweet, Arch. of Int. Med., July, 1908.
Dr. Anglin, the superintendent of the Provincial Hospital for Nervous Diseases at Fredericton, N.B., is of the opinion that the lunatic is born rather than made. He says: "A true exciting cause is usually hard to find." The number of patients admitted to the hospital during the year was greater than usual—83 men and 79 women. In 91 of these cases more or less definite hereditary taint was known to exist, and in 64 no exciting cause could be recognized. The hospital contains at least one hundred patients more than it is intended to accommodate; on November 1st, 1912, there were in the hospital 302 men and 241 women. During the year 716 patients were treated. Over seven thousand have been admitted to the hospital since it was opened—4,280 men and 3,127 women. Of these, 2,940 were restored to health and 1,218 were more or less improved. The death rate during the past year was 6.14 per cent.; that is, 44 deaths occurred and 18 of these were upwards of sixty years of age. The cost of maintenance during the year was $85,212, the per capita cost being $151.60.
ABDOMINAL INJURIES

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In the short paper that I wish to present before this association, I will briefly discuss the diagnosis and treatment of injuries in the abdomen without any wound or apparent injury to the wall of the body. To all the older practitioners I need scarcely say that the methods in vogue twenty-five to forty years ago of dealing with such injuries were purely of an expectant character. No attempt was made surgically to find out what organ was injured or whether anything could be done to repair the injury. In illustration of the method of treatment permit me to refer to an accident that occurred about thirty-five years ago, where a man about forty years of age was kicked on the abdomen by a horse. The only treatment adopted was absolute rest in bed, the head and shoulders elevated, and large doses of opium to control the pain and also to allay the peritonitis which was expected to follow. The issue was fatal in three days. In another case, a man of seventy fell down a stairway. He was partially unconscious when found, and after the lapse of an hour or two began to complain of intense pain in the abdomen. The same treatment was followed also in this case. Death occurred in three or four days. Occasionally, even with this method of treatment, a patient recovered, but the large majority died in a few days.

During the past twenty-five years, as the possibilities of abdominal surgery have become better understood, the method of treating these cases has been completely changed, with very happy results. Instead of an expectant treatment, it is now the established practice for the surgeon to operate as soon as he is convinced that there is a serious lesion within the abdomen. In the large majority of cases, unless called too late, he saves the life of the patient, even in cases of very grave lesions.

Before I proceed farther in this discussion, I wish briefly to relate three cases, which occurred in my own practice.

Read at the Annual Meeting of the Canadian Medical Association, Edmonton, 1912.
I. A man of sixty stumbled over the edge of a large iron kettle, the rim of which struck him on the left side just below the costal margin. After receiving the injury, he was able to go about, but within two hours the pain became so severe that he was brought to my son's office for advice. Finding evidence of serious internal injury, the doctor sent him at once to St. Joseph's Hospital for further observation. In a few hours it became evident from the weak, irregular pulse that haemorrhage was going on within the abdomen. Immediate operation was advised, and on opening the abdomen it was found that there was a complete rupture of the spleen, and the abdomen was greatly distended with blood and clots. The spleen was excised, as much of the blood and clot removed as was possible without irrigation, and the abdomen promptly closed, as the condition of the patient would not justify prolongation of the operation. An early, complete recovery followed.

II. A lad of eighteen or nineteen, engaged in a game of football, suffered a severe injury in the abdomen from being struck by the knee of another player. It was fourteen hours afterwards, when I first saw the case in consultation. I found the wall of the abdomen rigid, the temperature 101°, pulse over 100, and that the patient had suffered much pain during the night, and had vomited several times. From the history I diagnosed rupture of either the stomach or bowel, the former most probably, as the game was played immediately after the patient had had a hearty meal. However, at operation it was found that it was a portion of the ilium that was ruptured, transversely, about half the circumference of the bowel being torn, with discharge of gas and faecal matter into the peritoneal cavity. The rent in the bowel was closed, and as clean a toilet was made of the peritoneal cavity as was possible. A large rubber drain was carried down into the cul-de-sac, and the patient's head and shoulders raised after the operation. His recovery was stormy the first three days. The cause no doubt was that the operation was too long delayed after injury.

III. A stout man fell a distance of ten or twelve feet and with him the ladder on which he had been standing. On seeing him half an hour afterwards, he was suffering great pain which he referred to the lower part of the abdomen, and with that pain he had constant desire to void urine. After giving him a full dose of morphine to relieve his great suffering, he was taken to the hospital in a sitting position, and directly to the operating room. After using a catheter, an ounce or two of bloody urine came away, thus confirming the diagnosis previously made of rupture of the bladder. Owing to
the obesity of the patient the incision had to be nearly six inches in length, and before the bladder could be inspected almost the whole of the small bowel had to be lifted out of the abdomen. Then it was found that there was a rent in the summit of the bladder, one and three-quarter inches in length, extending transversely, more towards the left side. The rent was closed by a row of catgut suture through all the coats, and a Lembert suture for the peritoneum. A catheter was kept in the bladder for five or six days, and a long cigarette drain carried down to the cul-de-sac. An early, easy recovery followed the operation.

The three cases I have briefly related were chosen in order upon them to base such remarks as I wish to make on the diagnosis of abdominal injuries. This paper is only intended to deal with such injuries as present symptoms so grave as to raise the question of internal haemorrhage, perforation, or rupture. Where the symptoms do not indicate gravity it will be perfectly proper to delay for further observation. Cases will occasionally occur when there is room for doubt whether or not a lesion has occurred. The safer course here is to operate, but the surgeon must decide each case on its own symptoms. In cases like those which I have related, the immense importance of an immediate diagnosis is very apparent. Delay in either of these cases would have been disastrous. In the second case, through no fault of mine, the case was delayed six hours after I had advised and insisted upon immediate operation. It was about twenty hours after the accident when the operation was performed, with the result of an extremely narrow escape. In the third case operation followed within four hours, and in the first case within twelve.

Diagnosis. If the surgeon is called to the patient immediately after the occurrence of the accident, in severe cases the diagnosis, when some lesion within the abdomen has occurred, can be readily arrived at from the symptoms.

The extreme pain in the abdomen complained of by the patient, should receive very serious consideration. Generally speaking there is no movement of the abdomen in respiration, on account of the pain, and any attempt at pressure or percussion greatly increases this pain. In the cases seen early, the shock itself bears strong evidence that something serious has occurred. If seen after the lapse of several hours, there may not be any evidence of shock. Consequently, in giving any weight to the presence or absence of shock, the surgeon must bear in mind the number of hours that have elapsed from the time of the accident. In the later cases, if no opium
has been given (and it ought never to be given until a definite diagnosis has been made), rigidity of the wall of the abdomen is one of the strongest evidences that a serious lesion has occurred within the abdomen. During the early shock the pulse will be feeble, soft, and may or may not be increased in frequency. Later on, say in twenty-four hours, except in the gravest cases, the pulse improves somewhat, becomes more rapid and eventually wiry. During the shock the temperature is always one, or two, or three degrees subnormal. As the shock passes away, and peritonitis develops, the temperature may rise to 102° or 103°, to fall again if the case is proceeding to a fatal issue. Let me here add a warning against placing too much reliance upon pulse or temperature. I have known a patient with a temperature of 99°, and pulse of 72 to have the abdomen full of pus from a ruptured gangrenous appendix. In my judgement, though I attach the chief importance to the severity of the pain, degree of shock, and rigidity of the abdominal wall, yet I hold that the diagnosis should not be based on one or two symptoms, but should be arrived at from a careful weighing of all the symptoms.

TREATMENT. The treatment is surgical, and every hour of delay counts against the patient in his chances of recovery. After a serious injury involving the abdomen, where the pain is extreme, the wall of the body showing considerable rigidity, the pulse of small volume, with increased frequency, and probably a subnormal temperature, even if no definite diagnosis can be made of the part involved, yet an immediate exploration of the abdominal cavity should be insisted upon. If we wait until the symptoms are sufficiently clear to enable us to say what organ is affected, and what has occurred within the abdomen, the chances are against successful operative interference.

The new hospital for mental diseases at Mount Coquitlam, B.C., will be opened very shortly. It is beautifully situated and most attractive in appearance. Measuring four hundred and eighteen feet in length and seventy feet in height, it has accommodation for six hundred and fifty patients. This is the first building of a series which it is intended shall be erected; the land belonging to the institution extends over nine hundred and ninety-eight acres.
“Marching,” said Jomini, one of the great writers on the art of war, “is nothing more or less than the science of applying all possible military knowledge.” That being so, all the knowledge, military and medical, possessed by the medical officer, must be at the disposal of the officer responsible for the march. He must first recognize the importance of the march and his relation to it. “Marches may be looked upon as the foundation of all operations, and battles the end or result; troops must arrive on the spot where their action is required at the right time and in fighting condition” (Von Schellendorf). It may be said that the present development of the means of locomotion by rail, etc., has made great marches unnecessary. The late Manchurian and the present Balkan war may be referred to as showing this. The troops in Manchuria or in Thrace did not perform great marches. That is true as far as the strategical march is concerned, but it is not true as regards the tactical. Modern war—as demonstrated by these two wars—is characterized by continuous fighting over large and extended areas. The strategical concentration may be effected by rail, but a greater burden of march than ever is thrown upon the troops. The moving is combined with fighting, and the fighting incorporated in the moving. As I quoted before, to arrive on the spot where their action is required at the right time and in fighting condition is as important as ever. It can never be more important—for it is the fundamental fact of the whole art of war.

In Canada strategical marches would have to be made; we have not a network of railways as in Europe. These marches would be severe and would have to be made while troops are raw and untrained. The medical officer must realize the part he has to perform, to assist in bringing the troops into a condition to accomplish whatever strategical or tactical task is assigned to them. The conditioning of these troops will not be an easy matter. Fifty years ago it took Jackson many months of heart-breaking work before he conditioned his raw infantry into his superb foot cavalry;
but he did it. A hundred years ago, Crauford did the same thing with his famous Light Division in the Peninsular. The first were mobilized civilians, the latter were the supposedly highly trained regulars. It was the personality of these two men that brought about the result. But we can not always rely on personality. It is safer to rely on organization, education, and training.

It is well for us to study this great question of the moving of troops in the strategical and tactical game in which we shall play our part, and this subject touches the medical officer in many ways. The whole object of the Medical Service is to render men more efficient physically; the medical officer should estimate the physical capabilities of the raw recruit and ever see, in his mind's eye, the finished fighting and marching machine that the polished article may become.

The Canadian mobilized army would not be a regular army. It would be a mobilized collection of untrained or partly trained, and in few cases, highly trained, militiamen; excellent raw material to work on—high mentality, splendid physical fitness, and all the characteristics of a free and growing population. Let us each picture to ourselves our several positions, and our various duties, on mobilization. Let us endeavour to realize how this great question of mobility affects us as individual officers. The time given for mobilization may be very short. In Bulgaria the infantry mobilized in six, the cavalry and artillery in twelve, days. It is true that the strategical concentrations may be by train, but every move, even by train, demands a certain amount of marching. The recently mobilized man finds himself under very strange surroundings. He may have been a good militiaman, he may be a crack shot; but here he finds things very different from the camp of training or the rifle range. He may shoot straight, but he will find it hard to march straight when he is burdened by all that is necessary for a soldier to carry, if he is to be of any use. There is no electric car to carry him and his belongings to the butts of the battlefield. A soldier to be self-supporting for one day, must carry a load of, at least, forty-five pounds. He must carry more on the march, about equal to an ordinary suit-case well filled with clothes. There is no porter or boy to carry it on the road leading to glory.

The soldier cannot, and must not, be separated from his armament, his food, or his clothing. If he were, he would soon become useless and a straggler. The weight and character of his armament—i.e., his rifle, his ammunition and bayonet—is governed
entirely by the question of its efficiency, and with that the medical officer has nothing to do. With the carrying of his food, his clothing, and in some cases his shelter, on the march, the medical officer has much to do. He must study the question of rations, and their carriage, of water and its purity, of clothing and its usefulness. The method of carrying of all three,—food, clothing, and shelter—demands medical attention. Physiologically, the human machine will only endure so much strain. It is, therefore, the work of the medical officer to see that that straining point is never reached. It is our work, also, to supervise the means by which, artificially, the anatomical and physiological material of this human machine is perfected, so that the physical powers of the soldier are developed to the highest degree, and his efficiency, as a marcher and a fighter, reaches the point of greatest usefulness to his commander and to his country.

The report of the Nova Scotia Hospital for the Insane for the year 1912, gives the following information: the total number of patients under treatment during the year was 639; 210 applications for admission were received, and 181 were accepted. One hundred and forty-one patients were discharged, of whom 67 were considered to have been cured, 21 were classed as "improved," 4 were deported, and 53 were either transferred to county asylums or returned to their homes unimproved; 41 deaths occurred during the year. The cost of maintenance amounted to $101,790.88. Changes in the staff have been unduly frequent during the year and this has been somewhat of a drawback to the efficient carrying on of the work. The hours are long and the duties difficult, and it would seem that the remuneration is none too great. It is hoped that it will be possible to make the position of nurses and attendants more attractive, and thus induce those who hold these positions to continue their work for a longer period of time.
Editorial

MEDICAL ETHICS AND DR. FRIEDMANN

INEVITABLY there has been much discussion as to whether members of the profession in regular standing, and bodies like the National Association for the Prevention of Tuberculosis, the Royal Edward Institute, and the University of Toronto, have acted wisely in inviting Dr. Friedmann to give in Canada a demonstration of his mode of treatment. Such invitation might well be deemed to imply approval of methods that contravene the code of ethics which should govern medical men in English-speaking countries. Let us say that we fully recognize the difficulties of the position: that those who invited Dr. Friedmann to Canada undertook a heavy responsibility, but, endeavouring to weigh the arguments pro and con, we consider that their action was both politic and humane.

That, from a professional standpoint, Dr. Friedmann has been unwise and ill-advised in his mode of procedure goes without saying. So far as we can learn, he came to this continent without invitation from, communication with, or introductions to any medical body or individual leaders in the practice or science of medicine. His advent heralded, and, since his arrival, his every movement chronicled in the lay press, it is little wonder that he has incurred opprobrium. At the most generous estimate—which, however, from his attitude while in Canada, we believe to be the correct estimate—his conduct has been that of a man so assured of the efficacy of his discovery and of its value, as to expect fully that he would be received with open arms, that the leading hospitals would place their wards at his disposal and the leading physicians
and surgeons rally to the welcome of one who had found the means to overcome humanity's greatest scourge.

It may be that the action of the United States government in itself led him to anticipate a cordial reception; for with the approval, if not the recommendation, of the late president, there has been printed as a Senate publication a full translation of his report last November to the Berlin Medical Society, and of the discussion which followed, forming a State paper of more than fifty pages. It is equally evident that he is not a Pasteur or a Lister: that he was ignorant of, or ignored, the attitude of English—and French—speaking medical men towards the keeping secret and the patenting of remedies. If fellow-countrymen of his, bacteriologists whose names are household words the world over, could so patent and protect their products as to ensure to themselves reasonable remuneration, not to say handsome fortunes, and if the world, apparently, regarded them with no lessened respect, it is probable that he had no expectations of being made a scapegoat, if for a time he kept to himself the exact constituents of his medium. But, making this admission, it is not our fault if we view his actions with disapproval, and if this has been the attitude and he has had a rude awakening, his advisers have been to blame, not the profession in America. If his object is to prevent what is a very delicate preparation, difficult to administer, becoming exploited by opposing firms of wholesale druggists, and to negotiate with governments that they may control the preparation and distribution of his medium, he should have announced this in the pages of the medical press.

What has been the result of these unwise methods? Since his arrival in New York, the lay press from one side of the continent to the other has had daily columns bearing upon Dr. Friedmann, his methods, his results in Berlin, his projected movements and his difficulties. There have been all kinds of rumours regarding State and federal action. All these weeks no reputable body of medical men has ventured
to state that his method is valueless. On the contrary, those bacteriologists most qualified to judge, from the late Dr. Koch downwards, admit that the hope of discovering the means of protection against and cure of tuberculosis lies in the discovery and employment of living tubercle bacilli that are avirulent, and Dr. Friedmann's statement is that he has at last made cultures of tubercle bacilli from a cold-blooded animal, the turtle, which he has found to be absolutely avirulent, and that these form the basis of his inoculations.

It is true that men who are well-known have signed a report pointing out what he cannot do under State and federal laws. Beyond this the medical profession of the United States as a body has left him severely alone, and the consequence has been that throughout this continent those suffering from tuberculosis have gained the impression that here at last is afforded a cure for this terrible disease, but that for some reason which they cannot comprehend, the medical profession is doing its best to hinder the use of it. It is the sanitorium and dispensary physicians and those actively interested in the campaign against tuberculosis, who realize most fully the harm that is being produced by this state of unrest, the piteousness of the appeals that have poured in that they should secure and employ Friedmann's remedy, the widespread discontent caused by evasive, not to say negative, answers to those appeals.

In these circumstances, to alleviate this unrest, to assure the victims of tuberculosis and the general public that our profession, far from being opposed to the discovery of a means of cure, is earnestly anxious to test every method that affords a gleam of hope, the only wise policy was to offer Dr. Friedmann the opportunity to demonstrate the effects of his treatment under conditions such that there could be no reasonable doubts as to the bona fides of the tests, or as to the results obtained. It is of not a little interest to note that this conclusion was reached almost simultaneously by the Royal Edward Institute in Montreal, the National
Association for the Prevention of Tuberculosis, and the University of Toronto. Thus it is that before the medical profession Dr. Friedmann has inoculated fifty-six cases of various forms and stages of tuberculosis in Montreal, seventeen cases in Ottawa, and forty cases in Toronto. The National Association has appointed a committee of five to observe the inoculated cases and report upon the results obtained. In from five to seven weeks we are told that a large proportion of those treated will need a second inoculation. It is therefore improbable that this committee can report for two or three months, and until then judgement must be suspended.

To Dr. Friedmann's credit he has refused to enter into negotiations with the United States authorities regarding the details of his vaccine and methods until there has been an official report upon the results of the New York inoculations. Such attitude is not that of an adventurer, but of a man convinced that he can "deliver the goods." We admit willingly, also, that Dr. Friedmann impressed all who came into contact with him during his recent visit to Canada as being a keen, not to say nervous, and sincere laboratory worker, with striking absence of indications of commercialism or worse traits. He appears to be the student and nothing beyond. Saying this we would not absolve him: nor again would we raise false hopes. We believe that he is absolutely convinced of the efficacy of his methods. At the same time we have known men of science to become obsessed, to become so filled with the particular object of their research as to be incapable of judging aright. The next few weeks will show whether this is the case with Dr. Friedmann. In the meantime he has been afforded a fair field and fair play by the Canadian medical profession, and this for the public good.
PREVENTION OF TUBERCULOSIS

THE annual meeting of the Canadian Association for the Prevention of Tuberculosis held in Ottawa, on the 12th and 13th of March, under the presidency of the Hon. Adam Beck, was notable as being graced by the presence of His Royal Highness, the Duke of Connaught, and by Dr. Friedmann's address upon the principles underlying his treatment of tuberculosis. As a result, despite the brief notice calling the meeting together, there was a larger attendance than on any previous occasion, so much so that the Russell Theatre was engaged for the opening session, while at Dr. Friedmann's demonstration at the General Hospital more than one hundred and fifty medical men were in attendance, including most of the leading specialists in tuberculosis in Canada. His Royal Highness has constantly shown interest in the campaign: once again he manifested that interest by devoting to the association a large portion of one of his last days in Ottawa, prior to his departure for England. In fact, his addresses at the opening session and at the formal opening of the Perley Home constituted his last public utterances prior to what all hope is but a temporary absence from the Dominion.

Sir James Grant took part in the opening meeting, and prefaced the brief and clear paper by Dr. Friedmann on the basal principles of his method, by recalling that in 1861 he had recorded good effects from the employment of ordinary vaccine lymph in the cure of blood poisoning.

In the afternoon His Royal Highness opened the admirable pavilion erected by the Hon. Mr. Perley, in memory of his wife, for the treatment of early cases of tuberculosis, the companion "Lady Grey Hospital" henceforward being employed for advanced cases only.

Other papers given on the evening of the 12th, and the morning of the 13th, were by Dr. Hastings, Medical Health Officer for the city of Toronto, upon the responsibility of the
municipality on tuberculosis problems; by Dr. Richer, Ste. Agathe, on the particulars of the Paterson method of graduated exercises in the treatment of the disease; by Dr. J. H. Elliott upon tuberculosis in childhood; Dr. E. S. Harding, upon the employment of tuberculin in dispensary treatment; and by Dr. J. W. S. McCullough, Chief Health Officer of Ontario, on the tuberculosis problem in Ontario.

THE ANNUAL MEETING

The annual meeting of the Canadian Medical Association will be held in London from June 24th to 27th. The president-elect, Dr. H. A. MacCallum, and the local committee are actively engaged with the arrangements for the meeting. Their spirit and resolution is to make the event a notable one in the history of the association. Members, at the moment, are considering the serious question of their attendance,—and to members at large the question is a serious one. It involves a consumption of time, in many cases a long and expensive railway journey, with provision for carrying on the work of the practitioner during his absence, since a physician in a country district cannot abandon his work as readily as his confrere in the city. To many practitioners this visit to London is all the holiday they may expect. In many cases it must take the place of a visit to the hospitals of some large city for refreshment of knowledge and an experience of new methods of treatment.

The real object of these meetings is not amusement or even entertainment; and in times past the profession in places where the meetings have been held burdened themselves unduly in the attempt to convert the occasion into one of extravagant merry-making. The value of the social advantages must not be underestimated, but they should not be allowed to overshadow all others,—and men can make, and renew acquaintances, in simple and inexpensive surroundings.
The scale of entertainment has been rising from year to year, until now a meeting has become so great a burden that many communities are willing to forgo the honour through dread of the expense. This excessive entertainment, although prompted by the virtue of hospitality, obscures the real value of the occasion; it is too great a burden upon the local men and, to tell the truth, it is a burden upon those who partake of it, especially to the older men, for it is the pleasures of life which make living so tiresome. In this respect Montreal has been the worst offender.

These meetings—and the reference now is to the meetings in general—find their main justification in the advancement of knowledge, in the stimulus and inspiration which they create. The event is too serious a one to be overwhelmed by the contingent. The last meeting at London, at which Dr. MacCallum also presided, was a model of what a meeting should be. The spirit of hospitality hovered over all the proceedings without interfering with them. The general addresses were germane to the subjects; the sections met at the appointed times; they continued to the end; the papers were read by the writers and not merely "by title." The discussions were full, free, and vigorous, and any tendency to prolixity, and incoherent reminiscence was instantly checked.

For, after all, the discussion is the most important part of the proceedings, if it is authoritative, critical, and born of experience. If that is recognized, men of experience will attend the meetings and yield up freely of their store; and men who are anxious to learn and judge will be only too willing to come together in a general consultation of the profession. Serious men expect to be treated seriously, and it is very discouraging to those who come bringing of their best to feel that their efforts may disarrange plans for an excursion or some other form of entertainment. London in June is one of the most beautiful cities in Canada, and there is diversion enough in walking its shady streets with the chance of meeting an old friend or making a new one.
The general committee has not in the past given sufficient help to the local committee. As a result, the programmes have not been well balanced. They have been overweighted with men whose affiliations were local rather than general, and their experience limited within a narrow range. To read a paper before this association is a privilege, but it has been seized by some and neglected by others to the detriment of all. It would be a proper suggestion to the local committee to make a demand upon the general committee for assistance in arranging the programme. Indeed it is upon the general committee this burden properly falls, and they should not be slow to assume it at least in part.

The Canadian Medical Association in respect of vastness of territory from which its members are drawn, of the proportion which its members bear to the number of those engaged in practice, of the actual attendance of members, and of the material which may be presented, is one of the most important medical societies in the world. It is now strongly established, and free from the control of any section or faction. It is in reality the profession, and it only remains for the profession to use its advantages to the full.

An attractive programme is being arranged for the annual meeting this year. On June 26th two symposia will be held, one on diseases of the stomach, led by Dr. Alexander McPhedran, the other on the thyroid, led by Dr. A. J. Ochsner, of Chicago. Amongst others taking part will be Drs. Stockton, of Buffalo, and Hoover, of Cleveland, and Drs. Halpenny, Olmsted, and Bruce. On the last day clinics will be conducted, the medical by Dr. Frank Billings, the surgical by Dr. John Murphy, of Chicago. The addresses in surgery and in medicine will be given by Dr. Alexander Hutchison and Dr. L. F. Barker, respectively. Another distinguished Canadian from Johns Hopkins who will be present is Dr. Thomas Cullen.

Those desiring to read papers or take part in the symposia are requested to communicate either with the secretary
HOSPITAL MATTERS IN SYDNEY

SYDNEY has not yet found an answer to the hospital question. Twelve years ago an emergency hospital of thirty beds was established by the Dominion Iron and Steel Company; and it has been maintained by them with the assistance of the usual provincial grant until the present time. This hospital—the Brooklands Hospital—has been used to the limit of its capacity by the general public as well as by the employees of the Steel Company, and, at first, the need for a more adequate hospital was not greatly felt. As the city became larger and the population increased, however, it became evident that a larger institution was needed and that the accommodation provided by the Brooklands Hospital was only sufficient for the employees of the company to whom the hospital belonged. Accordingly, last September, the president of the company intimated that patients, other than the steelworkers, could not be admitted to the hospital after a certain date; he offered at the same time to give the Brooklands property with its building and equipment to a properly organized board of trustees, on the condition that reasonable terms be arranged for the treatment of employees of the company and an assurance given that the work of the hospital be efficiently carried on. The proposal did not meet with the full approval of the civic authorities, who rather favoured the establishment of a separate municipal hospital, and, with this in view, voted the sum of seventy-two thousand dollars. The opinion obtains among many of the medical men of Sydney, that the action of the city council in this matter is open to criticism. The position occupied by the Brooklands Hospital is an ideal one and the best available, and it is understood that, had the offer been accepted, the
Dominion Iron and Steel Company would have given very material assistance to the new hospital. If the municipal hospital is established, the Steel Company will maintain its separate hospital and the municipal institution will lose the revenue that otherwise would come to it in return for the treatment of employees of the company. The matter is not yet settled and perhaps some happy compromise may still be effected.

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**COCAIN IN CANADA**

All civilized countries have statutory enactments which regulate the sale of patent, or proprietary, medicines. At a time when the people had free access to alcohol, no great need was experienced for these restrictions. But with the limitations upon the sale of this convenient and satisfactory intoxicant, it was discovered that the commoner household remedies might be used as a vehicle for its administration. The virtue of the alcohol was imputed to the drug, and remedies began to have an enormous sale in proportion to the amount of alcohol which they contained.

In time the public taste for adulterated alcohol diminished, and resort was had to the more subtle and bizarre intoxicants. New decoctions were manufactured, which were more portable than alcohol. At the same time they were found to be less expensive, equally potable, and more potent, all of which was of great gain, that is, from the manufacturer's point of view. The chief ingredients of these new nostrums were morphin and cocain, two master remedies against pain, as nitric acid is a powerful tooth wash. It is easy to understand how popular these nostrums became. A chorus of praise was heard in every advertisement.

But again serious persons began to doubt the wisdom of relieving pain and obscuring symptoms at the expense of creating the morphin or cocain habits. Legislation was in-
roduced against debauching the people by poisons which were much more insidious and demoralizing than alcohol. Accordingly, in Canada, an Act respecting Proprietary or Patent Medicines was passed. It is known as 7-8 Edward VII, and was assented to July 20th, 1908. By the terms of this Act no proprietary or patent medicine shall be manufactured, imported, exposed, sold, or offered for sale, if it contains cocain or any of its salts or preparations; if it contains alcohol in excess of the amount required as its solvent or preservative, or does not contain sufficient medication to prevent its use as an alcoholic beverage; if it contains any drug which is included under the schedule to the Act, but the name of which is not conspicuously printed on an inseparable part of the label and wrapper of the bottle, box, or other container. This schedule contained a list of thirty-one drugs. If any of these drugs formed a part of the nostrum, the name of such drug must appear on the wrapper. The list did not contain the name "morphin" or "opium," from which it would appear that nostrums containing these substitutes might be sold, as they were not specifically excluded; but on August 17th, 1908, under an order-in-council, morphin and its preparations, opium and its preparations and derivatives, were placed on the list. Patent medicines, even if they contained opium or its derivatives, might then be sold under the regulation. It was provided, however, that the minister might grant a certificate of registration without the printing of the name of any specific drug upon the label, if it appeared to him that the proportion used was not dangerous to the health.

From the above it will appear that patent medicines containing cocain were entirely outlawed. They were specifically excluded. Cocain did not appear upon the schedule. They could not be sold even if the name appeared on the label, nor could the minister permit them to be sold within the terms of the Act.

There are certain conditions, largely neurotic in origin,
accompanied by spasm of the bronchial muscles and turges-
ence of the mucosa, due to disturbed pneumogastric or vaso-
motor innervation. To this class belong hay-fever, and
asthma, and cocain often gives immediate relief. There is
one preparation which is widely known as an asthma cure.
According to an analysis made for the Journal of the American
Medical Association, it contained seven grains of cocain
hydro-chlorid to the ounce. The Lancet's analysis yielded
considerably less. It is especially well known in the United
States; one at least of the states specifically forbids its sale.
The proprietor has been prosecuted several times, and it
must be added that he has prosecuted his opponents for
libelling him,—once at least with success.

At the time of the passing of this Act, there was a large
importation of this nostrum containing cocain, which was
now debarred. The manufacturer felt aggrieved, and, what
is more to the point, his victims felt aggrieved too. The
manufacturer was only losing prospective profits. His vic-
tims were suffering their original pain, and the additional
misery of being deprived of the drug which alone could assuage
the appetite it had created. When the Act came into force
the manufacturer endeavoured to obey it. He removed
from his remedy every trace of cocain, but his customers
would have none of it. All virtue disappeared with the be-
loved cocain. They protested with one voice; but he replied
that the fault lay with their own government, and he urged
them to write to their representatives. Accordingly, members
of parliament have been inundated with letters from cocain
users, who may also be suffering from asthma, pleading for
their drug. We may readily believe that the unfortunate
writers are entirely truthful and sincere in their testimony
that they are benefited, temporarily at least, by the remedy,
and that they cannot do without it. Any drunkard will
testify as earnestly in favour of alcohol. As a result of this
pressure, instructions have been issued to collectors of customs
throughout Canada to permit importations of the nostrum.
With the legal aspects of the case we are not concerned at the moment, although it is worth remarking that there is no provision in the Act which warrants any minister, or the government itself, in breaking it.

We have the utmost of sympathy for sufferers from asthma, and even more, if possible, for sufferers from the cocain habit. At a time when the use of cocain is so widespread, and when the courts are making such desperate efforts to check it, it is an ill-timed procedure,—this flooding of the country with the drug through a legalized channel. Sufferers from asthma have still the services of the profession at their command, and can procure cocain for a legitimate purpose in a legitimate way.

This is clearly the view of the medical profession. The Academy of Medicine in Toronto, at a meeting on March 4th, passed the following resolution:

"Whereas it has come to the knowledge of the Academy of Medicine, Toronto, that the proprietors of an American preparation called Nathan Tucker's Asthma Specific are trying to induce the Canadian government to allow this preparation to be freely sold to the public, and whereas the Academy is aware that this nostrum contains about five grains of cocain per ounce, the Academy unanimously desires to put on record its strong approval of the 'Proprietary and Patent Medicine Act,' as it at present stands in regard to the sale of any cocain-containing medicine to the public. (The Act reads as follows: 'No proprietary or patent medicine shall be manufactured, imported, exposed, sold or offered for sale if it contains cocain or any of its salts or preparations.') The danger of the development of the cocain habit is such a great and rapidly growing one that, in the opinion of the Academy, cocain or any preparation containing cocain should only be sold on the written order of a qualified medical man who has personal knowledge of the person requiring the drug. Further, it fully endorses the rule that a prescription for cocain should not be permitted to be dispensed a second time without a fresh order from the physician."
And the opinion of the profession in Montreal is equally definite, as will be seen from the following resolution:

"The members of the Montreal Medico-Chirurgical Society, a society representing almost all the English-speaking members of the medical profession, have heard with alarm and regret that a patent and proprietary remedy, named Dr. Tucker’s Asthma Specific for the cure of asthma, hay fever and nasal catarrh, containing a very considerable amount of cocain, is now permitted to enter Canada, and to be sold without restriction. It is their unanimous opinion that the indiscriminate sale of any remedy containing cocain is fraught with great danger to the general public, and must eventually lead to the unloosening of the very necessary and proper restrictions placed on the sale of cocain by many of the provinces of the Dominion, notably, our own. They, therefore, strongly urge that if the remedy be allowed to enter Canada, it should be obtainable by the public only on the prescription of a registered physician in practice in the neighbourhood, who will be cognizant of the conditions existing in the patient, and the effects produced by the remedy; and that no second supply be obtainable on the one prescription."

HOSPITAL MATTERS IN CALGARY

Hospital matters in Calgary have been the subject of a good deal of interest and have been very prominently brought before the eyes of the public during the last few months. The rapid growth of the city necessitates increased accommodation, and the wisest method of procuring this has been warmly debated.

The General Hospital, with a capacity of one hundred and seventy-five beds, is overcrowded, and extensions are urgently needed. The hospital is governed by a board of directors, fourteen in number, seven of which are elected annually by the subscribers and life members, five by the
medical men of the city, and two by the city council. This board applied for a grant from the city of $150,000 to build a new wing. The city refused to submit a by-law for this, claiming that there was a strong sentiment in favour of a municipally owned and operated hospital, as is the case with the present isolation and smallpox hospitals. A conference was held, and a suggestion that a board composed of six from the city, four from the medical men, and four from the subscribers, be formed to control all hospital matters, the hospitals to be owned and supported by the city but controlled by this board. This was defeated in the city council and a new conference called. This meeting suggested that a board of control be formed who would own the title of all hospitals except private ones and receive from the city what monies it needed for extensions and running expenses; this board to be composed of three members elected by the subscribers, four by the medical men, and six by the citizens, the mayor to be the presiding officer and to have a vote, and also the deciding vote in case of a tie. This is to be submitted to the council and the subscribers of the hospital, and if it meets with their approval, a by-law will be at once submitted. If the grant is given, extensions to provide additional accommodation for one hundred and fifty patients will be made to the Calgary General Hospital.

The discovery has been made by Professor Wenck, of the Imperial Institute of Berlin, that tobacco destroys the cholera bacillus. During the cholera epidemic in Hamburg, it was observed that although several of the employees of a large cigar factory had been exposed to infection, none of them contracted the disease. Experiments were undertaken to demonstrate the effect of tobacco on the germs. A cigar was soaked in water containing about two million bacilli to the cubic inch; within twenty-four hours the bacilli were all dead. It was found also that the smoke of tobacco would destroy the germs in from half an hour to two hours.
The sixty-ninth annual meeting of the American Medico-Psychological Association will be held at the Clifton Hotel, Niagara Falls, from June 10th to June 13th, 1913. The president is Dr. James T. Searcy. The secretary-treasurer is Dr. Charles G. Wagner, Binghamton, N.Y.

It is probable that a hospital will be established in the neighbourhood of Clapham Common, London, which will be staffed entirely by women. The idea was originated by Dr. D. M. Chadman. It is thought probable that the hospital will be completed by the summer of 1914.

Beginning with the March number of the current year, the name of the Public Health Journal has been changed. It is now the "Journal of Health, Administration and Sociology." The journal will continue to be published under the original management and at the same address,—43 Victoria Street, Toronto.

The International Congress of Hygiene will meet this year at Buffalo, N.Y. The meeting will be held from August 25th to August 30th, under the presidency of Dr. Charles W. Eliot, president emeritus of Harvard University. The vice-presidents are: Dr. William H. Welch, of Johns Hopkins University, and Dr. Henry P. Walcott, of the Massachusetts Board of Health.

The adjourned meeting of the Dominion Medical Council will be held in Ottawa on Tuesday, June 17th, next, when the final arrangements will be completed for the examinations, etc., under the provisions of the Canada Medical Act.

An interesting light has been thrown on the question of putrefaction of meat in connexion with cold storage. Researches have been made by M. Piettre, of Paris, who has concluded that putrefaction is due to a large aerobic, Gram-staining bacterium of the proteus group. Putrefaction consists of ammoniacal and hydrosulphide fermentation, and is
characterized by a like odour and a green colouration of the tissues which are invaded by the organism during the cooling of the carcass. It is desirable, therefore, that meat should be cooled as rapidly as possible and placed in cold storage before it has become tainted.

An experiment is being made in South Africa with the object of preventing malaria. A quantity of the small fish known as "millions" are to be introduced from Barbadoes and distributed throughout the fever districts. These "millions" destroy the larvae of the mosquito and, therefore, are of great value in the prevention of the disease. The freedom from malaria enjoyed by the Barbadoes Islands is attributed to the presence of large numbers of these tiny fish.

A well qualified Christian male physician is required for a new hospital in South China, near Canton, where there is great opportunity for medical work. Other male physicians are needed for Central India, North Korea and North Honan, China. Three nurses also are needed for hospital work in these fields. Unlimited opportunity for Christian medical practice is to be found in these fields in the Orient, where the future medical profession is largely in the hands of the medical missionaries. Apply to the secretaries, Presbyterian Foreign Mission Board, 439 Confederation Life Building, Toronto.

The medical profession has too often heard the cry "Lo here, Lo there." Time and again it has gone out in pursuit of some vaunted discovery, and the more it looked the less it saw. The profession may well be pardoned if it retains an attitude of scientific detachment, interested not so much in what Dr. Friedmann says about his discovery of a cure for tuberculosis as in what he can prove. It will not have long to wait. Dr. Friedmann has come to Canada. He has had the opportunity of treating nearly two hundred patients in
Montreal, Ottawa, and Toronto, selected for him to his entire satisfaction. At the time of the present writing there is nothing further to record, and all we can do is to retain an attitude of expectancy and hope.

In these various cities hundreds of medical men witnessed the demonstrations. There was no lack of material. No difficulties, technical or otherwise, were placed in the way of the operator, and subject to a reserve of judgement he was received with a sympathetic curiosity. Possibly there were some who were disappointed that the profession was not more enthusiastic; but no display of enthusiasm would have affected the efficiency of the treatment. The results will be equally convincing in the cold atmosphere of scientific abstraction. In New York, the feeling of the profession was something more than negative. For this state of mind Dr. Friedmann must take all the credit to himself, since he did not choose to operate along the customary channels, and he was not careful to explain why America was so honoured at the expense of Berlin, Paris, and London.

There are now no official keepers of the professional conscience. The members are free, according to the idiosyncrasy of each, to approve, to disapprove, or to remain neutral. The profession is not a trade union, nor is it animated by the spirit of Demetrius. There were, of course, some sensitive souls who turned their eyes away, and found warrant for their excessive holiness in the letter rather than in the spirit of the law. If, in the end, Dr. Friedmann’s high claims are proven by the facts, none will rejoice more than the medical profession. If they fail, the profession will not have convicted itself of leading the people astray.

The ninety-first annual meeting of the Montreal General Hospital was held February 18th, when the following resolution was unanimously passed: “That from and after January 1st, 1913, no person shall be allowed to continue service on the attending staff of the hospital as physician or surgeon to
the indoor department, or as specialist, or as physician or surgeon to the out-patient department, or as assistant specialist, after having attained the age of sixty-two years.” Scant justice is here done to the value of experience, and if a physician should leave the hospital when he attains the age of sixty-two, it may be assumed that he should also leave his patients. At the age of sixty-two a physician is often at his best; therefore the hospital will be deprived of that best. Furthermore, many excellent physicians, whose years are creeping on, may hesitate to join the staff of a hospital where such a rule is enforced.

After a somewhat lengthy debate, the bill to incorporate the Canadian Medical Protective Association was passed on February 24th, with certain amendments. A good deal of misunderstanding prevailed as to the meaning of certain clauses. In section 2 of the bill, as originally drafted, the objects of the Association are stated to be: (a) to support, maintain, and protect the honour, character, and interest of its members; (b) to encourage honourable practice and assist in the suppression and prosecution of unauthorized practice; (c) to give advice and assistance to and defend and assist in the defence of members of the Association in cases where proceedings of any kind are unjustly brought or threatened against them; (d) to promote and support legislative measures likely to benefit the medical profession. Some difference of opinion was expressed as to the meaning of the words “unauthorized practice”; it was feared by some members that the clause in question was a direct affront on other schools of medicine,—for instance osteopathy, homoeopathy, or even Christian Science. After much discussion the clause was amended to read: “To encourage honourable practice of the medical profession.” Clause (c) did not meet with unanimous approval, and an amendment was suggested to the effect that advice and assistance should be given only after exoneration by the courts. The motion was lost.
Clause (d) was amended to read: “To promote legislative measures likely to improve the practice of medicine.” A further bone of contention was found in section (4) which read: “Until altered or repealed by the Association in general meeting, the existing constitution, by-laws and rules of the said incorporated society, as adopted in August, one thousand nine hundred and one, and amended from time to time subsequent thereto, in so far as they are not contrary to law or to the provisions of this Act, shall be the constitution by-laws and rules of the Association.” The following clause was substituted: “The Association in general meeting may from time to time pass rules and by-laws of the said Association, in so far as they are not contrary to law, or to the provisions of this Act, in like manner, alter or amend the same.” As the amended clause was practically the same as section 6 of the bill as originally drafted, this section was omitted. An additional clause was also added to the bill; it reads: “Nothing in this Act shall be deemed to encroach upon the rights and privileges conferred upon any other similar association having a charter or which may hereafter have a charter, from the legislature of any province of Canada.”

An English-speaking conference on the prevention of infant mortality will be held in London under the direction of the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, on August 4th and 5th, immediately before the International Medical Congress. The meetings will be held in Caxton Hall, Westminster, under the presidency of the Hon. John Burns. The chairman of the English Executive Committee is Sir Thomas Barlow. The subjects for discussion include: The responsibility of central and local authorities in the matter of infant and child hygiene; medical milk problems; the administrative control of the milk supply; the necessity for special education in infant hygiene; and ante-natal hygiene.
**Book Reviews**


Dr. Hewitt was probably the first in England to give specific attention to the administration of anaesthetics. Before his time the task was usually entrusted to a porter, a nurse, or to the first student whom an operator could lay his hands on. When Dr. Hewitt appeared on the scene—it was in the London Hospital over twenty years ago—some wonder and amusement was created amongst the house surgeons, that any physician should undertake such a queer trade. From that date to this Dr. Hewitt has pursued his specialty, and now is described as Sir Frederic W. Hewitt, anaesthetist to His Majesty the King, and late anaesthetist to His Majesty King Edward VII. The little book which he published about that time has now grown to a volume of nearly seven hundred pages, and it contains everything that is known about the subject. Due prominence is given to the value of chloroform as an anaesthetic, and the means by which it is to be administered are clearly set forth; also the method which was employed by Sir James Simpson of administering it "powerfully and speedily" and the intervening steps to the modern method of giving a small quantity in regulated dosage are given in detail. Full recognition is made of the careful researches of Professor Waller. Indeed Professor Waller himself has revised the chapters on the physiology of anaesthesia, especially in relation to chloroform poisoning.


There is much good sense in this book. The subject is not new, though it appears new to every graduate. Indeed lectures on
the subject were given in the school at Salerno as early as the twelfth century, and from a judicious quotation it would appear that those ancient men were quite expert in the matter of building up a practice: "When the doctor enters the dwelling of his patient he should not appear haughty or covetous, but should greet with kindly, modest demeanour those who are present, and then seating himself near the sick man accept the drink which is offered him, and praise in a few words the beauty of the neighbourhood, the situation of the house and the well-known generosity of the family . . . the fingers should be kept on the pulse at least until the hundredth beat in order to judge its kind and character; the friends standing round will be all the more impressed because of the delay . . . on the way to the sick patient he should question the messenger upon the circumstances and conditions of the illness of the patient; then if not able to make any positive diagnosis he will at least excite the patient's astonishment by his accurate knowledge of the symptoms of the disease. . . . when he quits the patient he should promise him that he will get quite well again, but he should inform his friends that he is very ill."

The work is like a book on etiquette; much in it is a matter of common knowledge to most persons, but the uninstructed will find much to repay them for the reading. The advice is kindly and well meant.

**Internal Medicine. By David Bovaird, Jr., A.B., M.D.**

With 109 illustrations in the text and 7 coloured plates.


Charles Roberts, Montreal.

It is always interesting to know why an author writes a book. Dr. Bovaird has set forth his reasons for adding to the number of works on "Internal Medicine." The large treatises are too long he says, and too rich in information for those entering upon the study of medicine, while many of the shorter ones are mere catalogues of fact. His object is to supply the frame-work of internal medicine, allowing the student to complete the structure and add the details. The title is intended to denote those subjects which remain in the older practice of medicine, when all the specialties have been subtracted from it. The book is a handsome volume of over six hundred pages, well printed, and well bound, as all Messrs. Lippincott's books are, but very heavy, as most American books are. It answers truthfully to every test we have been able to employ, and it is sure to find a place for itself in a field which already is overcrowded.

This is a remarkably interesting book; but, when the author affirms that he has "endeavoured to deal with all the main features in the modern law pertaining to physicians and surgeons," it must be understood that he has in mind mainly the law of the United States. We read continually that certain laws are constitutional, or not, as the case may be. In Canada laws are laws without reference to a constitution, because we have none. Each legislature is supreme within its own sphere, and no court is competent to pass upon its measures. The most the courts can do is to decide if the legislature confined its operations within its own sphere. They cannot decide if a law is "reasonable," because a legislature can enact any law it chooses, unless, for example, a law to make a man a woman, or a woman a man. We know nothing of the term "constitutional," which the author continually employs. If a subject feels that he is deprived of his liberty or of protection, he may appeal to the common wisdom and experience of the community, and try to get the law changed, but the courts will not help him. When the legislature says a thing is so, it is so. In these two countries, jurisprudence will differ as their political systems vary. In Canada this book will find its usefulness limited, but it is very valuable as a standard of the practice which prevails in the United States.


This book has the distinction which marks all those published by Messrs. Rebman. Upon so restricted an area, so large a work is necessarily very complete. It contains two hundred and fifty pages, with fifty figures in the text and thirty-two plates in halftone. There are chapters, one each, upon the anatomy, physiology, methods of examination, symptoms of disease, and treatment. The book is most scientific in text and illustration, and quite the most comprehensive of the subject with which it deals. It is one for the specialist, for all specialists in otology, and we hasten to call their attention to it.

The present edition of this work has been entirely rewritten, forty new illustrations, including two coloured plates, have been added, and the entire book has been reset. As it now stands the book may be accepted as an expression of the best practice in this division of surgery. The author pleads for a more serious consideration of the troublesome and painful ailments associated with the rectum, lest the cases fall into the hands of charlatans. The illustrations are quite remarkable, and the text is adequate. The first edition was issued only five years ago; the second is likely to receive a ready acceptance.


We desire again to call attention to this very complete work on the nursing of obstetrical and gynaecological cases, because we think it the most satisfactory book on the subject with which it deals.


It would be a valuable piece of philanthropy if some wise person were to provide every graduate from a medical school with these Rules of Surgery. If the young graduate were to integrate them into himself he would avoid much mischief. They are the sum of much wisdom and the product of large experience. Besides, they are entertaining. We think the publishers are in error
in stating that Dr. Bernays is a Fellow of the Royal College of Surgeons,—they probably mean "member."


All our respect is due to Mr. Clayton-Greene. This is a book to which one turns with fresh delight in every edition, because the original style and spirit have been presented. It is now thirty years since "Pye's Surgical Handicraft" was first published. In those days few men wrote; but those who did write could write: those who could not write left the business alone. Men approached the task as craftsmen with a reverence for their material, and not with the jaunty impudence of so many recent writers, who assume that familiarity with the tools of their trade is ample warrant for using the pen, that most difficult of all implements to handle. Listen to the steady roar of the opening words: "In this book I have endeavoured to describe the details of surgical work as it appears from the point of view of house surgeons and dressers in surgical wards. My aim has been, further, to present this work to them, as to men apprenticed to a skilled labour, in which excellence can only be attained by the acquisition of manual skill or handicraft; for although surgery is becoming more scientific day by day, and although it may even now have come to pass that with the increasing recognition of its higher aims, its manipulative side is unduly overshadowed, nevertheless chirurgery can never be false to its etymology, will never cease, that is, to be a skilled labour, nor will surgeons ever cease to be handicraftsmen."


This is a real lecture, not a thing manufactured for publication. One hears the speaker's voice in every word, and when the voice is that of Mr. Mansell Moullin, one is sure of hearing something
interesting and well stated. Mr. Mansell Moullin has absolved himself from the particular, and has given a fine philosophical consideration of a subject which is to-day only a little less mysterious than it was in Virchow's times.


This book also is dedicated, "To my wife"; and students, for whom it is intended, are not unlikely to have the calm of their senses and their quiet contemplation of an arid theme, disturbed by this manifestation of uxoriousness. The book follows the lines of Professor Schäfer's "Essentials of Histology," "which the student is assumed"—by the author in his preface—"already to possess and to know." The obvious comment is that, if a student knows all that is in Professor Schäfer's book, he is in possession of all the information he is likely to need for his purposes. With the book itself no fault is to be found. Indeed, in itself, it is a very good book, although unattractive in appearance and badly bound.


What is an "acute abdomen"? Not the most protuberant belly can properly be described as acute: it may be curling and splendid, but not acute. This jargon may do very well for the outpatient's room in St. Thomas's Hospital: it will not do for a journal published even in America, and Canada is in America. And jargon is not confined to the title; it is found throughout the book,—"lower abdomen," "acted after calomel," "the appendages on the left side appeared normal, and were therefore left," will serve as illustrations. If a subject is worth writing about, it is worth while using sufficient words to enable a reader to know, without guessing, what the writer means.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


Men and Books

By Sir William Osler, M.D., F.R.S.

XX. JAQUES BENIGNE WINSLOW. His foramen and his ligament have made at least the name of this great Danish (and French) anatomist familiar to every student of medicine. The chief facts of his busy life are in all the biographies; but he left on record his own story, which has been carefully preserved in the Mazarin Library, Paris, and recently edited by his countryman Vilhelm Maar, to whom I am indebted for a copy. (L’Autobiographie de Jaques Bénigne Winslow publiée par Vilhelm Maar. Octave Doin and Fils, Paris; Vilhelm Tryde, Copenhague MCMXII.)

Born in 1669, the son of a Protestant pastor, and great-nephew of the famous Sténon, Winslow began his studies under the direction of his father, and then proceeded to the Ecole de Saint Canut, from which he passed to the University of Copenhagen, intending to study theology. A new student was made “Civis Academicus” with singular and sometimes brutal formalities by his fellows, and the description he gives reminds one of the ceremonies in vogue when I was a medical student at McGill in connexion with the so-called “footing supper.” He soon came under the influence of Caspar Bartolin and Jacobæus, professors in the medical faculty, and deserted theology for the study of anatomy. After graduating he attracted the attention of M. Moth (at the time secretary of state) who had at one time studied medicine, and had been a friend of Sténon, and who arranged a royal travelling fellowship for him.

In 1697, in company with a friend, he proceeded to Holland, where he studied for some time with Bidloo, Ruysch, and Rau. He speaks of the wonderful skill of Ruysch in the preparation of specimens, and was shown two entire bodies of infants perfectly preserved by some secret method. He seems to have seen everything that was of importance in Holland, and was much impressed by the practical advantages offered for the study of anatomy and surgery—“audio, video palpo,” he says.

In June, 1698, he arrived in Paris, with which city his life was henceforward to be so intimately associated. Here, under the in-
fluence of Deverney, the well-known anatomist, he devoted his
time to dissections and to surgery. But he had always retained
an interest in theology, and this was increased by the arrival in
Paris of a compatriot, M. Worm, a student of the subject. Several
books of the illustrious Bossuet had fallen into Winslow's hands,
and he and his young fellow-countryman decided to have a dis-
cussion, or conference, on the doctrines of the Roman Church.
Winslow took the Roman side, and in the preparation for the dis-
cussion became intensely interested in Bossuet. The upshot was
that he decided to consult the famous theologian on the subject
of his doubts. The most interesting, and a very large, part of the
autobiography is taken up with the story of his conversion. After
many interviews with Bossuet he was received into the Church of
Rome. As a special Danish scholar and a Protestant of note, his
conversion attracted a good deal of attention, and the ceremony
of his abjuration in the chapel of Germigny was performed in the
presence of a number of distinguished people. Bossuet adminis-
tered the rite of baptism, and added to his name Jaques that of
Bénigne. Naturally the news of his conversion upset his family
and friends in Denmark, and was a sore grief to his old father, to
whom he was deeply attached.

Then began a long struggle for success in Paris. Duverney
befriended him, and Bossuet appears to have helped him in every
possible way. He was elected physician to the Hôtel Dieu, and in
1710 to the Bicêtre, and in 1721 he was made one of the professors
of surgery. Meanwhile, he had devoted himself to the study of
anatomy, and in 1732 appeared his well-known "Exposition An-
atomique," one of the most popular text-books of the eighteenth
century, which was translated into many languages, and raised his
reputation to that of one of the first anatomists of Europe. He had
the misfortune not to succeed his old teacher Duverney in the
chair of anatomy and surgery at the Jardin du Roi. In 1745 he
inaugurated the new amphitheatre of anatomy of the faculty,
still in existence and known as the amphitheatre of Winslow.

In addition to his well-known "Anatomy," he wrote many mono-
graphs, most of which are published in the transactions of the
Académie des Sciences. He had not much success as a surgeon or
practitioner. With a timid nature he lacked confidence in himself;
and mentions in his autobiography that he had an almost insur-
mountable difficulty in performing even the minor operation of
venesection. It is reported that he was so fearful that he would not
order two ounces of manna without a prayer. He never returned
to his native land, and even refused to visit the King of Denmark when dangerously ill in 1730.

The autobiography only extends to 1704. It is a pity that so much of it is occupied with theological discussions, some of which were carried on with his father. Winslow was much behind his age in certain matters, and had the old-fashioned idea that certain mental affections were possessions of the devil. He died in 1760, and was buried in the church of Saint-Bénoin. His monument at present rests in the court of the Convent of Saint-Etienne du Mont.

Winslow cut a great figure in his day and generation, and had a wide reputation as a teacher and anatomist. It is interesting that his religious career should have somewhat resembled that of his more famous countryman and kinsman, Sténon. He appears to have been, in the words inscribed on this tomb, "vir æque verax et pius."

A bill is now under consideration by the Nova Scotia Legislature, to establish municipal sanatoria throughout the province for the treatment of cases of tuberculosis. It is the intention to divide the province into five districts, each with an approximate population of one hundred thousand. A sanatorium will be established in each district and will be in charge of a qualified medical practitioner, who has had at least six months' training in sanatorium and hospital work and who will be appointed by the Public Health Officer. Before admission, each patient will be examined by the physician in charge. The cost of establishing these sanatoria will be borne, half by the provincial government and half by the municipalities, towns, and cities of the districts in which they are placed, and by which they will be maintained. In addition to the sanatoria, clinics are to be provided which will be under the supervision of the local boards of health. An inspector of health will be appointed who will visit these clinics and examine patients. County nurses also will be appointed, whose duty it will be to assist the inspector. Advice will be given to those suffering from tuberculosis, and literature treating of the subject will be distributed; when considered necessary, patients will be sent to the sanatorium for treatment. Thus the clinics will serve as bureaux of information both for the patients and for the health authorities and as "feeders" for the sanatoria.
Blood Pressure in Life Insurance

Under the new regulations, especially in the State of New York, limiting the amount of insurance which any one company can take in a year, the companies are now in the situation of scrutinizing their business most carefully, and none but the choicest lives are considered. Incidentally, the activities of the insurance agent have been much lessened.

The companies are coming more and more to recognize the importance of the blood pressure test in the examination of applicants for insurance. The accurate estimation of the arterial tension is very difficult, if not impossible, even by the most experienced clinician; and it is well-known that a significant degree of early arterio-sclerosis may exist, without showing definite renal or cardiac signs, or any thickening of the peripheral arteries. Consequently, the use of the sphygmomanometer in life insurance has become common during the past five years; and many companies are now trying to get blood pressure reports, especially on applicants over forty years of age.

Statistics are as yet meagre. The best are those of Dr. J. W. Fisher, of the North-Western Mutual Company. He now gets blood pressure reports in about 85 per cent. of his examinations; and a report which he has issued covers the period from August, 1907 to January 1st, 1911, and all the actual deaths to July 1st, 1912. He finds that the average blood pressure of accepted risks for ages fifteen to thirty-nine is 125·2 mm., Hg.; for ages forty to sixty it is 130·17. Every care was taken to trace the subsequent history of the rejected risks, and the work seems to have been thoroughly done.

Tables showing the percentage of actual to expected deaths at the different ages are given, and the general results may be summarized as follows:

1. The total number of accepted risks with blood pressure from 140 to 149 was 2,668. From the general experience of the company the deaths would number 53·065. The actual deaths were 58. The ratio of actual deaths to those expected from the company's general experience was, therefore, 109·3 per cent.
2. There were 525 risks accepted with blood pressure from 150 to 160, an average blood pressure of 152.58. The expected deaths were 13.443; the actual deaths 22, ratio of actual to expected deaths 163.65 per cent.

3. There were 723 rejected risks whose average blood pressure was 171.03 (all ages). According to the company's general experience the deaths expected in this group would be 14.3. The actual deaths traced were 51. The ratio of actual to expected deaths was therefore 376.46 per cent.

In other words, the mortality in all the cases with abnormally high blood pressure was from 9.3 to 276.46 per cent. in excess of the estimated general average of the company during the same period.

These startling results seem to indicate the importance of the use of the sphygmomanometer in life insurance examinations. Great care must be taken, however, to do no injustice to those whose blood pressure is abnormally high from transient causes. Where there is no other impediment to acceptance except high systolic pressure, repeated examinations should be made if possible before coming to a decision. There can be little doubt that careful reports on blood pressure will enable the companies to weed out a dangerous class of risks which are now accepted at the ordinary rates.

T. F. M.

The year 1912, has been one of increased activity for the Victoria General Hospital at Halifax. The bacteriological and pathological laboratories have been completed, but the need for enlargement has become more pressing. Not only is additional accommodation for patients wanted, but operation rooms, examination rooms, and x-ray rooms are required. One thousand seven hundred and fifty-two patients were admitted during the year, and the total number treated was one thousand eight hundred and ninety-six. One thousand six hundred and fourteen patients were discharged, and one hundred and twenty-five died; seven hundred and sixty-five operations were performed.
THE Seventeenth International Congress of Medicine will be held in London, August 6th to 12th, 1913, under the patronage of His Majesty the King. The Congress will be opened by H.R.H. Prince Arthur of Connaught at 11 a.m. on Wednesday, August 6th, in the Albert Hall. The officers are: president, Sir Thomas Barlow, Bt., K.C.V.O., M.D., F.R.S.; treasurers, G. H. Makins, C.B., F.R.C.S., and Sir Dyee Duckworth, Bt., M.D.; chairman of the executive committee, Sir Alfred Pearce Gould, K.C.V.O., F.R.C.S.; general secretary, Dr. W. P. Herringham, F.R.C.P. The members of the Congress will be (a) qualified members of the medical profession who have made formal application and have paid a subscription of five dollars; (b) scientific men who have been nominated by a national committee or by the executive committee and who have paid the same subscription. The wives and daughters of members will be required to pay half of this fee. Subscriptions should be sent by postal order or cheque to the treasurers, 13 Hinde Street, London, W., and at the same time the section in which each member wishes to be inscribed should be indicated. Application should be accompanied by visiting card giving medical qualifications and address. The steamship companies have offered special facilities to those who attend the Congress. Dr. W. H. B. Aikins, 134 Bloor Street West, Toronto, is the secretary of the Canadian National Committee and will give more detailed information to any one who applies to him. Dr. Aikins has worked unremittingly and the whole profession in Canada owes him a debt of gratitude for his assiduous labour in the common cause.

The following is the arrangement of Canadian representatives: Vice-president, Dr. T. G. Roddick, Montreal; executive committee, Dr. W. H. B. Aikins (secretary, Canadian National Committee), Toronto; Dr. A. McPhedran, Toronto; organizing committee, Dr. George Armstrong, Montreal; Dr. C. K. Clarke, Toronto; Dr. J. C. Connell, Kingston; Dr. H. H. Chown, Winnipeg; Dr. E. P. Lachapelle, Montreal; Dr. F. J. Shepherd, Montreal.

Section I—Anatomy. Council, Dr. J. Playfair McMurrich, University of Toronto.
ASSOCIATION JOURNAL

Section II—Physiology. Vice-president, Thomas Gregor Brodie, M.D., F.R.S., University of Toronto; council, Dr. Archibald Byron Macallum, University of Toronto; Dr. Swale Vincent, Manitoba University.

Section III—General Pathology. Vice-president, Dr. J. G. Adami, McGill University; council, Dr. John Joseph Mackenzie, University of Toronto.

Section III—(a) Chemical Pathology. Council, Dr. John Beresford Leathes, University of Toronto.

Section IV—Bacteriology and Immunity. Council, Dr. Alfred H. Caulfeild, Toronto; Dr. Gordon Bell, Manitoba University.

Section V—Therapeutics. Vice-president, Dr. A. D. Blackader, McGill University; council, Dr. Velyien Ewart Henderson, University of Toronto.

Section VI—Medicine. Vice-president, Dr. A. McPhedran, University of Toronto; council, Dr Harry Bertram Anderson, University of Toronto; Dr. F. G. Finley, McGill University; Dr. H. A. McCallum, Western University, London; Dr. James Third, Queen's University, Kingston.

Section VII—Surgery. Vice-president, Dr. F. J. Shepherd, McGill University; council, Dr. Irving Heward Cameron, University of Toronto; Dr. J. Alex. Hutchison, McGill University; Dr. O. M. Jones, Victoria, British Columbia; Dr. Eugene St. Jacques, Laval University, Montreal; Dr. John Stewart, Dalhousie University; Dr. H. T. Williams, Western University, London.

Section VII—(a) Orthopaedics. Council, Dr. Clarence L. Starr, University of Toronto.

Section VII—(b) Anæsthetics. Council, Dr. Samuel Johnston, University of Toronto; Dr. Robert A. Stevenson, Toronto.

Section VIII—Obstetrics. Vice-president, Dr. Adam Henry Wright, University of Toronto.

Section IX—Ophthalmology. Vice-president, Dr. Richard Andrews Reeve, University of Toronto; council, Dr. J. W. Stirling, McGill University.

Section X—Diseases of Children. Council, Dr. Allen Mackenzie Baines, University of Toronto.

Section XI—Neuropathology. Council, Dr. D. A. Shirres, McGill University; Dr. Ernest Jones, University of Toronto.

Section XII—Psychiatry. Vice-president, Dr. C. K. Clarke, University of Toronto. Council, Dr. T. J. W. Burgess, McGill University; Dr. W. H. Hattie, Nova Scotia Hospital; Dr. Edward Ryan, Queen's University.
ASSOCIATION OF OFFICERS OF THE MEDICAL SERVICES OF CANADA

The annual meeting of the Association of Officers of the Medical Services of Canada was held on February 25th and 26th, at the Chateau Laurier, Ottawa, Lieut.-Colonel A. T. Shillington, M.D., A.M.C., presiding. The meeting was very largely attended, over eighty officers registering.

The morning of Tuesday, the 25th, was devoted to business; during the afternoon the following papers were read: "The Nursing Service," by Nursing Sister Macdonald, P.A.M.C.; Miss Macdonald dealt with the question of the development of the Nursing Service in the Canadian Militia, and advocated the establishment of provisional schools for nurses when they first join the militia. At present they are obliged to go to Halifax. Major Vaux, P.A.M.C., read a paper on the "Collection of the Wounded"; he brought forward the difficult points from a tactical point of view. Dr. Phelan, of Kingston, on the invitation of the Association, presented an able
paper on the "Responsibility of the Insane." An interesting paper was presented by Lieut.-Colonel H. R. Casgrain, 21st Regiment, Windsor, Ont., on the "Military Surgeon"; this paper was discussed by Lieut.-Colonel Bridges, P.A.M.C. and others. The presidential address dealt with many interesting questions. A committee was nominated to report on the recommendations therein contained.

At 8 p.m., the annual dinner was held; speeches were made by the Hon. Sam Hughes, Minister of Militia, Surgeon-General Sir F. W. Borden, Major-General MacKenzie, and others.

The morning of Wednesday, the 26th, was taken up by a discussion on "Marching and the Soldier's Foot," opened by Colonel Jones, D.G.M.S., who treated the subject generally. He demonstrated the use of the new Webb equipment. Capt. Preston, Ottawa, followed, taking the anatomical characteristics of the foot and the prevention and cure of flat foot. Capt. Mackenzie Forbes, Montreal, dealt broadly with the foot and the requisites for a good and useful boot. Lieut.-Colonel Duff, P.A.M.C. and Lieut.-Colonel Bridges dealt with the foot and boot from a military-medical point of view. Major Gardner, Ottawa, took up the question of clothing and showed a model of the "Gardner" serge and collar. A resolution was passed asking the minister to appoint a committee of medical officers to report upon the question of boots.

At one o'clock the president entertained the members at luncheon; speeches were made by Dr. Roche, Minister of the Interior, and Colonel Sam Hughes.


The convention ended with a theatre party at the Dominion Theatre.

The following officers were elected for the ensuing year: president, Lieut.-Colonel J. T. Fotheringham, M.D., A.M.C., Toronto; vice-presidents, Lieut.-Colonel R. D. Macdonald, Sutton, P.Q.; Lieut.-Colonel H. R. Casgrain, Windsor, Ont.; and Major G. M. Campbell, 7th C. A. Halifax; secretary, Major T. H. Leggett, Ottawa; treasurer, Major F. M. Bell, Ottawa; executive council, Lieut.-Colonel Shillington, Major Wallace Scott, Major D. Whitton, Major R. Law, Major E. Peltier and Major R. Gardner.
Dr. Harold B. Blanchard died from scarlet fever February 22nd, at Columbus, North Dakota, where he had been practising for some time. He was born in Mallorytown, Ontario, and graduated from McGill University in 1907.

Dr. D. W. Ferrier, of Toronto, died in the Grace Hospital, February 26th, in the eighty-first year of his age. Death was due to injuries received February 18th, when Dr. Ferrier was knocked down by a street car. He was born in Markham in 1883, and graduated from the medical school of Upper Canada College, more than fifty years ago. He practised in Mount Albert, Pickering, Uxbridge, Markham, and Toronto. Dr. Ferrier was one of the few surviving physicians who obtained their M.D. degree from the old medical school at Cobourg, and one of the oldest practitioners in the country. He belonged to the brotherhood of the Freemasons.

Dr. Edward Purdee Bucke, of London, Ont., died from pneumonia, February 15th, in the thirty-ninth year of his age. Dr. Bucke was well-known and one of the most popular physicians in London, where the greater part of his life was spent. He was born in Sarnia and was the son of the late Dr. F. Morris Bucke, who was for many years superintendent of the London Asylum. He received his early education at the public schools of London, afterwards going to Upper Canada College. Later, he entered the Western Medical College, where he obtained his M.D. degree in 1897. The two years after graduation were spent at Kent Mills, and these were followed by two years in England, devoted to the study of the eye, ear, nose, and throat. He then returned to London to practise his profession. Dr. Bucke was a man with a great future, not in medicine alone, for in the field of literature he had shown unusual promise, and his early death is much to be regretted. He was a keen sportsman and a prominent figure in the social world. He was also greatly interested in amateur theatricals and had proved his dramatic ability on more than one occasion.

Dr. Edward Kitchen, of St. George, Man., died February 19th, after a long illness. Dr. Kitchen was one of the oldest and
best known practitioners in the county. He belonged to a pioneer family of South Dumfries and was a graduate of Toronto University. He was examiner for that university for many years and was chairman of the provincial board of health. Dr. Kitchen was a successful practitioner, beloved by his patients, and keenly interested in charitable work of all descriptions. He took a prominent part in municipal affairs, and in politics espoused the Liberal cause. He will long be remembered in South Dumfries as a man of exemplary character and high ideals, whose life was spent in working for the welfare of the community among whom he lived.

Dr. William V. Cook died at Pasadena, of tuberculosis, February 16th. He was born in Welland County, Ont., in 1857, and for the past sixteen years has practised in Pasadena. He leaves a widow.

Dr. James Barclay, son of the Rev. James Barclay, D.D., died at Cowansville, Que., February 24th, in the thirty-ninth year of his age. Dr. Barclay graduated from McGill University in 1897; he then served on the staff of the Montreal General Hospital and of the Maternity Hospital, afterwards sailing as surgeon on one of the Elder Dempster boats. In 1901, he was appointed medical inspection officer of the United States Immigration Bureau at Montreal; he was also demonstrator in obstetrics at McGill University. Dr. Barclay was a sportsman and a noted Rugby player. He is survived by his widow.

Dr. E. L. Riverburg died early in March, from kidney disease. His death took place in Chicago, where he had been practising for the past year. Dr. Riverburg previously resided in Toronto. He leaves a widow.

Dr. G. A. Pettigrew, of Peterborough, died March 4th, in the sixty-eighth year of his age. Death was due to general breakdown.

Dr. F. W. Birkett, of Ottawa, died March 7th, at Santiago, California, in the thirty-eighth year of his age. He was born in Ottawa, and was the son of Mr. Thomas Birkett. His early education was obtained in Ottawa. Dr. Birkett took his first two years in medicine at McGill University, after which he went to Queen's University, where he obtained his M.D. degree. He then went to Edinburgh, obtaining there his L.R.C.P. and M.R.C.S.
On his return from Scotland, Dr. Birkett commenced his short, but successful professional career in Ottawa, where he practised until four years ago, when he was obliged to give up his work on account of illness. Dr. Birkett’s premature death is much regretted. He was a popular and successful practitioner and a good deal of his work—enhanced by his ready sympathy and cheery kindness—was done among the poor, and particularly among children. He was a man of wide interests and a keen sportsman. He was physician to the local fire brigade and surgeon captain to the 43rd Regiment. He leaves a widow and a daughter.

Dr. Jesse E. Wilson died March 8th at Rochester, Mich., where he had practised for more than fifty years. Dr. Wilson was born in Ottawa in 1828, and commenced his professional career at St. Thomas in the sixties. He was the brother of the late Senator Wilson, of St. Thomas, and twin brother of the late Dr. Jerry Wilson who died six years ago.

News

MARITIME PROVINCES

Forty-one cases of measles were reported in St. John, N.B., during February. There were also three cases of diphtheria, two of scarlet fever, two of typhoid, and three of tuberculosis. The population is about 42,834. The death rate, from all causes, was 18.55.

An x-ray apparatus has been installed in the Fredericton Hospital. One of the most urgent requirements now is a modern operating room.

The annual report of the Chipman Memorial Hospital at St. Stephen, N.B., for 1912, shows that a successful year’s work has been accomplished. The number of patients treated during the year was four hundred and eighty.

Several cases of scarlet fever and diphtheria are reported from Halifax. A discussion took place on February 13th, at a meet-
ing of the board of health, in connexion with a recent case of diphtheria, as to whether patients who are unable to pay should be admitted to the infectious diseases hospital. Dr. Trenaman, the medical officer of health, stated that it was the rule that when a patient was admitted to the hospital an agreement to pay was signed. The question was raised as to whether the medical officer of health had the right to refuse admission to a patient because he was unable to pay. It was decided to obtain the opinion of the city solicitor.

In the annual report of the supervisor of schools at Glace Bay, the medical inspection of the pupils is strongly advocated. As yet no such inspection is made.

The Amherst Hospital has increased the charge made to public ward patients to five dollars a week. Six or eight more beds are to be added to the present accommodation. During the month of February, 37 patients were admitted to the hospital, 23 were discharged, and one birth took place; no deaths occurred.

Several cases of diphtheria have occurred at North Sydney. As a preventative measure, some of the places of amusements have been closed; it is thought that at the moment it is unnecessary to close the schools.

ONTARIO

Ottawa is looking for a new Health Officer. An experienced medical sanitarian is required, for whom there is offered a salary of five thousand dollars per annum.

A meeting of the Medical Health Association of Peterborough, was held February 21st, under the presidency of Dr. Amys. Dr. Thompson, of Dawson City, was the guest of the association on this occasion. Papers were read by Dr. Frederick and Dr. Sutton.

Another cottage is to be added to the Sir Oliver Mowat Hospital at Kingston. It is the gift of Mr. and Mrs. Cornelius Bermingham. The cottage is intended to accommodate four patients in the incipient stage of tuberculosis, and it will cost between four and five thousand dollars. Mr. Bermingham has also promised to give one hundred dollars a year for five years towards maintenance. The hospital has now been in use about five months
and for the last two months every available bed has been requisitioned and patients are even occupying the canvas cottage.

A resolution was passed by the Association of Officers of the Army Medical Services of Canada, on February 25th, to forward a request to the Minister of Militia, asking that when a lieutenant-colonel of the Army Medical Corps has served his full five years in command and is thereby retired, his time on the reserve shall count towards earning the long service medal. This action was taken because, under the present conditions, an officer can be retired in less than twenty years and have no chance of obtaining the long service medal.

Municipal abattoirs are being established at Toronto, Berlin and Stratford; and it is probable that one will be established at Brantford.

The Hopewell Smallpox Hospital on Porter's Island was completed last February. The upper portion of the building contains four wards, each capable of accommodating thirty patients; the ground floor is devoted to administration and living rooms, laundry, morgue, and discharge rooms.

Several cases of smallpox have occurred at Niagara Falls; in consequence the schools have been closed and an order given that all children be vaccinated before returning to school, unless this had been done within the last seven years.

Dr. Williams, who has been the medical officer of health at Oakville, for the past twenty-seven years, has resigned on account of illness. The position has been filled by Dr. R. O. Fisher, who has been appointed at a salary of twenty-five dollars a year.

Smallpox has again broken out in Hamilton. It was thought that the epidemic was over and it had been decided to close the isolation hospital, when several new cases appeared.

The annual meeting of the Canadian Branch of the St. John Ambulance Association was held at Ottawa, February 24th. The work of the past year has been most successful. The course of instruction was taken by over five thousand men and women, two thousand more than in 1911; a good many of them did not take the
examination although they completed the course of lectures. Almost three thousand certificates were given during the year.

The car containing the Government Public Health Exhibit left Ottawa, February 19th. A three months’ tour of the towns in the province will be made and lectures on public health and preventive medicine will be delivered at the different places. The exhibit possesses a cinematograph and pictures illustrating the lectures will be shown at each place.

During the week ending February 15th, 141 deaths occurred in Toronto. Among the contagious diseases reported during the week were: 3 cases of smallpox, 29 of diphtheria, 31 of scarlet fever, 112 of measles, 8 of whooping cough, 3 of typhoid fever, and 19 of tuberculosis.

The following new appointments have been made to the staff of Toronto University in connexion with the utilization of the public wards of the Western Hospital for teaching purposes. Dr. John Ferguson has been made associate professor of clinical medicine; Dr. S. M. Hay, associate professor of clinical surgery; Dr. A. A. Macdonald, associate professor of gynaecology and obstetrics; Dr. Price Brown, associate professor of ophthalmology and otology. The new arrangement will result in the addition of about two hundred beds to those now available.

A new ward for women is to be added to the General and Marine Hospital at Collingwood. The present ward is much too small and both dark and inconvenient. The ladies’ board of management has undertaken to collect the necessary funds; they hope to be able to do this within a year.

The St. Catharines Hospital is to have an x-ray apparatus. An appeal for the necessary funds was made to the citizens and met with a generous response.

A meeting of the board of directors of the Guelph General Hospital took place February 25th. On this occasion it was decided to ask the city council to submit a by-law to the rate-payers for thirty thousand dollars. Certain repairs and alterations to the hospital are required and it is for this purpose that the request is made. If this by-law is submitted, it will be the third proposal
to assist the hospital which has been made to the ratepayers. The former requests were both refused.

Dr. Dawson has been appointed as medical superintendent of the Isolation and Hopewell Hospitals at Ottawa, at an annual salary of $1,500 for the first six months, at the end of which period the remuneration will be increased to $1,800. It is the intention to appoint a house surgeon to assist Dr. Dawson.

The following cases of infectious disease were reported in Hamilton during the month of February: scarlet fever, 15; diphtheria, 10; smallpox, 32; tuberculosis, 10; chicken-pox, 57; whooping cough, 11; erysipelas, 6; measles, 15; and one case of mumps.

A General Hospital is to be built at Cochrane; the site has not yet been definitely decided upon. During 1912, one hundred and six births and twenty-six deaths were reported in the town.

An outbreak of smallpox is reported from Exeter. It appears the disease has been present in the town for some weeks, but was at first thought to be chicken-pox.

One thousand two hundred and ten cases of mumps were reported in the province during the month of February; last year, during the same month, there were only one hundred and eleven cases. The following is the list of cases of infectious disease reported during February: smallpox, 145—no deaths; scarlet fever, 311—11 deaths; diphtheria, 169—29 deaths; measles, 1,210—13 deaths; whooping cough, 75—11 deaths; typhoid fever, 47—11 deaths; tuberculosis, 158—96 deaths; infantile paralysis, 2—2 deaths; meningitis, 4—4 deaths.

The report of the North Bay Hospital for the month of February, gives the following information: patients in hospital, February 1st, 1913, 21; admitted during the month, 43; discharged, 37; deaths, 2; number of hospital days for month, 664.

The following are the statistics concerning contagious disease in Ottawa during the past year. Scarlet fever, 192 cases reported, 2 deaths; smallpox, 229 cases reported, 2 deaths—both infants; only eight of these patients had been successfully vaccinated, two over thirty years ago, two over fifteen years ago, two ten years ago,
and two eight years ago. Diphtheria, 401 cases reported, 30 deaths; typhoid fever, 1,378 cases reported, 91 deaths.

A grant of ten thousand dollars has been made to the Victoria Hospital by the Renfrew town council. It is probable that the hospital will be extended.

The twenty-third annual report of the Stratford Hospital, furnishes the following information: 634 patients were treated in 1912, the average period of treatment in hospital being 18.64 days; in the maternity ward there were 53 births; the daily cost of maintenance for each patient was $1.41, sixteen cents more than in 1911.

There are eleven cases of smallpox in the Swiss Cottage Hospital at Toronto.

An addition is to be made to the Oshawa Hospital. The estimated cost is about $20,000, and the work is to be completed with as little delay as possible.

QUEBEC

An outbreak of scarlet fever recently occurred at the Royal Victoria Hospital, Montreal.

An interesting account of the work accomplished by the Montreal Branch of the Victorian Order of Nurses was given at the annual meeting which took place February 27th. Ninety thousand nine hundred and fifty-five visits were paid by the 61 nurses of the branch, 227 poor families were helped, between two and three thousand articles of clothing were distributed, rent was paid five times and burial expenses four times, and on Christmas Day, 126 dinners were sent out. There are now 232 nurses belonging to the Order in Canada; last year thirteen new branches were opened and 211,544 visits made.

Four thousand five hundred and seventy-five patients were treated last year at the Montreal General Hospital, the daily cost for each patient being $2.12. Three hundred and sixty-eight deaths occurred. In the out-patient department, 16,444 patients were treated and the consultations numbered 71,731. The financial statement showed a deficit of $34,371. New buildings are in
course of construction and it is hoped that they will be brought to completion before very long.

The annual meeting of the Lachine General Hospital was held February 20th. The past year has been one of the most successful in the history of the hospital. The new wing is almost completed, the number of patients has increased, 359 having been admitted during the year, and the treasurer's report shows a balance on the right side, the expenses amounted to $5,596 and the receipts to $6,085. In the out-door clinic 211 patients received attention.

A meeting of the Société Médicale de Montréal was held January 21st, when the report for the year 1912 was read by the secretary, Dr. Derome. The society has now attained the thirteenth year of its existence and has a membership of one hundred and ninety.

Cases of smallpox continue to appear in Montreal, and indeed through the province of Quebec. During the week ending February 5th, seven cases were reported, the next week brought fifteen cases and the week after an equal number. Measles also has been very prevalent. During the week ending February 22nd, one hundred and seventy-three cases were reported, eight of which were fatal. During the same week there were sixteen cases of diphtheria resulting in one death, thirty-three cases of scarlet fever and three deaths, and fifty cases of tuberculosis, thirty-one of which were fatal.

The ambulance question was again referred to at a recent meeting of the Quebec Board of Health. It is hoped that some satisfactory solution of the difficulty may be found.

Quebec is to have a civic hospital and a morgue. It is probable also that a hospital for tuberculosis will be established.

As a protest against the use of cocaine, and in view of the proposed revision of the Proprietary and Patent Medicine Act, the following resolution has been passed by the Baptist Men's Association of Montreal: "That if any revision of the Patent or Proprietary Medicine Act of 1908 be undertaken no amendment thereof shall be passed which shall permit the sale or use in Canada of any patent or proprietary medicine which contains cocaine or any of the salts of cocaine."
The following resolution was passed at a meeting of the Société Médicale de Québec, which took place December 27th, 1912: "Les membres de cette société ont appris avec surprise le trop modeste traitement accordé aux hygiénistes experts nommés dernièrement par le Conseil d'Hygiène de la Province de Québec. Les devoirs multiples, le perfectionnement qu'on exige d'eux, leur résidence obligatoire dans le chef-lieu du district où ils devront exercer leurs fonctions, la cessation de tout autre travail professionnel, par conséquent de toute autre source de revenus, leur nomination susceptible d'être révoquée à volonté, sont autant de sacrifices qui exigent un traitement au moins en rapport avec leurs multiples devoirs. En conséquence les membres de cette société demandent aux sociétés médicales du district et de se joindre à eux pour prier l'Honorable Premier Ministre et les membres du Conseil d'Hygiène de vouloir bien reconsidérer leur résolution et faire droit à cette juste demande d'offrir aux hygiénistes experts un traitement digne de leurs difficiles et coûteuses fonctions." In the February issue of the Bulletin Médicale de Québec, Dr. Leclerc analyzes the duties which are exacted of the district inspectors appointed by the Conseil d'Hygiène in return for the modest remuneration of twelve hundred dollars a year.

Last year 2,293 patients were treated in the Notre Dame Hospital at Montreal, and the number of hospital days was 44,766. In addition, 2,652 persons received treatment at the dispensary. At the St. Paul Hospital, 729 cases of infectious disease were treated, among them being 180 cases of diphtheria, 392 of scarlet fever, 63 of measles, 83 of erysipelas. The average number of days of treatment was 33, and the total number of hospital days was 24,188.

Some decrease was apparent in the number of cases of smallpox in the province during February, although the number of cases reported was by no means small. The following are the figures: district of Three Rivers, 94 cases; district of Valleyfield, 33 cases; district of Montreal, 18 cases.

The first annual report of the Mount Sinai Sanitarium at Ste. Agathe has been issued. During the year, fifty-seven patients were admitted; seventeen of these were discharged "greatly improved," and seven discontinued the treatment. The sanitarium was built purely by subscription and is maintained by a society numbering
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nearly three thousand members, whose subscriptions amount annually to over thirty-two thousand dollars.

An immigration detention building is being built on St. Antoine Street, Montreal. The building was commenced last December, and is expected to be completed by December 1st, next. It is being erected by the government under the direction of the Department of Public Works, and is intended for the temporary detention of persons about to be deported. The cost will be approximately $76,000. The architects of the building are Messrs. Ross and Macdonald of Montreal.

MANITOBA

A committee has been appointed at Brandon to consider the expediency of establishing a municipal abattoir. The first meeting was held February 15th. Some difference of opinion prevailed on this occasion; it was recognized that the existing conditions were not all that could be desired, but the question of cost was somewhat of a stumbling block. As things are at present, it is impossible for the butchers to keep the health regulations; the slaughter houses were built before these laws were made and when the city was very much smaller than it is now. It was decided that the butchers should be asked to prepare a statement of their views on the question, and that two butchers should be appointed to the committee to assist in its further deliberations.

The sixth annual meeting of the Virden Hospital was held February 18th. The report for the year was a most satisfactory one; the hospital is now free from debt and the per capita daily cost was reduced from $2.05 in 1911 to $1.75 in 1912. Two hundred and twenty-three patients were admitted and twelve deaths and five births occurred during the year.

A grant of thirty thousand dollars has been made to the Winnipeg General Hospital. This amount will cover last year's maintenance deficit. During the year it was necessary to refuse a great many private patients, as there was no room for them, but all the applicants to the public wards were admitted. This naturally meant a financial loss to the hospital and accounts largely for the deficit. The daily cost for each patient was $2.48. The charges for private wards have been increased and are now from three to
five dollars; the semi-private patients pay a little more than two dollars a day.

SAKSKATCHEWAN

Dr. F. R. Chapman has been appointed Medical Health Officer for Saskatoon, at a salary of $250 a month.

The old smallpox hospital at Saskatoon is to be moved from its present position and placed near the city hospital. It will be used as a ward for cases of contagious disease.

Quite a serious outbreak of smallpox occurred at Big River, a hundred miles north of Prince Albert. Practically the whole district was placed under quarantine and every possible means of preventing the spread of the disease was taken. The cases are of the usual mild type and the worst is now thought to be over. Unfortunately, the disease has appeared also in some of the neighbouring lumber camps.

The plans have been approved for an isolation hospital to be built at Prince Albert. The cost will be about seven thousand dollars.

The Wolesley Hospital is to be enlarged as soon as the necessary funds can be collected.

A temporary isolation hospital is to be erected at Wilkie.

ALBERTA

The failure on the part of the teachers to detect a recent case of measles in one of the Calgary schools resulted in the appearance of eight other cases of the disease among the children in the school. Such occurrences would seem to indicate the necessity of the medical inspection of children in schools.

The directors of the High River Hospital make an earnest plea for more financial assistance. They state that it will be impossible for them to carry on the work unless more help is given.

The Royal Alexandra, and the South Side hospitals of Edmonton, have been amalgamated. The former institution has
become a municipal hospital and its buildings and equipment have been transferred to the city, together with its liabilities. The hospitals will be under the control of a commission—the Edmonton Hospital Commission—which will consist of fifteen members, seven to be chosen from the Board of the Royal Alexandra, three by the university, and five by the city council. No decision has yet been reached concerning the Isolation Hospital. At present, this is a municipal institution under the control of the medical officer of health.

The provincial government has granted one hundred and fifty-dollars to the Jubilee Hospital at Victoria.

A grant of ten thousand dollars has been made by the city council to the Prince Rupert General Hospital.

The hospital which is to be built at South Edmonton will be a four-storey building, with basement, 150 feet by 50 feet, constructed of structural steel and pressed brick. The cost is estimated at one hundred thousand dollars.

To provide accommodation for patients until the new hospital is completed, a temporary isolation hospital has been built at Regina at a cost of one thousand four hundred dollars. The building is 65 feet by 25 feet, is one storey high, and contains two large wards.

Dr. A. H. Taylor has been appointed superintendent of the Calgary General Hospital. Dr. Taylor commenced his duties on the first of this month. He is a graduate of Toronto University, having taken his degree in 1910, and has been acting as assistant superintendent of the Toronto General Hospital.

BRITISH COLUMBIA

The medical inspection of pupils is now an important branch of the work done in the Vancouver schools. The medical officer of health is assisted by a staff of nurses, and during the past year 47,260 children have been inspected and 6,879 have been given a careful physical examination. Nearly one thousand visits were made to the homes of children who were unable to attend school on account of illness.
The Vancouver General Hospital is experiencing unusual difficulty in its financial affairs. While its debts amount to $42,000, the money owing to the hospital amounts to $16,000, thus $26,000 is required to pay off the debts already existing. But more than this is needed—the hospital funds are inadequate to meet the expenses, so that a further source of revenue must be found. Up to the present, the neighbouring municipalities have refused to make a grant, although they send patients to the hospital; and last year over $7,000 was expended on the maintenance of these patients. However, it is hoped that some mutually satisfactory arrangement may be come to without much further delay. A government investigation of the affairs of the hospital was made last year; the report has not yet been published in full, but no blame was attributed to the directors and it was found that any cause for dissatisfaction that may have existed arose from undue economies exacted by the inadequate provision which had been made to meet the needs of a rapidly growing institution. Three hundred and twenty-five thousand dollars was recently granted to the hospital by the city; this will be expended in building a nurses’ home, two units of the isolation hospital, and a service building. A new wing was added to the hospital last year and is almost completed. When this is finished, there will be three hundred and seventy-five beds in the main building. The number of hospital days during 1912 was 106,908 and the number of patients treated 5,231. The per capita cost of maintenance was $1.98, slightly more than in 1911, when it was $1.75. Three hundred and sixty-seven deaths occurred, a percentage of 7.02, and 2,335 operations were performed.

Dr. F. F. Wesbrook, dean of the faculty of medicine of the University of Minnesota, has been appointed president of the University of British Columbia. Dr. Wesbrook was born in Brant County, Ontario, and is a graduate of the University of Manitoba; he will take up his new duties early in May. It is expected that classes will be held next summer, but the university buildings which are being erected at Point Grey will not be ready until the end of next year.

Six patients were treated in the Quesnel Hospital during January.

A new building is to be constructed on the site of the present Kootenay Lake General Hospital.
The fourteenth annual meeting of the Chemainus General Hospital Association was held February 11th, when a satisfactory report of the year's work was read. The number of hospital days during the year was two thousand five hundred and thirty-five.

Dr. C. A. Graves, of Prince Rupert, has been appointed permanent medical officer of the Masset band of Indians.

The annual meeting of the Royal Inland Hospital was held February 26th. The new building was completed last September, and formally opened by H. R. H. the Duke of Connaught, on the seventeenth of that month. The financial statement for the year ending January 31st, 1913, shows a deficit of $3,326.80. The daily cost of maintenance has increased during the year from $1.88 to $2.07 for each patient, and this, together with the increase in salaries, accounts for the overdraft. The new building cost approximately $110,000 and the equipment $10,000. The old hospital site was sold for $11,500, but there is still a balance of $36,000 to be paid. The provincial government has promised to grant $15,000, so that the amount still to be paid off on the building is in reality $21,000. An effort will be made to collect this money by private subscription. During the past year, 1,130 patients were admitted, and the hospital days numbered 21,108; during the previous year, 931 patients were admitted and the number of hospital days was 15,816.

A provincial grant of $2,500 has been made to the Merritt Hospital. Grants have also been made to the hospitals at Harrison Hot Springs, and at Ashcroft.

An effort to collect $50,000 is being made by the Royal Margarete Club at Vancouver. If subscribed, the money will be expended on equipment for the addition which is being made to the St. Paul Hospital. This hospital was established in 1894 by the Sisters of Charity of Providence. It is devoted to charitable work of every kind and the great majority of patients treated are of the indigent class.

A meeting was held, on March 4th, of the New Westminster Hospital Board to consider the equipment of the Royal Columbian Hospital which is in course of construction. As the money to erect the new building has been provided partly by the city, which subscribed $130,000, and partly by the provincial government, which
subscribed $100,000, and as during 1911 and 1912 five hundred and twenty-five patients from the neighbouring municipalities were admitted to the hospital, it was felt that the $30,000 required for equipment should be contributed by these municipalities.

Dr. Richard Port has been appointed medical officer of health at Mission City.

NEWFOUNDLAND

Smallpox is reported from Barren Island. The disease has been prevalent for some little time but its exact nature was not known. As is usual in these outbreaks, the disease is of a mild type.

Canadian Literature

Original Contributions

*Dominion Medical Monthly*, March, 1913:

A Case of Gonococcal Septicaemia  .  .  .  .  .  .  A. C. Hendrick.
The Cure of Poverty  .  .  .  .  .  .  .  .  .  .  .  A. C. E.

*The Canadian Practitioner and Review*, February, 1913:

Some Observations in Anaesthesia  .  .  .  .  .  C. W. F. Gorrell.
Medical Aspects of Septic Peritonitis  .  .  .  .  John Ferguson.
General Septic Peritonitis  .  .  .  .  .  .  .  S. M. Hay.
General Peritonitis in Gynaecological and Obstetrical Practice  .  .  .  .  .  B. P. Watson.

*The Western Medical News*, December, 1912:

A Degree in Surgery  .  .  .  .  .  .  .  .  .  .  .  Editorial.

*L’Union Médicale du Canada*, February, 1913:

Les Devoirs du Médecin auprès d’une Parturiente  .  .  .  .  .  .  E. A. René deCotret
Le Bulletin Médical de Québec, February, 1913:

Les inspecteurs régionaux du Conseil d'Hygiène de la province de Québec. O. Leclerc.
Prophylaxie de la Syphilis et "606". P. V. Faucher.
Observation clinique. O. Leclerc.

The Canadian Journal of Medicine and Surgery, March, 1913:

Treatment of Diffuse Septic Peritonitis. H. A. Bruce.

The Canada Lancet, February, 1913:

The Psychic Effects of Accidents. T. A. Williams.
Treatment of Diffuse Septic Peritonitis. H. A. Bruce.

The Public Health Journal, February, 1913:

The point of view in Medical Inspection of Schools. W. E. Struthers.
The Prevention of Tuberculosis in the Country. H. G. Roberts.
The Dentist as a Social Worker. A. D. Thornton.
The Vitality of Typhoid Bacilli in Water. Joseph Race.
Storm and Surface Water Drainage in Relation to Sewage Disposal. R. R. Knight.
The Sanitation of the Bivouac. D. B. Bentley.

The annual meeting of the Ontario Health Officers' Association, will be held in the Parliament Buildings, Toronto, May 29th and 30th. All the medical officers in the province are required to attend this meeting, as provided in Section 42 of the Public Health Act. Arrangements are being made for reduced rates on the principal lines of railway, and a large attendance is expected. The programme of the meeting has not yet been issued.
Medical Societies

OTTAWA MEDICO-CHIRURGICAL SOCIETY

A meeting of the Ottawa Medico-Chirurgical Society was held February 21st, when an interesting address on the physiology of the kidney was given by Professor Brodie of the University of Toronto.

The regular monthly meeting of the Ottawa Medico-Chirurgical Society was held March 7th. The following case was reported by Dr. S. P. Cooke. Patient was injured a few months ago by a falling plank. There was small expansion in right chest, and over base of right lung, posteriorly, there was absence of breath sounds, but a resonant note. On introduction of a needle, air came away freely. Diagnosis: Pneumo-thorax.

The case report was followed by a symposium on Cholelithiasis, in which Dr. Shillington, Dr. Argur, and Dr. Laidlaw took part.

THE MEDICINE HAT MEDICAL ASSOCIATION

The Medicine Hat Medical Association was organized February 1st. On this occasion sixteen members were present. The officers elected were: president, Dr. Charles F. Smith; vice-president, Dr. F. W. Grishaw; secretary-treasurer, Dr. Harold Orr; executive committee: Dr. O. Boyd, and Dr. W. M. Thomas.

WINNIPEG MEDICAL SOCIETY

An amalgamation has taken place between the Winnipeg Medico-Chirurgical Society and the Winnipeg Clinical Society. The new organization has been named the Winnipeg Medical Society. It was felt amongst the profession of the city that a still keener spirit of progress than that which already obtained would be promoted by the union of the two existing societies. Sections representing different branches of specialism are being formed. Arrangements are being made to deal with permanent accommoda-
tion for the Society, and in this respect it is expected that the College of Physicians and Surgeons of Manitoba will extend a helping hand. The following are the officers elected for the present year: president, Dr. J. R. Jones; vice-president, Dr. J. A. Gunn; secretary, Dr. S. Alwyn Smith; treasurer, Dr. Geo. Stephens; trustees, Drs. J. H. Halpenny, J. Lehmann, and R. F. Rorke.

OTTAWA MEDICAL SOCIETY

A regular meeting of the Ottawa Medical Society was held in the Carnegie Library on Friday, January 10th, Dr. Charles W. F. Gorrell, the president, being in the chair. There were forty-one members present.

Dr. W. H. B. Aikins, of Toronto, read a paper entitled, "Radium in Dermatology." The lecture was profusely illustrated by limelight views of cases which had been successfully treated by radium. Several photographs, the originals of which were well-known to some of the members present, were shown on the canvas, and the satisfactory results were easily seen. Sir James Grant, M.D., moved a vote of thanks to the lecturer of the evening. This was seconded by Dr. J. F. Kidd. The president, in presenting to Dr. Aikins the thanks of the society for coming to Ottawa and delivering such an instructive lecture, showed one of his patients, a well-known clergyman of the city, who had been under the care of Dr. Aikins for epithelioma of the tongue. This patient has lately returned from Europe, where he was examined by several eminent surgeons. All were of the opinion that the cure, as effected by Dr. Aikins with radium, was complete.

TORONTO ACADEMY OF MEDICINE

At the regular meeting of the pathological section of the Toronto Academy of Medicine, held on January 24th, Dr. F. W. Ralph gave a demonstration of Wolff and Junghaus's dissolved albumen test for gastric cancer. He had been greatly impressed with the value of this test as used in Ewald's clinic in Berlin, and was now able to report twenty cases of his own. The method consists in making various dilutions of filtered gastric contents after a
test breakfast and adding to each a quantity of phospho-tungstic acid. If a ring forms at the junction of the fluids in a one in four hundred or one in two hundred dilution, the case is almost surely malignant; if the ring forms in the case of the one in one hundred dilution only, it is doubtful; and if present in no dilution, it is benign. Only stomach contents giving a negative reaction to congo red may be used.

Dr. A. C. Hendrick and H. S. Raper reported a case of haematocolpos with examination of the arsenic content. A girl, aged fifteen, complained of pain in the back and suppressed menses. Examination revealed a fluid mass in which the uterus was floating. The hymen was present, but was not imperforate, although there was atrophy of the lower end of the vagina. It was suggested that this latter condition was due to the failure of the vaginal cord to become canaliculized and that the hymen had developed from a portion of the cloacal wall. Dr. Raper reported .005 milligrammes of arsenic in the fluid examined. The theory has been advanced (Riese and others) that menstruation is due to the presence of arsenic in the uterine glands, that it is stored up there until it exists in sufficient quantity to produce hyperaemia and necrosis of surface glands and finally the menstrual haemorrhage. It is supposed that up to puberty the arsenic is used in the processes of growth; during lactation it is secreted in the milk, while in old age it is stored up in various pigmentations. It is probable that the small amount of arsenic found in the case in question was due to the patient's youth.

Dr. Duncan Graham gave a demonstration of a method of isolating typhoid bacteria from urine and faeces. The material is plated on Endo's media and transferred to Russel's double sugar media. This is probably the best method of isolating the typhoid bacillus from those of the intestinal group.

At the general meeting of the Toronto Academy of Medicine, held on March 4th, Professor James Third, of Queen's University, read a paper entitled, "Some clinical observations on arteriosclerosis." This paper appears in full elsewhere in the JOURNAL.

Dr. R. D. Rudolf, in opening the discussion, said: While Professor Third’s paper has covered the field fairly fully, his statistics seem to suggest that there has been an increase in arteriosclerosis in modern times. As a matter of fact, this condition existed among the ancient Egyptians, as a recent examination of mummies has
proved. Probably to-day, as with neurasthenia and appendicitis, we hear more about it. A high blood pressure and arteriosclerosis are not necessarily related. One finds arteriosclerosis without any rise in blood pressure in 50 per cent. of cases, and a high blood pressure frequently exists without any arteriosclerosis that can be detected by clinical examination. The value of potassium iodide is undoubted. Other important points are, the advisability of withholding too much knowledge concerning blood pressure from patients, since hypochondriasis is a common result of not doing so, and venesection. Where headaches, dizziness and other symptoms result from increased blood pressure, the withdrawal of eighteen or twenty ounces of blood frequently gives a relief which is of months' duration.

Dr. T. F. McMahon, speaking on the life assurance aspect of the question, said: The use of the sphygmononomometer has become common during the last five years and many companies are now trying to get blood pressure reports, especially on candidates of over forty years of age. The statistics of Dr. J. W. Fisher, of the Northwestern Mutual, probably the best submitted so far, are decidedly startling and show that the mortality in all cases with abnormally high blood pressure was from 9.3 per cent. to 276.46 per cent. in excess of the general average of the company during the same period. Evidently, from the results of this extensive experience, the use of the sphygmononometer in life insurance examinations is important. While great care must be taken to do no injustice to those whose blood pressure is abnormally high from transient causes, careful reports on blood pressure will enable the companies to weed out a dangerous class of risks now accepted at ordinary rates.

Dr. V. E. Henderson drew attention to the fact that emotional disturbances have a tendency to increase the secretion of the adrenal bodies and therefore are a remote cause of arteriosclerosis. Bacterial action on end products of digestion result in the formation of histamine from histidine and tyramine from tyrosin. These substances are of a similar nature to adrenalin and will increase blood pressure. Proofs of the results of permanent or intermittent increase of blood pressure are furnished by a series of experiments on animals. In one of these experiments daily compression of the aorta for stated periods of time soon resulted in a marked arteriosclerosis.

Dr. J. S. A. Graham showed a number of x-ray plates in which an increase in the size of the aorta was evident. The majority of
cases in which the dulness in the second interspace was three and a half inches or over, gave a positive Wassermann reaction.

Professor Leathes and Dr. Andrew Maephail also briefly addressed the meeting.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The eighth regular meeting of the Society was held Friday, January 17th, 1913, Dr. D. F. Gurd in the chair.


2. Style removed from the nasal duct after being forty years in situ, with specimen. By Dr. Geo. H. Mathewson.

3. A case of abdominal aneurysm, with specimen. By Dr. C. A. Peters.

PAPER: The paper of the evening was read by Dr. Geo. E. Armstrong on "Prostatectomy with suspension of the bladder."

DISCUSSION. Dr. A. E. Garrow: I have been very much interested and pleased with Dr. Armstrong's excellent paper on prostatectomy, and in discussing it will confine myself to a few points only. In prostatectomy it is my belief that in the majority of cases, the operator, in removing one or more fibro-adenomatous masses leaves behind a thinned-out layer of prostatic tissues which forms an inner lining to the prostatic capsule. In spite of Zuckerkandl's views and teachings in the anatomy and embryology of the prostate, in its morphology I still regard it as a three-lobed gland. The importance of the two-stage operation in patients suffering from renal insufficiency and kidney distension, the result of protracted prostatic obstruction, has been sufficiently emphasized by Dr. Armstrong to-night. A week or two ago I performed suprapubic prostatectomy in a very wiry looking old man, under gas and morphia anaesthesia with but little evidence of shock or disturbance in urinary secretion, but who succumbed very suddenly in forty-eight hours. I think now that a week of suprapubic drainage prior to prostatectomy might have been followed by a happier result. Dr. Armstrong states that in stitching the bladder to the abdominal wall after suprapubic prostatectomy, he believes he succeeds in improving the power of the bladder to empty itself and diminishes the quantity of residual urine. I am inclined to think that when the obstructing masses are removed from the neck of the bladder,
thereby restoring the high level internal meatus to its normal position, the ability of the bladder to empty itself perfectly or imperfectly depends entirely upon the condition of its muscular wall.

Respecting drainage after prostatectomy I have employed the following method with considerable satisfaction for some years. A number eight or nine English soft rubber catheter is passed through the urethra into the bladder and out through the suprapubic wound. The last inch, including the eye, is cut off, and two or three large fenestrae are made in that part of the catheter which occupies the prostatic urethra. That portion of the catheter which projects about half an inch from the suprapubic wound is transfixed by a large safety pin which lies transversely to the suprapubic incision, thereby preventing the tube from being pulled out accidentally or otherwise. By this method the bladder and prostatic pouch can be readily irrigated through either end of the catheter and blood clots washed out, and the wound secretions are constantly drained away from the neck of the bladder. Further, if long rubber tubes are attached by glass connections to the bladder and urethral ends of the catheter, the urine is readily conducted to a urinal hanging on the side of the bed and the patient can be kept dry and comfortable. In my own series of prostatectomies only one case has suffered from incontinence, the result of a perineal operation performed many years ago by Alexander's method. The patient is still enjoying good health, but is compelled to wear a rubber urinal. Two years ago after removing a very hard prostate by the suprapubic route, healing was followed by a stricture, which I demonstrated by posterior urethroscopy to be due to a crescentric fold of scar tissue running transversely near the internal meatus, and which was subsequently dealt with by internal urethrotomy and dilatation. This was followed by permanent and perfect recovery.

I have had the good fortune to see Young perform his perineal operation several times, and I think it is the operation of choice in a selected class of cases, though personally I prefer the suprapubic route. A year ago a patient whom Young had operated on with eminently satisfactory results died of acute abdominal disease and came to autopsy. I was very much surprised at the large amount of prostatic tissue still present in the gland.

Dr. William Hutchinson: Dr. Armstrong's results are very interesting, especially since Judd at the Mayos' clinic has been advocating the primary closure of the bladder and draining by means of a catheter in the urethra. I had the opportunity of trying the method during the past year, and found that there were a number
of objections to it. In the first place, it means a one stage operation; in the second place, it requires some one always in attendance, as the bladder has to be washed out every fifteen minutes for twenty-four hours; and in the third place, I found it very difficult to prevent pus from collecting around the catheter. As far as closure of the bladder was concerned the result was perfect. In speaking of carcinoma of the prostate, the statement was made by Geraghty that it always occurred in the fifth lobe. This statement I consider as too sweeping. There is undoubtedly a certain type, scirrhus carcinoma, which may develop there, but this does not apply to the malignant adenoma which probably arises from the seminal vesicles and the adeno-carcinoma. This latter form was seen in a case operated on last year, and here the growth seemed to arise from the anterior lobe. Stricture of the urethra following prostatectomy is not as uncommon as is generally supposed. The usual type is caused by a band of fibrous tissue across the floor of the posterior urethra, but in one of our cases there was a complete ring of fibrous tissue around the internal urethral orifice. This occurred three years after a suprapubic prostatectomy. It was so tight that it required cutting from the bladder side. I think it would be a wise plan to pass a sound one year after operation.

Dr. R. P. Campbell: With regard to the suspension of the bladder which Dr. Armstrong described, and which is the most striking feature of the operation as described by him, I can quite see how the pouch occurs. The bladder normally is suspended by means of the ureters and the fascia which surrounds the ureters, so that where distension occurs a pouching posterior to the trigone is bound to occur. I have always considered it, however, as only essential to drain the bladder when this pouch would disappear with the ensuing muscular contraction. Dr. Armstrong in suspending the bladder in this way undoubtedly gets rid of this pouch, and perhaps more quickly than otherwise would be the case; but the question is, does he not in suspending the bladder in this way make a much shorter fistula into the bladder, and does he not in consequence of the short fistula run the danger of keeping this fistula open for a much longer time? In other words, do we not get a quicker result in leaving the bladder alone and getting a long fistula, than in sewing it to the rectus and forming a short one? As to the condition of the kidneys, patients do not die from the operation of prostatectomy itself; that is to say, if the kidneys are to be depended on you can almost guarantee that the patient will recover. Everything, in short, depends upon the condition of the
kidneys. In reference to stricture of the internal meatus, I have felt from pathological examination of these specimens that where you have to deal with a pure adenoma of the prostate you run very little danger of having stricture form. If, on the other hand, you have a more fibrous type to deal with, almost a fibroma, or the result of inflammation plus tumour, there is a much greater danger of stricture forming. We have had this exemplified in our clinic in two cases—where, three or four weeks after operation, these patients developed difficulty in micturition. We overcame the stricture by means of Young's prostatic punch and in this way gave relief. I think the true danger of stricture forming really lies in the nature of the condition with which one has to deal.

Dr. C. B. Keenan: I can remember the time when one of our surgeons questioned whether removal of the prostate was a justifiable surgical procedure. Now, from the results shown to-night by Dr. Armstrong, together with the literature of the subject, this question must be answered in the affirmative. Also the cases reported to-night show that the end results obtained by the suprapubic method compare favourably with those obtained by the perineal, and since the former certainly gives the better examination of the bladder it will probably come to be the one of choice. I am very interested in the question of suspension of the bladder by means of sutures, but I think that the scar tissue fulfils the same function in the ordinary suprapubic operation. Cancer of the prostate has been mentioned, and I have always noted that removal of a cancerous prostate gives almost perfect function back to the bladder until death results from metastases in some other part of the body.

Dr. George E. Armstrong: I am very glad that this paper has called forth so much discussion. A number of the speakers, Dr. Garrow and others, mentioned the suturing of the bladder. I have been doing prostatectomies for a long time and I suppose, like others in other fields of work, have been following the fashion of the day. I know one surgeon who simply drops the bladder back and does not put in any tube. I have got better results personally since I began suspending the bladder. When you open the bladder and put your finger in, the trigone is felt away down and you can hardly reach it. You will find that the trigone is brought up by the stay sutures. We take away the normal supports of the bladder and the stay sutures restore or replace these, which we weaken in approaching the bladder. The patient convalesces with a smooth chart. There may be a little rise for a day or two, as the suprapubic wound is closing, but that is all. In twelve cases out of twenty,
there was apparently no residual urine and the average time of closure was sixteen or seventeen days. I certainly could not get as early closing with a long fistula. I cannot keep the catheter in the urethra more than thirty-six hours without exciting urethritis; I have tried it in every way. I have put in catheters of carefully selected sizes and thirty-six hours is about the limit when a mucopurulent discharge commences about the catheter and there is temperature. I do not believe that orchitis will develop unless the patient has had a previous orchitis. I think that the whole question is now well started. There is a great deal of interest at present in the embryology and anatomy of the prostate and it has led to revision of technique, and I believe there will soon develop a much better unanimity of opinion among histologists and pathologists as to the best technique to adopt for the relief of this distressing condition.

EDMONTON MEDICAL SOCIETY

A meeting of the Edmonton Medical Society was held March 5th. An interesting paper was read on this occasion by Dr. Whitelaw on “Isolation hospital planning and management.” The officers elected for the present year are: president, Dr. J. S. Wright; first vice-president, Dr. Malcolmson; second vice-president, Dr. Nicholls; secretary-treasurer, Dr. Jamieson; recording secretary, Dr. Landry; executive committee, Dr. Whitelaw, Dr. Park, and Dr. J. P. McDonald.

PRINCE EDWARD ISLAND MEDICAL ASSOCIATION

The semi-annual meeting of the Prince Edward Island Medical Association was held at Charlottetown, February 14th, under the presidency of Dr. George Dewar. Among those present were: Drs. Jenkins, Carruthers, H. D. Johnson, Ralph, McMillan, Dewar, J. C. McDonald, McGuigan, McLeod, G. H. Jardine, D. R. Fraser, J. D. McIntyre, Houston, Goodwill, A. McNeill, J. F. McNeill, A. A. McLennan, Tanton, and J. Jardine. At the afternoon session, after the reports of the committees had been read, a paper entitled “The clinical features of the McGee case,” was given by Dr. D. F. Fraser and J. D. McIntyre. This was followed by a report of autopsies by Dr. W. J. McMilan. The
evening session commenced with a discussion on pneumonia by Dr. George Carruthers, Dr. Alexander McNeill, and Dr. A. A. McLennan. The discussion was followed by a paper on the treatment of the disease by Dr. S. R. Jenkins and Dr. G. Dewar. The meeting concluded with a report on the Dominion Medical Association, which was read by Dr. Jenkins.

NEW BRUNSWICK MEDICAL COUNCIL

A MEETING of the New Brunswick Medical Council was held March 6th, in the Queen's Hotel, Fredericton. The members present were: Dr. George C. Corbet, Dr. A. F. Emery, Dr. Murray Mac- laren, Dr. Thomas Walker, Dr. Stewart Skinner, Dr. S. C. Murray, Dr. James D. Lawson, Dr. A. B. Atherton, and Dr. G. C. Van Wart. The meeting was devoted to routine business. The election of officers resulted as follows: president, Dr. G. C. VanWart, Fredericton; treasurer, Dr. Thomas Walker, St. John; registrar, Dr. Stewart Skinner, St. John. Board of examiners, Dr. W. A. Ferguson, Moncton; Dr. T. D. Walker, St. John; Dr. E. A. McAuley, St. John; Dr. W. A. Christie, St. John; Dr. W. C. Crocket, Fredericton.

SOCIETE MEDICALE DE QUEBEC

The officers elected for the present year are: president, Dr. Adj. Savard; first vice-president, Dr. P. C. Dagneau; second vice-president, Dr. P. V. Faucher; secretary, Dr. E. Couillard; treasurer, Dr. J. DeVareennes.

A LODGE meeting of medical Freemasons who are members of the Seventeenth International Congress of Medicine will be held on Monday, August 11th, 1913, in the Grand Temple at Freemasons' Hall, Great Queen Street, London. The Most Worshipful the Pro Grand Master, the Right Hon. Lord Ampthill, will open the Lodge at 5 p.m., and close it at 6 p.m. A reception will be held at 4 p.m. in the Connaught Rooms, adjoining Freemasons' Hall. It is hoped that all brethren who wish to be present will communicate with the grand secretary of their own jurisdiction as soon as possible, in order that suitable arrangements may be made.
THE SURGICAL TREATMENT OF PENDULOUS ABDOMEN

By James McKenty, M.D., C.M.

Professor of Theoretical Surgery, Manitoba Medical College

FROM earliest times, surgeons have given much study to the repair of hernial defects of the abdominal wall, but have devoted little attention to that defect resulting from a general stretching of its musculo-aponeurotic structures. Webster's operation (performed November, 1898, at the Royal Victoria Hospital, Montreal), was the first recorded effort to cure this condition by surgical means.

A glance at the normal anatomy of the abdominal wall will aid us in more readily understanding the morbid changes which occur in the structures concerned. In the adult, the linea alba varies in width from one eighth of an inch at its lower end to three quarters of an inch at its upper end. Its fibres are so intricately interwoven that it cannot in any direction be split. At the junction of its lower two-fifths with its upper three-fifths is situated the umbilicus. External to each rectus is the linea semilunaris, an aponeurotic area of variable width, but wider in its lower than in its upper half. Three tendinous intersections divide each rectus muscle into segments. Although these intersections do not usually penetrate through the whole thickness of the muscle, each segment is capable of independent contraction. The most marked of these intersections is the one opposite the umbilicus. The anterior layer of the muscle sheath is intimately attached to them.

Cases of relaxed abdominal wall or pendulous abdomen may be divided into two classes, those in which separation of the rectus muscles is present, and those in which there is no separation. In cases with separation, the linea alba becomes thinned and stretched.
This stretching occurs in all directions. It begins in the region of the umbilicus, but reaches its maximum below this point. In advanced cases, the widest separation is found at the level of the fold of Douglas. In the longitudinal direction, the extent of stretching is indicated by the increase in the distance between navel and pubes. Instead of two-fifths, it may be increased to three-fifths of the whole length of the linea alba. This apparent upward displacement of the umbilicus also shows that the longitudinal stretching takes place chiefly below this point. The rectus muscles themselves become stretched and much attenuated. This also is most marked in the lower half of the muscle. In the second class, in which there is no separation of the recti, the stretching and relaxation is most marked in the aponeurotic area of the lower abdomen external to these muscles. Dr. Coffey has published a description of this type of pendulous abdomen and has also devised an operation for its relief.

Many different methods have been practised by surgeons in the operative treatment of this condition. From this it may be inferred that one method is not suitable for every case, or, what is probably nearer the truth, that the best method has not yet been agreed upon. So far as the musculo-aponeurotic wall itself is concerned the various methods may be grouped as follows:

1. After exposing the aponeurosis by a long median incision, the fat and skin are dissected laterally as far as the margin of each rectus. The anterior sheath of each rectus is opened along the inner border of the muscle for a distance corresponding to the extent of the diastasis. Without opening the abdominal cavity, the stretched linea alba is folded inwards and the rectus muscles brought together by interrupted sutures. The anterior sheath of one side is then sutured to its fellow of the opposite side over the muscles. This is the operation devised by Webster. It has been adopted, with some unimportant changes, by several German surgeons, notably, Weinhold, Gersuny, Amann, Oehlecker.

2. After opening the abdomen, the linea alba is excised and both the anterior and posterior sheaths of each rectus are opened along the inner border of the muscle. The abdomen then is closed by three layers of interrupted sutures. One layer of sutures brings the posterior sheaths together, a second unites the inner borders of the rectus muscles, and a third brings the anterior sheaths together over the muscles. This method is practised by Jonesco, Gallet, Rouppert, and other French surgeons.

3. The double-breasted coat operation. This technique effects
a duplication of all the layers of the abdominal wall excepting the skin and subcutaneous fat. It consists in exposing the aponeurosis by a median incision extending from the pubes to a point well above the umbilicus. The umbilicus is excised and the skin and subcutaneous fat are reflected outward on each side as far as the semilunar line. The abdomen is opened by a median incision through the linea alba, corresponding in length to the extent of the diastasis. Two aponeurotic flaps are thus formed. These flaps are then overlapped in a manner similar to that which would transform a single-breasted into a double-breasted coat. This is effected by placing a series of mattress sutures along the margin of the right flap and passing their free ends from within outward, by means of a pedicle needle, through the left semilunar line. The margin of the left flap is then sutured to the outer surface of the right semilunar line. Superfluous skin and fat is excised and the wound closed.

This is the operation most in favour among English and American surgeons who have written upon the subject. Carless states that he has performed it for the relief of pendulous abdomen

![Diagram](image-url)
"a good many times, with very satisfactory results." In Germany, Piccoli adopted this technique in dealing with a very large umbilical hernia; and Heidenhain, in two cases, after removing a large ovarian cyst, adopted this means of reducing the capacity of the abdomen. The extensive overlapping makes union more secure and more effectively strengthens the middle line of the abdomen than does any other method. By this technique the rectus muscles can be brought together or overlapped, if that is deemed advisable. It does not, however, correct the stretching in the longitudinal direction. As has been pointed out, this stretching occurs chiefly below the umbilicus and involves both the aponeurosis and rectus muscles. These muscles may be attenuated to the bulk of the sartorius, as was the case in one of my patients. In order to relieve these overstretched muscles of strain and allow them to regain their tone, it is necessary to reduce the distance between pubes and ensiform cartilage. This can be effected by a transverse incision across each end of the median incision, and overlapping from above downwards; or, perhaps better, by a single transverse incision at the level of the fold of Douglas, the upper flap being placed internal (or posterior) to the lower, to accord with the normal arrangement at this point. W. Kausch, a German surgeon, reported a persistence of pendulous abdomen after performing a double-breasted coat operation. He attributed this failure to the saggital elongation of the aponeurosis, and purposed overlapping in the vertical direction in his next case.

The following two cases exemplify the pathology of the extreme type of pendulous abdomen.

Case 1. Mrs. A. (Figs. 1 and 2), admitted to St. Boniface Hospital, January, 1911, aged fifty-one, weight two hundred and forty pounds, height five feet ten inches. Has had thirteen children. Five years previously she weighed three hundred pounds. The abdomen hung down over the pubes completely hiding the external genitals. A small hernia protruded at the umbilicus. The distance from navel to pubes was considerably greater than from navel to ensiform cartilage. The recti were widely separated and the linea alba very thin, permitting the viscera to be readily palpated. In the erect position marked ptosis of the right kidney, liver, stomach and the transverse colon, could be easily determined. Between the recti, the subcutaneous fat was scanty. This woman complained of symptoms of indigestion, dragging pains in back and abdomen, and attacks resembling renal colic. These symptoms were of several years standing, and had gradually increased in
severity. She had not been able to attend to her house work for several months prior to entering the hospital.

On January 9th, 1911, operation was performed as follows: A median incision, extending from the pubes to a point midway between the navel and ensiform cartilage, was made through skin and fat down to the aponeurosis. The skin and subcutaneous fat were then reflected on each side out as far as the lineæ semilunares, exposing the aponeurosis over a large oval-shaped area. The abdomen was opened through a median incision, and after dealing

with the hernial contents, excising the sac and umbilicus, a diseased appendix was removed. The other abdominal and pelvic organs were found normal. The median incision through the aponeurosis was then extended the full length of the skin incision, thus forming two aponeurotic flaps. These flaps were overlapped from side to side after the manner of the double-breasted coat. For this purpose chromic gut mattress sutures were used. For additional security a longitudinal suture of stout bronze-aluminum wire was passed in and out through the aponeurotic flaps from one end of the wound to the other, each end being tied over gauze pads on the

Fig. 2.—Case 1, After Operation.
skin surface. Before tightening the various sutures, it was found necessary, in order to prevent puckering, to make a transverse incision about four inches long across each end of the median incision. These transverse incisions were closed by overlapping from above downwards; thus shortening the elongated linea alba about four inches, as well as preventing puckering. In this case the overlapping from side to side amounted to about eight inches. Superfluous skin and fat was then excised, and the wound closed with a rubber drain at each end. Suppuration occurred in the upper third of the wound superficial to the aponeurosis. She left the hospital six weeks later with wound healed. The photograph (Fig. 2) was taken in August, 1911, seven months after operation. At that time she said she had been completely relieved of her symptoms and felt in perfect health.

**Case 2.** Mrs. S. (Figs. 3 and 4), aged forty-eight years, weight two hundred and seventy pounds, entered St. Boniface Hospital in June, 1911. She is the mother of twelve children.
Her complaints were similar to those of Case 1. Her symptoms began about eight years previously and had gradually increased in severity. For a year prior to operation she was unable to go about the house without the aid of an abdominal supporter. In 1908 gall stones were removed, with only temporary relief. On examination the rectus muscles were found separated the distance of ten inches at the level of the fold of Douglas. This was the point of widest separation. The umbilicus was found situated

![Fig. 4.—Case 2, After Operation.](image-url)

at the junction of the lower three-fifths with the upper two-fifths of a line drawn between the pubes and ensiform cartilage. The large amount of subcutaneous fat made it impossible to feel the kidneys, but the lower margin of the liver could be distinctly felt on a level with the navel.

Operation was performed as follows: A transverse incision
nineteen inches long was made across the dome of the belly through the skin and fat down to the aponeurosis. The skin and fat were reflected in the form of an upper and a lower flap, thus exposing the aponeurosis from the pubes to a point well above the umbilicus and laterally from one semilunar line to the other. The abdomen was then opened by a transverse incision carried across the middle of the exposed area from the inner border of one rectus to the inner border of the other, thus forming an upper and a lower aponeurotic flap. A number of bronze-aluminum wire mattress sutures were placed along the lower margin of the upper flap and the free ends passed from within outward through the aponeurosis at the lower border of the denuded area and tied upon the surface of the aponeurosis. This had the effect of drawing the upper flap down behind or internal to the lower. The upper margin of the lower flap was attached by means of chromic gut sutures to the outer surface of the upper flap. Overlapping to the extent of eight inches was thereby effected. A mass of superfluous skin and fat, weighing five pounds, was then excised and the wound closed. Convalescence was delayed by an attack of bronchitis. The photograph (Fig. 4) taken on the day she left the hospital one month after operation shows the effect on her figure. This woman has also been completely relieved of her symptoms.

In the second case, in which overlapping in one direction only (i.e. above downwards) was done, the improvement in figure is not so marked as in the first case, in which overlapping was done in both directions.

This study of the subject brings us to the following conclusions:

1. That there are two main indications, first to bring the rectus muscles together and, secondly, to correct the vertical elongation of the aponeurosis.

2. That the double-breasted coat operation, supplemented by a transverse incision with overlapping in the vertical direction, effectively meets these indications.

3. That the Webster operation is suitable for mild degrees of relaxation only. Even in these, the other method is preferable. It has the doubtful advantage of avoiding the opening of the peritoneal cavity. Such opening, however, is distinctly indicated for exploratory purposes in the great majority of cases.

4. That the practice of some surgeons of mobilizing the rectus muscles, drawing them out of their sheaths, and suturing them together in the median line, does not seem well considered. Such disturbance must effect injuriously their nerve and vascular supply.
Besides, they are usually too much wasted to add much to the strength of the wall. A much stronger wall is formed by duplication of the aponeurosis.

5. That in cases associated with much subcutaneous fat, the transverse skin incision, as used in Case 2, is preferable to the median incision, in as much as it permits of free excision of the fat in the flanks, where it is most abundant.

6. That the good results of operation in pendulous abdomen strongly support the view that a normal intra-abdominal pressure is the most important factor in maintaining the viscera in position.

7. That this condition has not received the attention it deserves at the hands of the profession. In its milder degrees, relaxation of the abdominal wall is common; although extreme cases, such as I have here reported, are rare.

BIBLIOGRAPHY.

Gersuny, Centralbl. für Chir., 1893, No. 48, p. 921.
Amann, Centralbl. für Chir., 1904, No. 30, p. 903.
Oehlecker, Centralbl. für Chir., 1911, No. 11, p. 388.
Jamyot de la Haye, Thèse de Paris, 1911.
Jonnesco, Presse Médicale, 1899, No. 87.
Piccoli, Centralbl. für Chir., 1900, No. 2, p. 36.
Holmes Bayard, Private communication.
Robinson, Med. Standard, February 7th, 1907, p. 69.
Menge, Centralbl. für Gyn., 1909, No. 28, p. 977.
Wullstein, Centralbl. für Chir., 1906, No. 38, p. 152.

At a meeting of the St. Catharines public school board, on Thursday, March 13th, a resolution from the City Teachers Association was read, asking that consideration be given to the necessity for the medical inspection of the children in the public schools. The matter was referred to the committee on school management.
SALVARSAN IN THE TREATMENT OF SYPHILITIC DISEASES OF THE CENTRAL NERVOUS SYSTEM


Late Chief of Clinic, Neurological Institute of New York

My purpose in writing this paper is to call attention to the hope that may be placed in the thorough treatment of diseases of the nervous system due to syphilis, and to present a simple and fairly exact way of establishing the diagnosis and prognosis, and of following the effect of treatment by laboratory methods, in addition to purely clinical examination. The material on which this work has been done was seen in Dr. Joseph Collins' service in the Neurological Institute of New York, in the years 1911 and 1912, some of the cases also having started treatment in the last few months of 1910. I wish to extend my thanks to Dr. Collins for his kind permission to me to publish these facts gathered from his material, and also, incidentally, for a very extensive and valuable experience gathered under him.

I should like, first, to attempt a rough classification of the field to be covered, but would say that it is not meant to be a complete list of diseases of the nervous system caused by syphilis, being merely a list of diseases of which a sufficient number of cases have been treated to give fairly reliable statistics. Those diseases of the brain and meninges studied are general paresis; cerebral syphilis or other psychoses apparently of specific origin; gummata of the brain; syphilitic meningitis, acute and chronic; epilepsy of specific origin; and diseases of the cerebral blood vessels, chiefly manifested by hemiplegia.

In general paresis the Wassermann reaction has been found to be positive in the blood of 100 per cent. of cases, and in the cerebrospinal fluid, using the larger quantities, say 1 cc., it has been found to be positive in 92 per cent. of cases. The globulin content in the cerebrospinal fluid has been found to be enormously in excess in 86 per cent., and the cells in excess in 71 per cent. With regard

*Read before the Academy of Medicine, Pathological Section, Toronto, February 25th, 1913.
to the number of cells found, different workers seem to have had different experiences. In the majority of our cases they numbered less than twenty to the cubic millimeter. In only a few cases did they rise above one hundred, as constantly reported by some observers.*

As regards the treatment of these cases, it is difficult to speak with certainty. The condition has been uniformly regarded as incurable and our experience cannot be said to belie this opinion. We have been hampered, however, by our inability to retain many of these cases under our care, due to the lack of accommodation for mental cases. Nevertheless, the results of treatment in a few cases can give us very valuable information. One, a man of forty-eight, showed a positive Wassermann reaction in the blood, negative in the cerebrospinal fluid, an excess of globulin, and eight cells per cubic millimeter in the latter. He was given 0.6 grms. of salvarsan intravenously, and a month later showed no change in the laboratory findings, the number of cells even remaining exactly the same. He was given a second dose intravenously, but died some months later having shown no improvement. A second case, male, aged forty-two, first gave a positive Wassermann reaction in the blood and cerebrospinal fluid, an excess of globulin, and eleven cells per cubic millimeter in the latter. Within five months he was given six doses of salvarsan (0.6 grms.), and three examinations made showed no change in the laboratory findings except a reduction in the number of cells from eleven to eight, quite probably a mere accident. In the last examination the Wassermann reactions were negative, the globulin somewhat reduced in amount, and the cells eight. Shortly after, he had a series of convulsions and a hemiplegia, and died within twenty-four hours. A third, and for my purpose, the most important, was a male, thirty-two years of age, with Wassermann reaction in the blood and cerebrospinal fluid positive, globulin in excess, and cells thirty to the cubic millimeter in the latter. In the first three months of treatment he had the equivalent of thirteen full doses once or twice a week or farther apart, sometimes given in half doses more frequently. At the end of this time treatment was suspended, owing to the appearance of an intense general dermatitis. This we took as an indication of the limit of his tolerance for arsenic, and it was rather interesting to notice that after this the administration of very small doses was sufficient to bring about a return of the rash.

*These figures have been previously published by Dr. Collins and myself in the Journal of the American Medical Association, June 22nd, 1912.
During this treatment the only change in the laboratory findings was a reduction in the number of cells from thirty to twelve per cubic millimeter. Six weeks later he was so well mentally and physically that plans were made to put him back to work as a stenographer, and indeed he was doing some such work for us. But for a week he complained of headache, and one night he became irritable, his speech was almost unintelligible, and after a slight convulsion he became comatose and remained so for thirty-six hours. During this, and for a few days after, he was almost unable to swallow and could hardly speak. For two weeks following this his mental condition was worse than it had ever been; but without treatment he returned to his former improved condition. Treatment was again resumed and he has now had the equivalent of twenty full doses. The laboratory findings have now become entirely negative. I say that for my purpose he gives the most valuable information. We had hitherto stated that in general paresis the laboratory findings could not be appreciably altered, and certainly could not be rendered negative, in which case we were bound to admit the disease was incurable. But here is a ray of hope, and perhaps, if treatment is pushed even more vigorously, we may yet conquer the disease. At all events the futility of a few doses has been demonstrated.

By cerebral syphilis I mean those psychoses of syphilitic origin not showing the symptomatology of general paresis. I am aware that it is a loose term, but it is meant to be. Many cases of insanity occur with a definite history of syphilis, which may perhaps have merely precipitated a latent psychosis due to other causes. In these the laboratory findings frequently include positive Wassermann reaction in both blood and cerebrospinal fluid, with an excess of globulin and cells in the latter. The results of salvarsan therapy in these cases have been almost on a par with those in paresis, though the laboratory evidences of active syphilis have been more readily abolished, and some cases have made marked improvement, though others have later developed typical paresis.

Gummata of the brain are almost always of meningeal origin, and so may be classed with syphilis of the meninges. But I give them a separate paragraph in order to consider the grave consequences that large ones may cause. Such consequences are: optic neuritis, giving way to atrophy if not quickly relieved, an extension of the permanent damage caused to the brain substance by pressure as well as by the actual inflammatory condition, and so on. I shall refer to the influence of salvarsan on the optic nerve later, but would
say here that if treatment by salvarsan is once begun, it should be vigorously pushed. In all cases, of course, if there is evidence of much or increasing pressure, decompression may have to be performed in addition to the salvarsan treatment, as well as in the older form of medication.

Cases of meningitis due to syphilis may be chronic or acute, and may involve all the coverings to a marked extent, or one more than another. The chronic cases present, perhaps, only the solitary symptom of headache for a number of years, and may give little or no evidence of active syphilis, as far as laboratory findings are concerned. In these cases, if one has reason to suspect that they are due to syphilis, salvarsan can do no harm, though it may not give much relief. In the acute cases, however, we find a positive Wassermann reaction in the blood, varying in the cerebrospinal fluid, and usually an excess of globulin, and from one to several hundred cells per cubic millimeter in the latter. They have been most satisfactory cases to treat, as may be seen from the following case: Male, aged twenty-five. Six weeks headache, general lassitude and increasing somnolence. Admitted in a semicomatose condition; knee and ankle jerks increased; Babinski reflex present in both feet; complete paralysis of external rectus muscle of left eye, almost complete of right; discs pinkish, margins indistinct; pupils large, but react; Wassermann reaction in blood and cerebrospinal fluid positive; globulin in excess and cells one hundred and thirty-four per cubic millimeter in the latter. He was given 0'6 grms. salvarsan intravenously, and five days later had no headache, and could read the newspaper easily, the paresis of the left external rectus muscle being comparatively slight, and that of the right eye not appreciable. He was given a second full dose a week later, and five weeks from his admission to the hospital he returned to work. Since then he has not missed a day's work from sickness, and has gained over forty-five pounds in weight. Here two doses were sufficient to render the laboratory findings in the cerebrospinal fluid negative, but a third dose was given later on account of the persistence of the positive Wassermann reaction. Now, more than a year later, there is nothing revealed by his feelings, laboratory investigation, nor physical examination, to show that he has ever been sick, except the persistence of the Babinski sign.

Epilepsy in adults is frequently caused by syphilis, and in many of our cases where other causes, such as renal disturbances, could not be discovered, they were treated as such. In as many as fifty per cent. of these cases no sign of active syphilis could be
obtained, though in some a history of infection was given. In none of them were any pathological changes found in the cerebrospinal fluid, and a positive Wassermann reaction in the blood of only a few. Yet in many of these in whom the laboratory findings were negative, a marked reduction in the frequency of the convulsions occurred after the administration of one or two doses of salvarsan, and in some they ceased altogether. Where the history of convulsions extended back over five or six years, the results were not so good.

Syphilitic changes in the cerebral vessels, as evidenced by headache, vertigo, parasthesias, hemiplegia, etc., caused, as might be expected, unless the vessels were of meningeal origin, little change in the cerebrospinal fluid. The Wassermann reaction was frequently negative, the globulin very little in excess, if at all, and the cells below twenty per cubic millimeter. The Wassermann reaction in the blood was usually positive. If these cases were not of more than three to six months standing, they were usually quickly and markedly improved by salvarsan, and the laboratory findings were soon rendered negative. Those of longer standing could only expect that the further extension of the disease might be checked.

Coming to the spinal cord, we shall consider tabes, degenerative and exudative; myelitis; gummata of the cord and of the roots; meningitis, chronic and acute; and those cases simulating tumours of the cord, and certain conditions resembling diseases of other aetiology, viz., progressive muscular atrophy and paramyoclonus multiplex.

Without entering into the controversy of what is the exact process leading up to the development of tabes, we have taken as a working hypothesis the idea that the degenerative change may be due to an existing or a previous inflammatory condition of the meninges. The presence of an excess of globulin and cells in the cerebrospinal fluid has been regarded as an indication of this inflammation, and where these pathological elements are present we designate the case as one of exudative tabes. Where they are absent, we regard the inflammation as having subsided, leaving permanent degenerative change in the roots, posterior columns, etc., and call this type of case degenerative tabes. Statistics vary somewhat widely in regard to the laboratory findings in tabes, on account, no doubt, of the comparative ease with which they can be altered by treatment in addition to the differences in severity of the different cases. Our cases gave a positive Wassermann
reaction in the blood in 66 per cent., but in the cerebrospinal fluid in only 41 per cent., globulin was in excess in the cerebrospinal fluid in 33 per cent. and cells in 60 per cent. The number of cells ranged from one to two or three hundred, between fifty and one hundred being a fair average.

The salvarsan treatment of tabes has been most satisfactory. At the beginning little was expected from salvarsan for the degenerative cases, and little was accomplished beyond the tonic effects of the arsenic. Reliance had to be placed on other forms of treatment. However, in the exudative cases the pathological conditions of the blood and cerebrospinal fluid were found to be under excellent control. The globulin usually diminished or disappeared first, the cells came down rapidly in number, and the Wassermann reaction in the blood and cerebrospinal fluid in all cases disappeared after varying amounts of treatment. But here a note of warning is necessary. Even the complete disappearance of all signs of active syphilis is no guarantee that the disease has been entirely eradicated. Both fluids must be examined from time to time, at first frequently, perhaps a month apart, later at longer intervals, so that we may immediately renew treatment on the earliest reappearance of the condition, at which time it is most easily controlled, and before any further degree of permanent damage may have resulted. Nor is it time to rest on our oars when the syphilis has been checked. That is not the whole treatment of tabes. The patient has probably heard or has been told that the disease is incurable, and perhaps that he will never walk again. I believe the disease to be essentially curable. I do not mean that we can replace wholly degenerated nerve tissue, but why should we say his symptoms are due to completely degenerated fibres and tracts? If we relieve the inflammation, who can say how much exudate and œdema will disappear? This encouragement has to be given. The patients morale has to be improved. He must be reeducated, and taught to help himself. Only where we can get his coöperation, and are prepared to personally supervise his efforts, can we expect to get the best results.

Myelitis, as encephalitis, is usually an extension from the meninges into the nervous tissue. Under it I would include cases of spastic paraplegia, gummata in the cord, obliteratorive changes in the blood vessels, and the cases mentioned above as simulating diseases of other aetiology. As far as any of these cases are concerned, the laboratory findings must depend on the amount of meningeal involvement. This may be very slight, but the inflammatory
condition, having extended into the substance of the cord, has produced grave symptoms without very striking changes in the cerebrospinal fluid. The Wassermann reaction in the blood is usually positive. In the cerebrospinal fluid it is variable. Globulin is usually in excess, except in those cases due to blood vessel change, where it is often not in excess, and the cells number perhaps from fifty to one hundred or higher. The syphilitic process in these is usually easily checked, as evidenced by the reduced or negative laboratory findings, but permanent damage is more likely to have resulted in these cases than in ones of pure meningeal involvement.

Cases such as these, resembling progressive muscular atrophy, are probably more frequent than has hitherto been imagined, and yet those of our cases which were examined from this standpoint, and found to be due to syphilis, showed marked improvement rapidly following treatment by salvarsan.

I have seen only one case resembling paramyoclonus multiplex. He had a positive Wassermann reaction in the blood and cerebrospinal fluid, an excess of globulin, and ninety cells per cubic millimeter in the latter. Within two weeks of starting treatment the pathological movement in the muscles had ceased, and the condition of the blood and cerebrospinal fluid had improved, but he is too recent a case to give any conclusions yet.

Of all conditions requiring thorough investigation, that so often carelessly called neurasthenia, requires most. Frequently, in seeking for a cause for the symptoms bringing a so-called neurasthenic to us, evidences of syphilis have been found, perhaps a direct history of infection, or a history of the husband having died of tabes, etc. These cases would give a positive Wassermann reaction in the blood, but usually no changes in the cerebrospinal fluid. Systematic treatment with salvarsan was found to be of the greatest assistance in the relief of these patients.

One point about which there has been a great deal of misunderstanding and unnecessary fear is the danger to the special senses, especially sight, in salvarsan therapy. So far, in many hundred cases treated, we have seen no injurious action to the special senses. It is now understood that one dose may be sufficient to bring about an exacerbation of symptoms in cases of syphilis. This can be readily seen in the pains of a tabetic, which almost invariably become worse after the administration of salvarsan. It has also been recognized in treatment by mercury and iodides. If, then, we stop at this point in the case where a patient's optic nerves are affected, it is obvious that the increased inflammatory
reaction, lasting perhaps only a few hours, may just be sufficient to cause permanent impairment of vision. Rather than proceed cautiously, we must, having once started, push on rapidly until we have conquered the process. If asked do I fear impairment of the function of the special senses from the use of salvarsan, I would reply, no, I have never seen it, and am not afraid of it, I must be permitted, however, to push the treatment vigorously, and I must be sure of my technique, so that no adventitious influences may complicate my results.

Two cases may illustrate results. One, a man in the early stage of general paresis, had been for two weeks getting progressively deafener. When first seen he could hear a low whisper at only four feet. In a month's time, after one dose of salvarsan he could hear a low whisper at twenty-three feet. This improvement was maintained, and during the next few months he received many more doses. At a later stage in our experience we should have pushed the treatment much harder. The other case was that of a man whose vision was so poor that he could not see a chair in his path as he walked across the floor. The discs were very white with only a faint pinkish tinge. The Wassermann reaction in the blood and cerebrospinal fluid was positive. Globulin was in excess in the latter, and fifty cells to the cubic millimeter. He was given four full doses of neosalvarsan on alternate days, and three months later could read newspaper type readily. At this time the treatment was repeated on account of the Wassermann reaction in the blood still being positive, though the cerebrospinal fluid showed no abnormalities. These cases quoted above were for almost two years treated by salvarsan alone, and in this way much information as to its effect was obtained. Nevertheless, it has been found advisable to put many patients on heavy mercurial treatment in addition. In many cases alone it might have had almost no appreciable effect, yet when combined with salvarsan it was most helpful in finally conquering obstinate cases.

We have had our failures as well as successes in the use of salvarsan. General paresis must even yet be classed among the failures. Yet even here I believe there is a ray of hope. Some cases of pachymeningitis, both cerebral and spinal, have relapsed or even not responded at all. But there can be no reasonable doubt that in salvarsan at the present time we have the most valuable weapon known to fight syphilis of the nervous system, that cases can be cured, or at least put back in the ranks of wage earners, and that salvarsan is not to be feared as some would have us do.
If used at all it must be used freely, until all laboratory indication of active syphilis has disappeared. Above all, we cannot expect miracles from it, and its use must frequently be supplemented by other forms of treatment, whether medical, surgical, or other.

In speaking of the cells which are found in excess in the cerebrospinal fluid of these cases, lymphocytes are meant in the majority of instances, they being those most commonly found in excess in chronic diseases. We have been in the habit of demonstrating them by the Fuchs-Rosenthal method. A stain of the following composition is drawn up to the "1" mark of a white blood cell pipette: methyl violet 0.1, acetic acid 2, distilled water 50. The cerebrospinal fluid, freshly obtained and well shaken to ensure an even distribution of the cells, is then drawn up to the "11" mark. After a couple of minutes the cells will be found well enough stained to be counted in an ordinary blood counting chamber, preferably of a Zappert or Türk ruling. The excess of globulin is detected by the Kaplan method. Half a cubic centimeter of the fluid is brought to the boiling point, avoiding bubbling, in a test tube one centimeter in its interior diameter. Two drops of a 5 per cent. solution of butyric acid are added, and the mixture again brought gently to the boiling point. Half a cubic centimeter of supersaturated solution of ammonium sulphate is then run in under the mixture. If a flocculent precipitate appears within twenty minutes, globulin is considered to be present in excess. These two methods in themselves give a very fair index as to the patient's condition, when it is found difficult or impossible to have Wassermann reactions performed. That is, provided they are at all in excess. Their absence cannot be taken to imply that there is no active syphilitic process at work.

The Perley Memorial Hospital for Consumptives was formally opened by H.R.H. the Duke of Connaught, March 12th. The group of buildings, including the one just opened and the Lady Grey Hospital, in future will be known as the "Royal Ottawa Sanatorium." This name has been given with the consent of His Majesty the King, who thus expresses the keen interest taken by him in the prevention of tuberculosis.
MILK AND MEAT INSPECTION

By C. E. Edgett, V.S.

Dominion Government Meat Inspector, Montreal

The duty of the meat inspector is to provide clean, healthful, wholesome meat, for rich and poor alike. In these days when people are massed in large towns and cities, it is not always possible for the buyer to know from personal observation the source of his meat supply, and whether or not it comes from healthy animals. The purchaser at the retail store can determine as to the satisfactory appearance, price, and cut, but the source and previous treatment are almost a sealed book, and positively unknown to the majority of people.

The first step to solve the problem of a healthful meat supply, was taken by the Dominion government in September, 1907, when the Meat and Canned Goods Act was put in force, and executed by a staff of some fifty veterinarians, the Act being administered by the Health of Animals Branch of the Department of Agriculture. The officers of the department received special training by an authorized meat inspection course at the Chicago Veterinary College, together with practical instruction under the United States government officials at the Chicago packing houses. Since then, meat inspection has been added to the curriculum of the Ontario and Quebec Veterinary Colleges. With the authority of this law, the Minister of Agriculture may cause to be made by the above-mentioned inspectors, an examination, both ante mortem and post mortem, of all animals intended for food at any packing house, abattoir, etc., where meat or meat food products are prepared for interprovincial or foreign commerce. Before a corporation is allowed the privilege of exporting, the building and equipment must conform to the sanitary regulations laid down by law and verified by the inspector. The number of animals slaughtered under inspection is about one-half of the total slaughtered in Canada. This, we readily see, is a grave mistake, and a matter that will have to be dealt with sooner or later, when we consider the conditions met with in food-producing animals.

Read at a meeting of the Montreal Medico-Chirurgical Society.
It is a daily occurrence at the large packing houses to find from 10 to 20 per cent. of swine affected with tuberculosis, the percentage sometimes running very much higher. These infections vary from slight to generalized. Cattle and swine are both affected with this disease, but we meet with it in an advanced stage in cattle, on account of the length of life before slaughter. In one year, 3,309 carcasses were condemned, as well as 308,033 portions, for this disease alone. The larger percentage of tuberculosis in swine is accounted for by the amount of disease in dairy cattle, the swine being fed on the milk, and allowed access to the excreta of these animals. The alimentary tract of cattle throws off great numbers of tubercle bacilli, especially in the case of pulmonary tuberculosis, which is common in these animals. This I shall refer to at greater length when considering the milk question. If this disease were stamped out of the bovine (which has been found practicable by the "bang" system), swine would not be infected.

Other diseases, as actinomycosis (lump jaw), both primary and secondary affections, come under our notice. Although this disease is rarely transmissible to man, the thought of eating it is abhorrent, especially so when we consider the mixed infection as shown by the tumour. During the past year, 6,638 carcasses were met with. Then we have the cysticercus bovis and celluloseae, the cause of tape worm. This condition is more noticeable in fat, healthy-appearing western cattle, the carcasses when dressed being apparently normal. This disease, as suggested, is more prevalent on Western ranges, on account of the open closets, the rivers and streams generally overflowing in the spring, carrying the segment-infected excreta over, and to, the grazing districts. The coyotes and prairie wolves tend to spread these infections over the prairies, where the cattle readily become infected. The same condition is met with in the Eastern Townships, as regards surface closets, which become flooded during the rainy season and during freshets. Last year 354 carcasses came under our notice. Cysticercus tenuicollis, from the Tænia marginata of the dog, infects the serous membranes of sheep and pigs. These cysts and affected organs are immediately destroyed on inspection. Then we may notice a hog showing a few harmless looking bites and bruised marks on the skin, which ordinarily would be passed by; but under an inspector the result of the toxic condition in the flesh is readily detected. This is Tænia echinococcus, one of the most serious conditions.

The same can be said of pyæmia and septicæmia, which are
very prevalent in food-producing animals, over 12,000 septic conditions coming under our notice in one year, a great many of which were condemned outright. It is a common occurrence to find animals suffering from different inflammations the result of traumatism, with its usual complications, or, as is often the case with pericarditis in cattle, the result of direct infection from the stomach. These and inflammations from other causes render the meat unfit for food. Then we meet with jaundice, uremia, anæmia and other abnormal blood conditions. The hog with the abnormal sexual smell is very often found; and though the meat may not be injurious, it is often very offensive and repugnant, and is not allowed to be sold for food. This is usual in the cryptorchid hogs. In the castrated animal we very often find septic conditions, the result of infection of the open wound, often causing septicæmia. The actinomyces are introduced here, setting up characteristic tumours in this region.

Parturition and the conditions accompanying it receive a critical examination under the inspector, as well as emaciation, the result of a great many different diseases and conditions. The majority of the above-mentioned diseases cannot be detected by casual observation of the live animal, and only on post mortem examination can we detect some of them. Also, in the majority of these diseases the lesion can be trimmed out by the unscrupulous butchers not under inspection, and the meat placed on the market. Such meat, while seemingly normal and fit for food, is detrimental to the health of the consumer, or of a low food value. And here I might call attention to the condition of swine when received at the slaughter house at this time of year. It is not uncommon to find, on ante mortem examination, animals that have become frozen in transit. I have seen hogs whose sides were frozen solid, and when tapped with the knuckles resounded as though one were striking a board. Then again, in the summer, cars are very much overloaded by the drover, causing suffocation of many animals. These are matters which might well be taken up by the Humane Societies, in the endeavour to make the transportation companies provide proper cars during the different seasons of the year.

Parasitic conditions of the different edible organs are met with to a great extent. The condemnations in one year from this cause amounted to 63,130 portions.

Immaturity, especially noticeable in calves, is the cause of a great many condemnations, not only on account of the age, but also for the septic conditions in regard to the umbilicus. In Montreal alone last year they amounted to over 10,000 animals.
In the case of slaughter houses which are uninspected, there are a great many features which are not only objectionable, but dangerous to the public health. We are all well acquainted with the smell emanating from the small country slaughter house, and thereby know that it is foul and filthy. The location is often some obscure stable, situated on a low-lying swampy place or on the banks of small streams, the streams carrying the pollution to our rivers and hence to our towns, through the water and ice, with the attendant results. Then we know that the feeding of offal to swine is practised here, that rats, flies, dogs and other carriers of disease have access to this offal and filth, and that such diseases as tuberculosis, hog cholera, and other contagious affections, have been disseminated by this means, as well as tapeworm, and other parasites, some of which are harmful to man. And it is under conditions similar to the above, that about one-third of our meat supply is prepared.

Under inspection the sanitary condition of the slaughter house is under the direction of the inspector, who sees that the requirements of hygiene are properly carried out. This is very important where food products are prepared and stored, when it is considered that 276,303 pounds of meat food products were condemned on re-inspection in one year, on account of being dirty, sour, tainted, or decomposed. When inspection is maintained the buyer is careful as to where he purchases his supply of food animals. An animal that is suspicious is rejected by him, with the result that the farmer or drover must sell to an uninspected house, where as a general thing he receives the same price, but will take less. Therefore, we have the majority of suspicious animals placed on the market through uninspected channels, the butcher in offering such for sale does not always do it wilfully, but through ignorance of diseased conditions.

Cold Storage. It might be well for us to deal for a few minutes with the cold storage situation, which we have been in the habit of viewing as a great factor in the problem of the high cost of living; let us now look at it from another point of view, namely, that of the sanitarian. By cold storage we mean a building used for the storage of food in which the temperature is held below 40° F. by refrigeration or ice, for 30 days or longer. It is said that when goods are at the turning point and the dealer is afraid of a monetary loss, he rushes them to cold storage, where they are frozen, if necessary, and held until a suitable storage time arrives to dispose of them. This is done in the case of poultry, eggs, cased and in bulk, meat, fish, game and other perishable goods.
To meet the interests of public health at this point, I am of the opinion that a strict inspection system should be inaugurated at all cold storage plants. Goods found to be unfit for food should be disposed of in a proper manner; the remainder, if in suitable packages to withstand handling, I think should be properly labeled and dated upon entry. Verified temperature readings should be made periodically, to insure regular temperature during storage. I have known accidents happen to the ice machine or conducting coils from rust, etc., necessitating cutting off the ammonia, thus causing a rise of temperature, which resulted in the condemnation of the perishable goods. Though there are a great many abuses of cold storage, under proper supervision it can be made a great means for good.

Milk—The Great Uncooked Food of Man. I will now dwell for a few minutes on the question of the milk supply, which furnishes one-sixth of total food of the average family. This is a large subject, and in the time at my disposal, I shall be able to touch only the most important points. We know that moisture is the chief means of carrying bacteria and that milk is one of the great media, not only for the carrying but for the development and dissemination of them. Such diseases as tuberculosis, typhoid, scarlet fever, and diphtheria, are known to have been spread through the milk supply. The average citizen cannot determine the source and quality of his milk, or the sanitary conditions at the source of supply; but he wants pure, wholesome milk, and depends on those who know, or who should know, to protect him and his family. Milk must be kept free from contamination at the source of supply.

There are few real dairy stables, others are just farm barns with horses, cattle, pigs and hens in the same building, with often just a low board partition separating the animals. The ventilation is poor; there being no artificial means of heat, the cows are required to produce the necessary temperature at the sacrifice of ventilation and light, so necessary to the health of the animals. The water supply for drinking purposes and for washing utensils, is often from a well, unprotected from surface drainage, close to or in the barnyard, low-lying, and surrounded, as is sometimes the case, by foul stagnant pools. The stables are not cleaned out often enough, and the manure is placed near the stable door or windows, immediately behind the cattle. The ceilings and posts, are often covered with cobwebs. The floors of stables and stable-lofts are not tight, and allow dust to settle in the stable on the animals, pails,
and other utensils. The manure-covered flanks of milk-producing cows is a condition well known to all of us. It is unnecessary to go into detail as regards the unsanitary condition of some of our dairies. It is gratifying to know that a vigorous campaign is being conducted by our chief food inspector, Dr. Hood, who has mapped out a great, creditable campaign, which would be much more successful if he felt he had the undivided, active, moral support of the medical men of the city.

Regarding the dairy industry, we know that the commonest disease with which cows are affected is tuberculosis, and that the milk in some form reaches practically all persons. The one who does not use milk, cream, butter, cheese, or ice-cream daily, is an exception to the general rule, and the family that uses no fresh dairy product can hardly be said to exist. And here I might mention the fact that Quebec dairy products amounted to about $45,000,000, last year. It has been proven beyond a doubt, by investigations and tests conducted by the American Department of Agriculture and other bodies, that the bacillus of tuberculosis is prevalent in the faeces of tubercular cattle. These animals are not able to expectorate the discharge from the lungs, in the same way as the human patient, and it is therefore swallowed and churned up with the food during the process of digestion, and excreted per rectum to the extent of 6 bacilli to one-thirtieth grain of faecal matter other than the mucous shreds which contain far more. The average cow passes 30 pounds of moist faeces a day, therefore a tubercular cow passes per rectum 37,800,000 tubercle bacilli per day, as shown by the investigations of Schrueder and Cotton, U.S. government experts.

The tubercular human patient can be taught to use various precautions that will reduce to a minimum the danger to health in his environment, but not so with the cow. Effective germicidal substances are too expensive, and their proper application to large masses of faeces daily is too difficult and troublesome for practical purposes.

The faeces of cattle are dropped everywhere in the surroundings of these animals, in the stable, field, barnyard, roadways. They are splashed on the bodies of cattle, and when cattle lie down, their bodies get coated with them, especially the parts near the udder. Faeces are thrown against the partitions of stalls and walls of stables, and are scattered about by their soiled tails on to the hands and clothing of the milkers. It is almost impossible to find the dairy, even where great precautions are taken, the milk from
which does not show traces of hair and fine particles of faecal matter. When we know how completely cattle feaces may be charged with tubercle bacilli, and how easily milk may be infected from this source, and contemplate this fact, keeping in mind the wide distribution that dairy products have, together with the results of recent investigations, we must conclude that the eradication of tuberculosis among cattle cannot be too vigorously urged or pursued.

The policy has been adopted by the provincial government of British Columbia, of eradicate tuberculosis by the district method. The provincial government are receiving the hearty co-operation of the federal authorities in this connexion, and it is to be hoped that the other provinces will take up this matter at no late date.

In order to get rid of these unsuspected, but dangerously tubercular, cattle,—and as a rule the animal does not show clinical symptoms unless the disease is far advanced,—we must resort to the use of tuberculin in the hands of a properly qualified man. Animals reacting should be removed from the herd, as well as those showing clinical symptoms. After years of observation, the tuberculin test has been shown to be a more nearly infallible means of diagnosis of this disease than any we have for diagnosis of other diseases in animal or man. Of the cows supplying milk to the city of Washington, 17 per cent. were found affected with tuberculosis. In New York State, 33.3 per cent. of all cattle reacted to the tuberculin test. And of the cows supplying milk to the city of Winnipeg, 70 per cent. were found to be tuberculous. Actinomycesis or lump jaw, as it is commonly called, which is generally seen in the maxilla of cattle, is also found in the udder. The discharge from an actinomyotic tumour generally contains pus-producing cocci, necessitating the prohibiting of the use of milk from such udders. Foot and mouth disease is transmissible to man through consumption of milk. Fortunately, this disease does not exist in this country. The only outbreak having been in imported cattle in quarantine, it was promptly stamped out by the government officer. The milk from animals suffering from anthrax, is highly dangerous. This disease is not frequent in this country now, owing to the strict measures pursued under the Animal Contagious Diseases Act by the federal Department of Agriculture. Cowpox renders milk unfit for food, as it may become contaminated from the pustules and ulcers on the teats and udders, and produce infection by the alimentary canal in young children.

A cow suffering from gastro-intestinal disorders produces an
inferior grade of milk, which may cause a similar condition in children. The presence of dairy cows affected with such septic conditions as puerperal sepsis, septic mammitis, diffuse phlegmon, suppurative wounds and extensive ulcerations, constitutes a grave danger to the milk supply, inasmuch as the milk may become infected with pus-producing organisms, among which the streptococci are capable of causing enteritis in man. The milk of all cows suffering from febrile conditions should be excluded from the market. Poisonous milk may be produced by cows having eaten poisonous plants, as the poisonous ivy, producing a nervous condition known to the veterinarians as "trembles." The milk of cows should not be used for at least five days subsequent to parturition, as the colostrum may produce diarrhœa, colic, and other digestive disturbances. Much more could be said concerning the conditions of milk when produced, but enough has been said to show the necessity of a system of rigid inspection of conditions at the source of supply.

Milk, instead of being immediately removed after milking and promptly cooled, is often left in the stable uncovered, thereby allowing contamination. The condition of the milk room is not always what it should be, the cans receiving careless treatment in the washing, dirt and sour milk being left in them. Washed with anything but boiling water, they are then placed face up in the open air during the day, allowing dust and dirt to settle in them, and when they receive the warm milk from the milk room, the natural result is an abnormally high bacterial count.

In conveying the milk to the city, and also transportation and delivery from retail wagons, it should be kept cool, at a temperature of 50° F., or under. The sanitary condition of the vendor's wagon is often much at fault, as are his clothing, hands, etc., and here he is often known to fill the empty bottles collected en route from bulk milk, this being done on the wagon. Can we imagine anything more disgusting or harmful than such a practice? I see this matter was taken up by the local Board of Health at the last meeting. Next we come to the shops where milk is sold, and here milk should be kept and sold in sealed bottles only, to prevent contamination, especially in the small house shops.

A few figures bearing on this subject might be useful here. In the city of Toronto, out of every 1,000 children born alive 160 die in the first year, or more than in the succeeding 40 years. In Ottawa the rate is 216 and in Montreal 270. In Ontario cities, out of every 1,000 children born alive, 16 more die than in New
York; 4 more than in Chicago; and 44 more than in London, Eng. In the United States a number equivalent to one-sixth of the birth rate die during the first year. Dr. Lafferty claims that 95 per cent. of children's deaths are due to the milk. Dr. Hastings attributes 90 per cent. to the same cause, and he further says that out of the 10,000 deaths of children in one year in Canada one-half are preventable.

The death rate in a number of American cities has been materially reduced since the enactment of a pure milk law.

As the result of repeated investigations, our ideal should be certified milk, and until that can be secured, pasteurization; and though by it we turn an aquarium into a cemetery, the disease-producing germs are killed by proper pasteurization. Any pasteurization will not do, this work done improperly is worse than not being done at all. If the inclination of the general public does not drive it to correct the evils to which it is exposed through the use of impure, infected and dirty milk, it should be borne in mind that common humanity imposes various sacred obligations, among which pure, wholesome milk for children ranks near to first place. We have no right to shirk this obligation, and would have no inclination to shirk or ignore it, if we took the time and trouble to investigate the number of deaths, especially among infants, directly due to contaminated milk. Most intelligent persons who read have some knowledge of the fact that numerous babies die from no other cause than the use of impure milk. Unfortunately, the frequency with which milk from tubercular cows causes tuberculosis is not so clearly apparent, because of the insidious, chronic character of the affection.

The Health Department was justified in ordering that every dog in Western Ontario be muzzled, because one child had died of rabies. Certificates are required before a doctor, druggist, or undertaker can practice, but any ignorant man can milk and send out this food which fills the coffins of the undertaker. It is the solemn duty of those having knowledge of these conditions to put forth their best efforts to protect the unsuspecting public, to awaken public sentiment, and whenever possible, to stimulate legislation.

I have hurried roughly over this vast question, trying to show the condition of milk when received by the consumer. The result of the use of such milk upon the public is better known to the medical practitioner than to the veterinarian, and considering this last phase of the question, I am of the opinion that the interests of the public would be materially advanced by the combined efforts of the medical officer and the veterinarian.
THE term “Liposis pancreatica” was suggested by Professor Adami as an appropriate name descriptive of the extensive fatty change found in the pancreatic glands of the cases briefly presented in this article. The three cases are worthy of note on account of the unusual findings in the pancreas of patients who suffered from diabetes and gangrene of the feet.

The existence of fat among the lobules of the pancreas is common in people who have passed the age of thirty-five or forty years. Fat spaces are frequently seen in microscopical sections of this gland, sometimes in large numbers, without any associated symptoms in any way assignable to the organ in question. In other cases, the occurrence of many fat globules along with some increase of the fibrous tissue produces very few, if any, symptoms, whilst in cases of diabetes coming to autopsy this condition is sometimes the only pathological abnormality found. The wide divergence of pathological findings observed in cases of diabetes is well-known to those who have had experience in the post-mortem room.

Another feature of interest in the cases herewith presented is the unimpaired microscopical appearance of the islands of Langerhans. It was formerly taught that changes in these structures were the principal factor in the causation of the disease, such changes consisting chiefly of a hyaline or fatty metamorphosis, to which the carbohydrate disturbances of diabetes were attributable. At present, however, there is much discussion about the real part played by the islands in this disease. It may be stated that many observers are of the opinion that they take very little, if any, part in the changes of carbohydrate metabolism, and that the prominent part hitherto assigned to them has been quite misplaced. My own experience has been that the islands of Langerhans in cases of diabetes very seldom show any definite abnormality. Dr. F. Homans, in a recent publication (1913) advances the opin-
ion, based on experimental work, that there is no positive evidence that the islets are of vital importance to carbohydrate metabolism.

Another point about which there is much diversity of opinion is whether the islands of Langerhans are fixed, stable bodies, or are being formed continually from pancreatic acini. It may be stated that the American schools, as exemplified by Osler's "Modern Medicine," incline to the view that they are fixed, stable bodies, whilst the English school, judging from Allbutt and Rolleston's "System of Medicine," believes them to be in a constant process of formation. A commonly accepted view, to which the writer is inclined, regards the islets as fixed as the glomeruli of the kidney. Their exact function, however, is not positively known.

Whilst attention in these cases was directed to the pancreatic findings, yet the changes found in the other organs are worthy of note. The occurrence of advanced arteriosclerosis in the splenic artery of all three cases is interesting.

**Case 1.** P. S., male, aged sixty-seven, entered the Royal Victoria Hospital September 25th, 1911, under the care of Dr. E. Archibald, with gangrene of the fourth and fifth toes of the right foot, and a small area on the dorsum of the same foot, also beginning gangrene on the second toe of the left foot. Three weeks before, the little toe of the right foot began to get dark in colour, then the next toe, and shortly after the skin of the dorsum of the foot. No pain. He had been drinking large quantities of water daily for some time; he voided frequently, and large amounts. He was very drowsy when he entered; the tongue was dry and coated. His arteries were atheromatous. His urine contained much sugar; there was no acetone or diacetic acid. A few days after admission his right leg was amputated at the knee joint; about one week later the flap began to slough, and the beginning gangrene of the other foot became pronounced. He died two weeks after his right leg was amputated.

**Principal Autopsy Findings:** Atrophy of pancreas; gangrene; unilobular cirrhosis of liver; extreme calcareous atheroma of blood vessels; acute toxic nephritis; body of good physique, very fat, prominent chest; length 160 cm. Right leg amputated at the knee. Second toe on left foot quite gangrenous, and the big toe commencing to become so. Lung: old apical pleurisy. Aorta markedly atheromatous. Abdomen: mesenteric glands were not enlarged; mesentery very fatty; deep inguinal glands were enlarged.

The liver weighed 1,675 grms., and was firm, with apparently
increased connective tissue, poor differentiation; blood vessels full; surface smooth, with irregular, macular, pale areas through it. The cut surface was firm, and showed a striking variegated appearance, owing to discrete, round, yellow lobules lying among the brown liver tissue; the consistence was increased. Sections showed cloudy swelling, marked fatty infiltration and bile pigmentation. The capsule was normal, and the interstitial tissue was not increased. The lobules were with difficulty outlined. Central vessels were of moderate size. The cells immediately about were degenerative-looking; their nuclei were poorly staining, and the cytoplasm contained much bile pigment; in the majority of the cells fat globules occurred, many of them quite large. The liver cells were swollen and markedly reticulated. In the intermediate and outer zones of the lobules, the cells were well defined, and stained better than those about the central vessels. Some of the nuclei were swollen and perfectly clear, with a well marked nuclear membrane; others were small, showed punctate chromatic substance, and contained a large nucleolus. Others were more deeply stained. The portal system was normal in appearance, no inflammatory celled infiltration being present.

The kidneys weighed 405 grms., and were surrounded by much fat; the capsule stripped with moderate ease. The surface was lobulated, cortex pale, glomeruli not visible; medulla pale; pelvis normal. Sections: There was no increase of interstitial tissue, nor swelling of the capsule. Many of the glomeruli had undergone a hyaline change. The epithelium of the tubules and the glomeruli was swollen, and in places desquamated; the nuclei of the cells were not shown in many; some of the tufts were divided into three and four designs. The blood vessels were distinctly congested throughout. Acute toxic engrafted on a chronic parenchymatous nephritis.

Spleen: Weight 290 grms., flabby, with rounded edges and smooth surface; organ pale; cut surface flat, trabeculae not conspicuous, colour pale red. There were no adhesions. Sections showed distinct thickening of the capsule and the trabeculae. The Malpighian bodies were with great difficulty defined; the cells present were chiefly lymphocytes, intermingled with endothelials, numerous eosinophiles, and a few phagocytes. The edges were invaded by red blood cells. The central vessels were small. The splenic pulp was markedly congested. The sinuses were dilated and filled with red blood cells.

The pancreas measured 20 × 4 cm., and was converted into
a mass of fat, with only here and there an indication of pancreatic tissue; it was difficult to distinguish it from mesenteric fat; but for the fact that it occupied the usual pancreatic situation, it would have been easily overlooked. On cutting into it there was found extensive calcareous degeneration of the arteries. Sections showed a few small, irregular patches of pancreatic tissue lying in an abundant fatty stroma. The fibrous stroma was to be seen, in a few instances, containing pancreatic ducts, which had preserved their lining and showed no inflammatory cell invasion about them. The glandular tissue was diminished greatly. The individual pancreatic cells showed some vacuolation, and were somewhat shrunken. The islands of Langerhans showed no pathological change. The cells were uniform in size and shape, stained deeply, and showed an absence of infiltration. Another point of interest in the sections was that in many places the fat spaces entirely occupied the area formerly occupied by pancreatic lobules, as if the entire lobule had turned into fatty tissue.

Case 2. R. W., female, aged fifty-four, admitted December 14th, 1912, to the service of Dr. Armstrong. Complaints and history: sore toe, passing large quantities of urine, loss of appetite and weight. She was treated for morphinism for one month seventeen years previously at the Royal Victoria Hospital; and one year later a complete hysterectomy for multiple fibroids was performed. In July, 1898, she was readmitted with typhoid, one month ill. In August, 1902, she was treated for gastric ulcer, three weeks ill. In 1910, she was again in the Royal Victoria Hospital with palpitation, headaches, edema of the extremities. Sugar was found in the urine, also albumen. She had lost eighty-five pounds in weight since she was in before. About 1904, she noticed she was passing a larger quantity of urine than usual. In 1908 her husband was accidentally killed, and from this she dates a loss of appetite and weight, and increased quantity of urine passed. Six weeks before entrance to hospital a small ulcer appeared on the inner side of the toe. It became larger and inflammation spread up the foot, and in spite of incisions and free drainage of pus, gangrene appeared nine days after she entered. Her urine showed specific gravity 1,032, acid, much sugar (4 per cent.), acetone and diacetic acid. On January 3rd, 1913, she died.

Post-Mortem Findings: Diabetes mellitus; gangrene of foot; fat necrosis around pancreas; atrophy of tail of pancreas; extreme atheroma of splenic artery; multiple foci of atheroma in pulmonary artery; obsolete tuberculosis at left apex; multiple submucous
ecchymoses of stomach; passive congestion of liver; hyaloserositis of spleen; cavitation of adrenals.

Body of good nutrition, right foot gangrenous. The main points of interest were the marked degree of atheroma throughout the arteries and even the main veins; and the small size of the pancreas with the presence of fat necrosis in its vicinity. The subcutaneous fat measured 3.5 cm. in thickness. The omentum was adherent to the abdominal wall. The aorta was markedly atheromatous. The liver showed no macroscopical abnormalities; section disclosed some fatty infiltration and congestion, with the sinuses containing many iron-pigment-bearing cells.

Pancreas: Weight 80 grms. The tail of the pancreas was very small, the tissue hard. Splenic artery markedly atheromatous; fat necrosis present here and there in the gastro-hepatic omentum. Sections showed a great increase in the amount of interlobular connective tissue, wide bundles separating the acini from each other. There was also a slight intralobular increase. There were also numerous large fat spaces throughout the section. The acini were small. The islands were not numerous, and no abnormality was observed in them.

Spleen: Arteries markedly atheromatous. Hyaloserositis was marked; the pulp was diffluent and pale, and the Malpighian bodies hardly noticeable. Trabeculae were not increased. Sections confirmed the macroscopical findings. The kidneys and adrenals showed cloudy swelling.

Case 3. A. L., female, aged eighty-two, admitted October 25th, 1912, under care of Dr. Garrow, complaining of gangrene of the foot. The gangrene had been gradually becoming worse for some weeks, and when she entered, it had spread half way up dorsum of foot. It was possible to feel pulsations in the femoral artery high up in the thigh, but none could be felt in the popliteal. Sugar and albumen were present in large quantities in the urine. The specific gravity was 1032. Three days after entrance to the ward she died in coma.

Principal Post-Mortem Findings: Diabetic gangrene of left foot; atrophy of pancreas; calcareous arteriosclerosis; dilated heart; diffuse emphysema of lungs; arteriosclerotic kidneys; cavitated adrenals; diffuent spleen; emaciation (but fatty omentum).

The heart weighed 375 grms., and was large and flabby. The edges of the mitral valve were thick and nodular; septal flap opaque; two or three nodules were fused together and converted into a large chalky mass containing laminated calcareous plates.
Coronary orifices calcified. Aorta showed marked arteriosclerosis with many ulcers but no nodules. The abdominal aorta was calcified all round. The trachea and bronchi were congested. Both lungs were emphysematous and oedematous; and weighed 850 grms.

Liver: Weight 1,375 grms., was of moderate size, very flabby; surface smooth and mottled with ochre yellow foci of fat. Cut surface friable, dark and full of blood. There was apparently much fatty change, and no increase in connective tissue. The organ was passively congested. The gall-bladder showed thickened walls converted into one calcareous plate. Sections of the liver showed passive congestion, and marked fatty degeneration, especially in the neighbourhood of the central veins. Pancreas: weight 80 grms.; it was soft and almost indistinguishable amidst the fatty tissue enclosing it. The splenic artery was very atheromatous. There was no fat necrosis. Sections showed marked change of the pancreatic tissue. In sections through the body of the pancreas a marked inter-and-intra-lobular fibrosis was present. Many of the acini were very small. The islands were numerous, of moderate size, well formed, and showed good preservation of their cells. The blood vessel walls were markedly thickened, both intima and media being involved. Fatty degeneration had occurred throughout the sections, in places involving entire lobules. Sections through other portions of the organ showed the same characteristics.

The spleen weighed 110 grms., it was very flabby and pale; on section the trabecule were inconspicuous, and the Malpighian bodies were not visible. Histologically it presented an angiomatous appearance with marked dilation of the lymph spaces, the lumina filled with colloid material, in which occasional clusters of red blood cells might be seen. The Malpighian bodies were not differentiated. The trabeculae had undergone a hyaline change. The blood vessels were prominent, and their walls were thick. Passive congestion and lymphangioma.

The kidneys showed necrosis of the epithelium, and chronic glomerular nephritis with some increase of interstitial tissue. A study of one hundred and eighty-three cases of diabetes led Weichselbaum to classify the changes in the islands of Langerhans into the following groups; (1) hydrops of the islands, followed by atrophy; accompanied by atrophy of the pancreatic acini to a varying extent. This form is seen frequently in youth. Just as new liver tissue is formed in cirrhosis, so new islands may arise in the
pancreatic tissue. (2) Chronic interstitial pancreatitis, leading to connective tissue overgrowth in the islands, with subsequent sclerosis and atrophy. This form is associated with arteriosclerosis of the pancreatic arteries or with excessive deposition of fat. The parenchyma atrophies to a considerable extent as well. This form runs a very chronic course, and is seen frequently in old age. (3) Hyaline degeneration of the islands. This form is rarely seen alone, being usually associated with lesions of Class 2, and is met with under similar conditions.

The cases which form the subject of this paper evidently went through different phases of degenerative changes, as far as the pancreas was concerned. Probably the first change was one of arteriosclerosis in the arteries of the organ. This may be considered primary on account of its moderate extent and its occurrence in each case. Following this was the connective tissue change, the remains of which were visible here and there throughout the organ. After invading large areas, it was replaced by extensive fatty deposition, until, in two cases, practically the entire organ had disappeared. It would be difficult to conjecture at what stage the glycosuria supervened, or the relation between the fat replacement and the pancreatic ferments.

It is proposed to publish a statistical report upon the frequency with which the various changes possible in pancreatic tissue have been met with in the autopsy series of the Royal Victoria Hospital. The writer desires to express his thanks to Professor Adami for suggestions received in the preparation of this short paper, and to Dr. O. C. Gruner, pathologist to the Royal Victoria Hospital, for permission to study the organs of the cases reported.

References:

Otie, "Diseases of the Pancreas."
Weichselbaum, as quoted by Kaufmann.

Four hundred and eighteen cases of measles occurred in Ottawa during March; three of these were fatal. There were thirty-two cases of diphtheria, sixteen of scarlet fever, eight of smallpox, and two of typhoid fever.
PRIMARY MALIGNANT NEOPLASM OF THE FALLOPIAN TUBE

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ALTHOUGH enlargements of the Fallopian tubes, due to various infective and mechanical agencies, are by no means infrequently encountered, true neoplastic tumour formation is a comparative rarity. Inasmuch, also, as carcinomata, which constitute the most common malignant blastomata of this organ, present, in a large percentage of cases, characteristic clinical evidence of their presence, and since the accompanying case exemplifies certain typical symptoms, the author believes it to be worthy of publication in this manner.

Both sarcomata and carcinomata, as well as a certain mixed tissue type of neoplasm, which is considered by many pathologists to be an endothelioma, are occasionally encountered as primary tumours of the Fallopian tubes. Of these, carcinomata, similar in type to the one described in this paper, are the more common. Doran (Journal of Obstetrics and Gynaecology of the British Empire, 1904, Vol. vi., p. 285) in 1904 collected sixty-two cases of carcinomata. In this paper he gives a complete bibliography and makes a very careful analysis of the predominant signs and symptoms of the condition. The most common type of carcinoma is distinctly papilliform in type. Occasionally such tumours protrude as a cauliflower-like mass from the abdominal ostium and may in such cases metastasize by implantation over the peritoneum. In the remaining smaller percentage of carcinomata, the histologic appearance is that of a simple medullary type of epithelial neoplasm. It is to the latter group that the author's case belongs.

Briefly stated the history of the case is as follows: The patient, Mrs. H., aged forty-six years, is the mother of five healthy children, the youngest being nine years old. She has had no miscarriages, and previous to the present illness had been free from any symptoms referable to disease of the pelvic organs. This last mentioned fact deserves special note, since it is the rule in cases of tubal carcinoma

Read before the Montreal Medico-Chirurgical Society, November, 1912.
for the patient to have had previous symptoms of salpingitis. About the middle of February, 1912, the patient commenced to feel less energetic than had been her custom, becoming easily tired. She was given a tonic but did not appear to improve. She gradually became more anæmic and less able to carry out her daily simple household tasks; she did not, however, find it necessary to remain in bed. In May her menstrual period, which had been constantly regular, every twenty-eight days, painless, and moderate in amount, was delayed seven days. The patient inserted a glycerine tampon in the vagina, and menstruation commenced at once and was more profuse than usual. This flow continued for four days.

About the first of June, 1912, the patient began to suffer from a profuse, watery, slightly purulent discharge of a somewhat heavy but by no means disagreeable odour. This discharge was consider-
ably more profuse at night, necessitating the use of two napkins during that time, and one during the day. She did not take to her bed although she did not feel strong enough to do much more than move from one room to another and out on to the verandah.

I first saw the patient on June 19th. At this date she appeared well nourished, but very anæmic (haemoglobin 60 per cent.) with dark circles beneath the eyes. Her pulse rate lying in bed varied between ninety and ninety-eight. She was running an afternoon fever of 99.4° to 100°. Abdominal examination at this time was negative, nor did she complain of any pain whatever. Pelvic examination showed in addition to a lacerated cervix and a uterus which was placed somewhat low in the pelvis—but not enlarged or soft—a small mass to the left of the uterus, apparently 5 \times 3 \times 3 cm. in size. This mass was firm, movable, and slightly tender. A leucocyte count, performed June 24th, showed a total count of 12,000, 73 per cent. being polymorphonuclear leucocytes.

From the history of the case and the findings at examination, a probable diagnosis of pyosalpinx, or possibly ectopic gestation, was made, and operation advised. As the patient’s menstrual period was about due, operation was delayed until July 8th, as it was not believed that the condition was of any great urgency. During the intervening period, the patient remained in bed. She also stated that she felt, at times, pain on the left side and in the back, symptoms of which she had never before complained.

**Operation:** Examination under ether revealed the fact that during the two weeks intervening since the last previous examination the mass had increased rapidly in size. The uterus was curetted, the scrapings removed being negative as regards patho-
logical changes. With the patient in the Trendelenberg position, the abdomen was opened through a left rectus incision. A moderate amount of somewhat turbid blood-stained fluid welled up into the incision. Upon examination, it was discovered that the omentum, several coils of small intestine and the sigmoid, were more or less closely adherent to an egg-shaped, greyish pink, glistening, moderately firm mass, which measured $12 \times 8 \times 7$ cm. in size and resembled in appearance a sarcoma of the ovary. The coils of the small intestine were separated without much difficulty and the omentum divided between ligatures. The sigmoid was so densely adherent that I was anxious to resect that portion of the intestine involved; the condition of the patient, however, precluded such a procedure, so that I adopted the more simple method of cutting through with a sharp scalpel the wall of the sigmoid down to the submucosa, thus leaving the musculature and superficial layers of the intestine attached to the tumour. The injured sigmoid was then "turned in" and reinforced by Czerny-Lembert sutures. As the uterus appeared to be normal and the patient's condition
none too good, the left cornu alone was excised and the tumour removed along with the left ovary and the greater part of the left broad ligament. The pelvis was carefully palpated and no signs of lymphatic or other metastases were noticeable. The right appendages were likewise apparently normal.

The patient stood the operation somewhat poorly, and about twenty minutes after return to the ward collapsed. She became a greyish white colour and pulseless, although the heart-beat, counted by means of the stethoscope, did not rise above 120. She remained in that condition for about four hours, during which time she received continuous saline per rectum, and small doses of strychnine and camphor. Upon the first and second days she suffered severely from distension, for which she received four doses of eserine, gr. 1-100, with good effect. Convalescence was naturally slow, but at the present time, three and a half months after operation, she is looking and feeling very well indeed; her anaemia has improved and she has put on weight. The last examination, one month ago, failed to reveal any evidence of return of the disease in the pelvis.*

**Description of Tumour:** The tumour consists of an oval, smooth, moderately firm mass, measuring $12 \times 8 \times 7$ cm. The surface, except in those areas which were adherent, is smooth and glistening, greyish pink in colour. The mass is situated in the Fallopian tube. Upon the uterine side there is a length of $1.5$ cm. of normal-looking Fallopian tube which enters and is lost in the substance of the tumour. This uterine extremity of the tumour is deep red in colour and presents upon the surface several small sub-serous cysts. Upon section, the more or less normal portion of the tube contains a small quantity of purulent material. The cut surface of the tumour is glistening and smooth, homogeneous in appearance, and of a pale pinkish grey colour. There is no evidence of necrosis at any part. The tumour tissue is friable, and suggests the presence, when torn by the finger, of a very cellular mass with a delicate fibrous stroma.

**Microscopic Examination:** The tumour is composed of spindle and polyhedral-shaped cells, taking the basic stain, arranged in irregular shaped, clean-cut masses, resembling in many respects the so-called rodent ulcer of the face. The tumour cell masses are surrounded by a scant, loose, connective-tissue stroma in which are thin-walled blood vessels. The tumour cells show frequent

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*Patient's condition has continued to improve, and seven months after operation she states that she feels better than she has done for years.
mitoses. In sections cut from that portion proximal to the uterus, the morphology of the tube is readily made out. The lumen contains an exudate composed of polymorphonuclear and plasma cells and débris. Here and there throughout the wall are masses of tumour cells which in places can be seen to penetrate the mucosa. Beneath the serosa are seen numerous nodular collections of lymphoid and plasma cells. Sections cut from the uterine extremity are devoid of tumour cells.

Discussion: In many respects this tumour is typical of its kind. It is a carcinoma of the medullary type, arising primarily in the Fallopian tube. Its growth was extremely rapid and accompanied by marked anaemia and loss of vigour, but without the cachexia that is noted in carcinoma cases in which the tumour contains marked areas of necrosis. According to Doran’s analysis, such tumours occur almost invariably about the time of menopause, either before or after. In the sixty-two cases collected by him, only four occurred in individuals under forty years of age. The very profuse, yellow, watery discharge which was such a marked symptom in our case is very characteristic of Fallopian tube tumours of this nature, and is absent only when the uterine end of the tube is obliterated by coincident inflammatory changes.

The great majority of cases give a distinct history of inflammatory disease of the Fallopian tube, it being believed by many that there is a direct relationship between the inflammatory process and the papilliform overgrowth of the mucosa, analogous to that which occurs in coccidial disease in the rabbit and in certain cases of chronic inflammation—bilharzia, etc.—in the large bowel and bladder. In the case reported in this paper, there is no evidence, direct or indirect, proving the presence of such an infectious process antedating the tumour growth, although the presence of pus in the lumen of the tube and the chronic inflammatory changes in the wall indicate that such may have been present.

This type of tumour is interesting inasmuch as, although it is a very rapidly growing tumour and is obviously a carcinoma, there is no necrosis of the cell masses such as occurs in carcinomata of other organs having a like morphology. As a result of the rapid growth and absence of necrosis, the symptoms and constitutional signs are those rather of sarcoma than of the typical cachexia of carcinoma.
THE ANNUAL MEETING

THE medical profession in London are making every effort to make the next annual meeting of the Canadian Medical Association an unqualified success. The meeting will be held on the 24th, 25th, 26th, and 27th of June. Already arrangements are well advanced. The first two days will be devoted to sections in medicine, surgery, gynaecology and obstetrics, pathology, public health, eye, ear, nose and throat, and x-rays. On the morning of the third day, Dr. McPhedran, of Toronto, will open a discussion on diseases of the stomach; and Dr. Stockton, of Buffalo; Dr. Martin, of Montreal; Dr. Aaron, of Detroit; H. J. Patterson, F.R.C.S., and others, will take part. On the afternoon of the same day a symposium on the thyroid gland will occupy the attention of the association. Dr. Ochsner, of Chicago, will open the discussion on the surgical aspects of disease of the thyroid. On Friday morning, Dr. Billings, of Chicago, will conduct a medical clinic before the association. In the afternoon Dr. J. B. Murphy, of Chicago, will give a lantern demonstration on surgical diseases of the bones and joints. Dr. Emil Beck, of Chicago, will give a lantern demonstration entitled, "Eight years' experience with bismuth paste in the treatment of sinuses." Dr. Gallie and Dr. Robinson, of Toronto, will contribute a lantern demonstration of experiments in bone transplantation. The presidential address will fall to Dr. H. A. McCallum, of London, the president-elect; the address in medicine will be given by Dr. Llewellys Barker, of Johns Hopkins, and the address in gynaecology by Dr. Cullen, of Baltimore. A definite announcement of the programme will be made in the next issue.
Arrangements have been made with the transportation companies for reduced fares, on the convention certificate plan, from all points in Canada. Physicians attending the meeting—and this applies equally to their wives and other members of their families accompanying them—will have single fare for the return journey, provided there is an attendance of three hundred from all over Canada, paying a fare of more than fifty cents. Each member when starting on the journey must obtain from the ticket agent a standard certificate, properly filled in and signed by him. This certificate will be endorsed at London, first, by the secretary of the association, and secondly, by a special agent who will be in attendance at the meeting on June 25th and 26th for this purpose. He will collect twenty-five cents in respect of each certificate, which will then entitle the holder to a return ticket to his starting-point without further charge. From Fort William, Ontario, and all points east, tickets for the going journey must be purchased between the dates June 20th and 26th, both inclusive, and properly validated certificates will be honoured for tickets for the return journey up to and including July 1st. From points west of Fort William in Ontario, Manitoba, Saskatchewan, and Alberta, these dates will be June 18th to 22nd, and July 12th, respectively.

From points in British Columbia the Canadian Pacific Railway has granted the association the convention certificate rates. The dates on which tickets may be purchased have not yet been decided, but will probably be June 16th to 20th. For those to whom the time-limits or other restrictions may be inconvenient, the summer tourist rates, approximately a fare and a third, will be available over both the Canadian and American transcontinental lines.

All the members, except those who may desire to prolong their journey beyond the prescribed limits, are urged to buy their tickets on this convention certificate plan, being careful to take a receipt from the ticket agent for the fare paid. Those who perhaps have only a short distance to go, and who
may think it unnecessary, in view of the small expense, to take their tickets on this plan, will be asked at the meeting to give the return coupons of their tickets to the secretary, for submission to the special agent, in order that they may help to bring up the total of the convention certificates to the required three hundred.

London is one of the most attractive cities in the Dominion, especially in the summer months, and this fact, coupled with the outstanding reputation of a large number of the men who are to participate in the programme, should ensure a record attendance. The Forest City promises its guests a generous hospitality on the occasion of this meeting.

THE POSITION OF THE LABORATORY WORKER

The development of the laboratory worker as a new order of medical man, one who does not come into contact with patients, or with their fees, if it does not demand a new chapter in the code of medical ethics, necessitates at the least some revision of that code. The code lays down that the member of our profession who has made a discovery fraught, as he believes, with benefit to his fellows, should freely communicate that discovery to his professional brethren with the intent that all should be able to utilize it for the good of their patients and of humanity at large. As regards the laboratory worker and his interpretation of this section, two questions may be asked: first, is it the intention of the code that the medical discoverer should reap no pecuniary benefit whatsoever from his discovery? and, second, is it intended that those outside the profession, the wholesale drug manufacturers and others, are free to reap the profits accruing from the manufacture and exploitation of a medical discovery, whereas the discoverer or inventor himself is to be satisfied with the naked virtue of having benefited his kind?
These, it will be seen, are very delicate questions, and require extreme caution in their answer. With the loftiest ethical standard, your practising physician or surgeon who makes an advance in treatment is in a position to reap a pecuniary advantage from the same; it becomes widely known that he is the originator of the new method and, even though he publishes the details broadcast, patients prefer to be treated at first hand: are willing to pay enhanced fees for such treatment: and, as a consequence, his position, his practice, and his income are materially improved. Your laboratory worker has no such opportunities. No less than the practising physician, he is apt to have a family, actual or prospective, whose future is to him a matter of some concern. If he is to receive no benefit from his discovery beyond the five hundred to one thousand dollar increase in his stipend, which a grateful university may grant him at the expiration of five or ten years, and if he is to respect the code of medical ethics as at present laid down, his only alternative is to follow the example of Sir Almroth Wright, give up the life of the laboratory to which he is become best fitted by long years of research, give up the prospects of further research work, and, from being a man of science, he must consent to be an inhabitant of some Harley Street, and to charge fees for carrying out the technique which he has elaborated, such as would be charged by a first-class surgeon. This is wholly ethical, but it must be admitted is, if not soul-destroying, not exactly self-respecting.

Is it proper and fitting also that purely commercial concerns, however admirable their methods of manufacture, should acquire large fortunes from the discoveries of the laboratory man, should for example, make their thousands out of an antitoxin horse, and that he should receive not a cent of recompense? It is all very well to say that "Verily they have their reward"; but how about Johnnie's schooling and Dorothy's coming-out dress, and, most pressing of all, madame's social aspirations?
But if we acknowledge that the medical discoverer deserves and should be afforded a recompense in proportion to the magnitude of his service towards his kind, we are far from being prepared to say that he should be permitted to patent his discovery, or to peddle it among rival commercial houses, selecting as his agent the firm which offers him the highest royalty: that would be utterly repugnant to all self-respecting medical men. The only satisfactory solution that we can see is that immunological and other discoveries of like order be given over to the State, with the understanding that the State undertake to control standardization and distribution of them at a reasonable profit; that the State be responsible for disposing of the right of manufacture to other States, it being left to a healthy public opinion to instruct the Government as to the recompense to be offered the original discoverer by a grateful people. The State, that is, should take out the necessary patents, and if unwilling itself through its scientific departments to undertake the manufacture of a particular preparation, it should have the power to dispose of the right to manufacture to responsible commercial houses for a royalty and under such conditions as to permit its experts to inspect and supervise the course of preparation.

THE BRITISH COLUMBIA HOSPITAL ACT

At the last session of the British Columbia legislature recently ended, important amendments were made and passed in connexion with the Hospital Act. The new piece of legislation is known as “The Hospital Act Amendment Act” and was introduced by the provincial secretary, Dr. H. Esson Young. The old Hospital Act had been found inadequate to meet the many varied requirements brought about by the rapid development of hospital work in British Columbia, and the new Act is largely the result of the representations and recommendations made to the provincial
secretary by the governing authorities of the Vancouver General Hospital and the Council of the College of Physicians and Surgeons of British Columbia, although important additions, notably that dealing with "facilities for university medical students," were introduced by Dr. Young himself.

Section 7 of the new Act deals with the liability of a municipality for the payment of hospital fees on indigent cases arising in the municipality but treated in hospitals outside of the municipality. The city of Vancouver, surrounded as it is by three or four thickly settled municipalities, none of whom possess a public hospital, has in the past treated in its general hospital hundreds of indigent cases arising in these outside districts, for which no charge could be collected by the hospital.

The Vancouver General Hospital has a fairly large annual deficit, but what growing hospital has not? Yet its directors believed a considerable proportion of the yearly shortage could be eliminated if the cost of maintenance of indigent patients coming from outside the city were paid for by the municipality from whence they came. Hence the interest in Section 7, not only of the Vancouver General Hospital, but all the other provincial hospitals.

The Section reads as follows:

"1. The corporation of the municipality in which an indigent person who has resided for at least thirty days in said municipality and is admitted to a hospital receiving aid under this Act is resident at the time of his admission shall be liable to pay to the governing body of the hospital the charges for his treatment.

"2. A municipal corporation may agree with the trustees or other governing body of the hospital to pay a fixed annual grant in lieu of its liability for the maintenance of any patient admitted to such hospital from the municipality.

"3. Where there is no such agreement, and any person is admitted as a patient to any hospital receiving aid under this Act, the superintendent of such hospital shall by registered
post notify the clerk of the municipality of which such patient represents himself as being a resident that he has been admitted to the hospital, giving such particulars as may be ascertainable to enable the clerk to identify the patient.

"4. No hospital shall charge against a municipal corporation for the maintenance of any patient coming under the conditions of subsection (1) of the section, a higher rate than one dollar per day.

"5. Upon payment by a municipal corporation of the charges of a hospital for the treatment of a patient, such patient or his executors or administrators shall be liable for the amount so paid, as for a debt due to such municipal corporation."

Part two of the new Act deals with private hospitals. The purpose of the government in introducing this amendment was to meet the demands of both the general public and the medical profession for a proper and efficient supervision of such private hospitals. Various abuses having crept into the conduct and management of some of these private institutions, it was deemed advisable by the government to make them all amenable to the regulations set forth under this part of the Act. The work of inspection will be carried out by an inspector, a medical man appointed by the government.

The new Act provides that all private hospitals must be licensed. The application for license must be accompanied by a detailed statement and description—prescribed in the Act—of the building and its equipment. A license is not granted to any person whose character and fitness is not proven to the satisfaction of the provincial secretary. The Act defines the terms, House; Maternity Hospital; Medical, Surgical and Maternity Hospital; Private Hospital; Patient.

Clause 17 deals with revocation of license. Under this head the government has power to revoke or cancel a license for just cause. The decision of the provincial secretary is final and conclusive and shall not be questioned in any
court or in any proceeding. Section 19 provides that a hospital must always be in charge of a superintendent who shall be either a legally qualified medical man or a graduate trained nurse. Section 20 deals with the register of patients. A complete and detailed report on each case must be kept. Section 22 deals with overcrowding of patients in hospitals.

Penalties, in the form of fines up to two hundred dollars, are prescribed in cases of infraction of the Act and are recoverable under the "Summary Convictions Act." The "burden of proof" in any prosecution for an offence under this Act shall be upon the person charged.

Dr. Young is to be congratulated for this practical and efficient piece of legislation, while the profession is to be congratulated that one of its members holds the responsible position of provincial secretary and minister of education to whose efforts are due, in addition to the Hospital Act, the British Columbia Medical Act and the British Columbia University Act, for all of which the general public owes a debt of gratitude to Dr. Young.

MEDICAL POSTGRADUATE COURSE

We have received information concerning the postgraduate course which McGill intends to give this summer; and inasmuch as the plan adopted differs in principle from that of previous years, we think it well to call attention to it in this way. Hitherto the plan of the course, speaking generally, has been that of providing instruction in all the ordinary branches of medicine, in return for a lump sum for the whole course. The curriculum was in all essential respects the same as that provided for fifth year students, and the whole day was filled up with various clinics, lectures, and demonstrations, while the course lasted for six weeks. This plan gave an excellent opportunity to the postgraduate whose chief aim was to review his general work, but it left
out of account those who desired to improve themselves in special departments. Experience has shown that a general course of this nature is not entirely successful, either in attracting men to come, or in holding those who do come to the end of the six weeks' course.

This year the postgraduate teachers have decided, first of all, to shorten the course to four weeks, and then to adopt the system of elective courses, somewhat after the fashion that prevails in the German universities, and also in Harvard and Johns Hopkins. By this plan entire freedom is given to the teachers to offer the course which they think will prove attractive to the postgraduate, and, on the other hand, to the postgraduate to take the course which appeals to him. To judge from the outline of the courses already offered, it appears that the main endeavour of the teachers will tend towards providing a somewhat fuller course in each subject than in any previous year. Thus, the postgraduate who desires to obtain a more thorough teaching in surgery than is usually offered in the ordinary postgraduate school, will find that he can devote from three to four hours a day to this subject alone; likewise in medicine and the specialties. It is expected, also, that the plan of attaching a separate fee to each separate course will give the postgraduate an acceptable choice in the subjects which he may desire to take, and also guarantee to him the best efforts of the teacher. It is understood that both the Royal Victoria and the General Hospital will combine, each taking two weeks of the four weeks' course, thus guaranteeing to the postgraduate the clinical advantages of these two great hospitals, containing as they do, nearly five hundred public beds.

The third International Congress of Neurology and Psychiatry will be held at Ghent from August 20th to 26th. The secretary is Dr. F. D'Hollander, 110 Boulevard Dolez, Mons, from whom information concerning the congress may be obtained.
Those desiring to attend the Conference on the Prevention of Infant Mortality, which is to be held in the Caxton Hall, Westminster, London, on August 4th and 5th, next, may obtain information from Dr. Henry L. Coit, chairman of the American committee, 277 Mount Prospect Avenue, Newark, New Jersey, or from the secretary, Dr. Philip Van Ingen, 125 East Seventy-first Street, New York.

The fourth International Congress on School Hygiene will be held at Buffalo, New York, from August 25th to 30th, inclusive. The meetings will be held under the patronage of Mr. Woodrow Wilson, President of the United States, and under the presidency of Dr. Charles W. Eliot, president emeritus of Harvard University. The Congress will be the first of its kind to be held in America and no efforts will be spared to make it worthy of the occasion. A comprehensive programme is being arranged to include every aspect of school hygiene, in addition to which there will be scientific and commercial exhibits. Attractive plans have been made also for the entertainment of those who attend the Congress, and these include excursions to Niagara Falls. Membership may be secured on the payment of a five-dollar fee. Applications should be sent to the secretary, Dr. Thomas A. Storey, College of the city of New York, New York.

The recent outbreak of smallpox at Niagara Falls has led to a singular exposure of civic discord. The facts are astonishing and somewhat amusing. Several cases of the disease appeared in the town; and they were promptly and very properly isolated. The isolation, however, was one in name only, for certain "isolated" persons were seen walking about the streets and conversing with their friends, while others in the hospital were visited by their friends. When the board of health asked the city council to issue an order for compulsory vaccination, it was requested to resign, where-
upon three of the five members availed themselves of this opportunity of lessening their responsibilities. A new medical officer of health, Dr. H. Logan, was appointed immediately, and, in obedience to a command from the provincial board of health, the much contested order for compulsory vaccination was given. From this time, some order seems to have reigned amid the chaos of conflicting opinion, and the usual quarantine measures have been enforced. The result is that the epidemic is practically over and few new cases have occurred.

The medical profession in Germany is so over crowded that the Prussian Medical Chambers have been requested by the Chamber of Breslau to warn students not to enter the profession. From 1885 to 1910 the population of Germany increased by 34 per cent., while the number of medical men increased by 106 per cent. The workmen’s insurance laws make it compulsory for a large percentage of the population to become members of sick clubs, whereby they receive medical attention in case of illness. This, with the increasing number of hospitals, naturally has resulted in a diminishing number of private patients.

In Bulletin 246 of the Laboratory of the Inland Revenue Department, Mr. McGill, the chief analyst, gives a report on one hundred and forty samples of canned tomatoes purchased throughout the Dominion in September and October of last year. The cans examined were of three sizes,—large medium and small. Twenty ounces of solids was taken as a reasonable content for a thirty-seven ounce tin; and on this basis, it was found that 47 per cent. of the medium cans, and 60 per cent. of the small cans were below the suggested standard. Mr. McGill is of the opinion that a standard should be legalized under the provisions of the Meat and Canned Foods Act.
THE DIAGNOSIS OF SMALLPOX

TO THE EDITOR OF THE CANADIAN MEDICAL ASSOCIATION JOURNAL.

Sir,—In the March issue of the Journal, a communication appears from Dr. H. H. McNally, of Frederiction, on which I desire to make some comments.

In reading this communication it is difficult to understand what Dr. McNally's purpose is. His whole statement appears to be a series of theories advanced by himself in a half-hearted, hesitating way, interspersed with a bewildering variety of queries and questions. His reference to the health officer of New Brunswick quarantining cases as smallpox which had been regarded as chicken-pox by men of much experience in epidemics where the death-rate has been high, simply calls attention to the fact, which experienced public health officials throughout Canada and the United States will corroborate, that it is a difficult matter to convince an old practitioner who has gained his experience from epidemics of the virulent type, that the milder epidemics of late years are in reality the same disease in a highly modified form.

In his further reference to the mild epidemic in central New Brunswick a few years ago of "so-called" smallpox, he calls attention to the fact that vaccination was successful in several cases which had had this disease. In this connexion I would ask Dr. McNally if he can guarantee that chicken-pox was not also existent in the community at the same time. I have frequently noted the fact that the two diseases co-exist at the same time in the community, and that frequently one is mistaken for the other. In the paragraph following, which I quote in full, I think Dr. McNally has given a very accurate description of cases of chicken-pox. The paragraph is as follows:

"In the many cases in the interior epidemic of which reference is made here, there was not one case, of the great number which I saw, in which the vesicles did not appear in crops, extending over many days, and in some cases they were covered from head to foot with vesicles and scabs at the same time, and yet not one vesicle was found to coalesce with another, and even in cases which were hideous to look at, in adults who had never been vaccinated, there was no secondary fever."
In his references to my article which appeared in the December issue, Dr. McNally clearly shows that he did not read this article carefully, or that he intentionally misrepresents me. He states, not seeing any remarks on the death-rate, he has concluded all of my cases recovered irrespective of vaccination. My statement made was surely sufficiently clear on this point; i.e. "Only one of the series related showed very serious symptoms. This man had a profuse eruption on the tongue, roof of mouth, and pharynx, and threatened to die from suffocation." The inference surely is that he did not die, and that therefore the death-rate was nil. In quoting me regarding the infectiousness of the disease, he fails to quote the sentence immediately preceding, without which the quotation might be misunderstood. This sentence is: "The source of infection in the great majority of these cases is known and indicates beyond a doubt that the infection in smallpox, just as in the other exanthemata, is chiefly derived from personal contact with the disease itself, and not communicated by carriers or from infected inanimate objects or things." That the disease may be communicated by fomites I believe quite certain, but personal contact with the disease itself will, I think, be found responsible for the majority of cases in all epidemics, just as was the case in the series of cases I described.

Dr. McNally cites a case of a chicken-pox patient being placed in a smallpox hospital where he contracted smallpox and died, and adds: "yet Dr. Whitelaw tells us it is not a serious thing to mistake grippe or chicken-pox for smallpox." Whether he has fairly quoted me I leave it to your readers to judge. My statement was as follows:

"From the standpoint of a medical officer of health it is not at all a serious matter to mistake chicken-pox for smallpox, as compared with the dire results which may follow to the community at large, from failing to diagnose a genuine case of smallpox and having it removed to a hospital as a case of grippe or typhoid. From the standpoint of the general practitioner, it is perhaps different, however, since he feels his first duty is towards his patient, rather than towards the public."

My remarks were, as will be seen, simply a comparative statement of two possibilities. In the one case, only the patient himself is affected adversely, in the other, a large number of people, if not the whole community. It was certainly a very serious mistake
for the chicken-pox patient referred to by Dr. McNally. Had he been vaccinated on admission, however, as recommended in doubtful cases, he probably would not have contracted smallpox.

In conclusion, I desire to take exception to Dr. McNally's suggestion contained in the question: "What has so changed the smallpox of Canada to such a mild non-contagious disease within the few years which have passed since the fearful Montreal epidemic?" Does Dr. McNally really mean to suggest that the mild type of smallpox now existent is non-contagious? My experience is, that it is now, as it always has been, one of the most highly contagious infections, even when mild in character. Will Dr. McNally kindly tell us where and when the mortality of smallpox epidemics often reached seventy-five per cent.?

T. H. Whitelaw, M.O.H.

Edmonton, Alberta, March 26th, 1913.

ONTARIO HEALTH OFFICERS' ASSOCIATION

The following is the provisional programme of papers which will be read at the Annual Conference of Medical Officers of Health for Ontario, which will be held at the Parliament Buildings, Toronto, on Thursday and Friday, May 29th and 30th. "The duties of the modern medical officers of health" by Dr. Charles J. Hastings, Toronto, and Dr. George A. Dickinson, Port Hope. The Exanthemata—papers by Dr. James Roberts, Hamilton, and Dr. M. B. Whyte, Toronto; "Diagnosis of smallpox," by Dr. R. W. Bell, Toronto. Tuberculosis—"Sputum examination in Ontario," by Dr. C. D. Parfitt, Gravenhurst; papers will also be read by Dr. Duncan Graham, Toronto, and by Miss Eunice Dyke, Toronto. The Milk Question—"Essentials for the production of a safe milk supply," by Dr. G. C. Nasmith, Toronto; "Importance of milk as a food," by Dr. A. W. Macpherson, Peterborough. Disposal of waste and garbage—In cities, by Dr. R. C. Harris, Toronto; In towns, by Dr. W. R. Hall, Chatham. Disposal of domestic sewage—In suburban and rural areas, by Dr. Robert E. Wodehouse, Fort William. "The scope of work in home hygiene," by Dr. Charles A. Hodgetts, Ottawa. Paper by Dr. C. N. Laurie, Port Arthur. Paper by Dr. John A. Amyot, Toronto. Presidential address, by Dr. Adam H. Wright, Toronto.

There are about eight hundred and fifty medical officers of health in Ontario and it is expected that the meeting will be well attended. With this in view, arrangements are being made for reduced railway fares.
Book Reviews


This book bears the affectionate dedication, "To Beatrice, my wife." This practice of writers on medical subjects of bestowing public marks of affection upon their womenkind might well be abandoned. It is with an author's achievements in science, not in domesticity, that a reader is especially concerned. When Dr. Allen first began the study of bacterial diseases of respiration, and vaccines in their treatment, ten years ago, the one thing that struck him beyond all others, was the utter inadequacy of the information obtainable from works in the English language, and, indeed, in any tongue; and he thinks that the omission has not yet been repaired in any single book, or collection of books, to which he has had access; accordingly, it occurred to him that a brief but systematic description would have a certain value and prove of interest to many. Even "granting the truth of this statement" it is still open to question if this remarkable deficiency has now been remedied. Most of the matter contained in the book has already appeared as a series of articles in the Journal of Vaccine Therapy, but it has been revised and fresh matter has been included; the most important additions being in the sections devoted to pulmonary tuberculosis. Dr. Allen is a very high authority, and physicians who wish to be well informed will be glad to have the record of his observation and judgement.


This is one of the most admirable monographs which has come under the notice of the present writer. The author is a master of the art of writing as well as of surgery. The historical account of skin grafting is a complete summary of the method as it grew from ancient to modern times. To the surgeon the book will be
invaluable, and any physician will find in it matter for entertainment and profit. The monograph is not made: it is written.


Few persons are aware of the extent to which chloride of lime is used in sanitation and industry, and this book tells all about it. It is of especial importance in Canada, since there are few cities on the St. Lawrence and Ottawa which do not add chloride of lime to the drinking water. The book is important in other ways also, as it deals with many problems in sanitation. The references to the literature and summary of papers is admirable, even Montreal is not neglected. The date given for Scheele's birth is, of course, a misprint. It should be 1742.

**The Prescriber, Volume VI., January to December, 1912.**

One is sure of a pleasant evening over this book. It is really a bound volume of a publication which appears monthly. It contains all that is new in medicine for the year, and is illuminated with much judicious comment. Nothing could be better than the index to current literature. In addition there is every month a page, "By the way," in which one gets a taste of that humour which has its habitat in Edinburgh.


Within the past few years the diseases of the blood and of the blood-forming organs have been a matter of especial concern to clinicians and workers in the laboratory. A concerted effort has been made to discover the pathology of the various conditions, the origin of the various elements in the blood, and their relationship, the one to the other. Monographs and books without number have been published, and the literature has grown to a dimension which few minds can compass. Dr. Gulland and Dr. Goodall have written a fresh book upon the subject; they have been content to
leave at one side for the moment the views of other workers, and have relied for the most part upon their own clinical and pathological experience. The impression made upon the mind of one who reads this book is that the authors have thoroughly explored the field which they have set themselves to describe. Every sentence seems born of experience, and every procedure is described in the light of the difficulties which all accurate observers encounter. The writers are not only workers in a laboratory, they are physicians as well; and their experiments are illuminated by knowledge acquired at the bedside. The book is beautifully written, the material well arranged, nothing omitted, the letter-press and binding all that could be desired. All is done with authority, and every practising physician will be the better for owning a copy.


For the fourth time the present reviewer is privileged to comment upon Professor J. Clifton Edgar's "Practice of Obstetrics," this book being the fourth edition. In less than three years eleven thousand copies of the work were demanded by the profession, and up to the present time twenty-two thousand copies have been printed. Before Dr. Edgar set his hand to the writing of the first edition, he had already had fifteen years' experience in maternity hospitals, and in bedside and didactic teaching to his credit. His original aim was to present the subject from a practical and clinical standpoint, and he has still adhered to that intention. In the present edition much new material has been added, notably blood-pressure observations, anaesthesia, vaccine and serum treatment of sepsis, haemorrhage of the newly born, pelvimetry, premature rupture of the membranes, pubiotomy, extra-peritoneal, Caesarean section, and the use of the Momburg belt as a device against haemorrhage. Several of the illustrations have been re-drawn, and fifty-one new ones have been added to the text. Whilst anatomy has not been made a prominent feature of the book, the subjects of pathology and embryology have been adequately dealt with. One who reads the prefaces to the successive editions will find an interesting record of the author's experience, as well as an indication of the progress which has been made in this subject,
which is, perhaps, after all, the most important of those with which the practitioner has to deal. During these years the work has grown in size, so that it now occupies considerably over one thousand large pages, and the illustrations have increased in number to more than thirteen hundred. The book is published in that excellent style which we are accustomed to expect from Messrs. Blakiston’s, and further comment is unnecessary upon a work which has met with such enormous success at the hands of the profession.


It is quite clear that existing works do not exhaust the subject of obstetrics, since Messrs. Saunders have thought well to put forth this new book. It is a noble volume of ten hundred and sixty pages, each one ten and a half by seven inches in dimension, containing fifty-four lines with about seven hundred words, or about three quarters of a million words in all, that is, as much as half a dozen ordinary text-books. There are nearly a thousand illustrations, of which one hundred and fifty are in colour. The letter-press and paper are of the best, and the text is beautifully displayed. It is, in short, one of the most impressive books on obstetrics which are now in existence.

This treatise, as the author informs us in the preface, is the out-growth of a volume which has been used for fourteen years as a text-book in the North-western University Medical School. For the student, brevity and system are essential, but the practitioner needs a wealth of detail and of illustration, and certainly this is offered to him in the present volume. The descriptions of operations are omitted from the text, and are placed as explanatory legends under the illustrations depicting the successive steps of the procedure, so that the reader may study the pictures serially. The illustrations, for the most part, are original, and were drawn under the supervision of the author by James Kelly Parker, Grace Maidon, and Hermon Becker. The work of these artists has extended over a period of eight years. The material for the illustrations was drawn from the Chicago Lying-In Hospital, and the
microscopic and wet preparations were furnished by Professor Zeit, and Professor Wells, both of them colleagues of the author.

By every test which we have been able to apply, this work, which may well be described as a monumental one, proves itself to be a complete and accurate exponent of the best modern practice of the science and art of obstetrics.


This is a workmanlike book, good for the senior student and good for the practitioner. It describes the best practice of the Edinburgh School, and there is none better. The writing is done with restraint, and there is throughout a close adherence to the subject, for which students and practitioners will be grateful. The work is not overburdened with illustrations; but the coloured drawings, of which there are forty-four drawn by Mr. Gamley under Dr. Porter's supervision, are of beauty and use. Pictures of instruments are excluded, since, as the author remarks with nice irony, "an instrument catalogue can generally be consulted."


Quite apart from all considerations of place, this book is of first rate importance. It is a masterly monograph on a subject with which surgeons and patients are much concerned. Up to ten years ago there was practically no treatment for sufferers from the results of enlarged prostate, and they were obliged to endure as well as they could the miseries of "catheter life." Surgical procedures of various modes and by various routes were undertaken. The obstruction was divided; it was excavated by knife or cautery; its surface was burned; but the result was inevitably the same. The obstruction returned or the patient died of sepsis. In 1901, Freyer, of London, and Proust, of Paris, almost simultaneously devised operations—the one by the supra-pubic, the other by the perineal route—for the total enucleation of the gland. Dr. Macdonald describes all this in an introductory chapter, and he writes with a precision and lucidity which is worthy of high praise.
He does not suffer by comparison with any writer on surgical subjects with whom the present reviewer is acquainted. In these seven chapters with five plates every aspect of the case—anatomical, operative, and clinical—is dealt with; and the book gives the impression of being born out of the author's experience. It is entirely creditable to Canadian surgery, but the author has been badly served by the printer. It is nothing short of a disgrace that so excellent a book should have been so wretchedly printed on such cheap and pretentious paper. It is easy to understand why nearly all Canadian writers send their work abroad to be published.


For the past twenty years the name of Dr. Rolleston has been closely identified with the study of diseases of the liver, gall-bladder, and bile ducts. Indeed it was due largely to his efforts, that diseases of these organs have obtained so generous a recognition, for he has worked unremittingly upon the subject, and has obtained an enormous experience. He is also an accomplished writer, and in his various activities has touched medicine at every point, not only as a practitioner, but as an administrator. In the year 1904, the first edition of this work was issued. It received generous praise, and has been accepted as a standard ever since. In the present case, the work has been revised and much new matter has been added. Alterations have been made, and the text has been condensed when that procedure was found desirable. In the main, however, the book follows the original plan. The anatomy and physiology of the organs concerned has been quite properly left to treatises on those subjects. In the description of each disease full reference is made to the underlying morbid changes, since, as the author declares, without the knowledge of these it is impossible to make a rational diagnosis, to treat the clinical manifestations, or to give a reliable prognosis. The present work will bring no sense of strangeness to those who are familiar with the first edition. To those who are unfamiliar with Dr. Rolleston's work—and they must be few—this book will come as a revelation of the best that is known upon the subject with which it deals. The book is published by the Macmillan Company of Canada, and is admirably printed by the Clarks of Edinburgh.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


The addition to the Berlin-Waterloo Hospital was formally opened on Saturday, April 5th. The hospital was first opened in 1893, and since then, of course, the need for accommodation has increased. During the month of February, forty-five patients were admitted and thirty-nine were discharged. The number of hospital days was seven hundred and forty-four.
Men and Books

By Sir William Osler, M.D., F.R.S.

XXI. Aristotle.—Greek Thinkers by Gomperz, Vol. IV. Readers of my occasional addresses will have noted frequent references to the work of Professor Gomperz on "Greek Thinkers," Volume IV of which has just appeared. To young men with leisure, young practitioners in the waiting stage, who wish to keep the dough of their minds leavened, let me commend these volumes. An hour a day, or less, for a year, with a note book, and I can promise the best of company and a stimulating diet, full of intellectual hormones. If it be true that a man is born a Platonist or an Aristotelian, my congenital bias was towards the great idealist, but without, I fear, the proper mental equipment; the cares of this world and the deceitfulness of my studies have driven me into the camp of the Stagirite. And it is a glorious tribe, to be sealed of which, even as a humblest member, one should be proud. In the first circle of the Inferno Virgil leads Dante into a wonderful company, the philosophic family who look with reverence on "The Master of those who know"—and so with justice has Aristotle been regarded for these twenty-three centuries*. No man has ever swayed such an intellectual empire—in logic, metaphysics, rhetoric, psychology, ethics, poetry, politics and natural history, in all a creator and in all still a master. The history of the human mind offers no parallel to the career of the great Stagirite.

It is as a biologist that Aristotle has a special interest for us. Professor D'Arcy Thompson, who dealt recently with this side of his activities, thus sums up his attitude as a student of life:

"But he was, and is, a very great naturalist. When he treats of natural history, his language is our language, and his methods and problems are well nigh identical with our own. He had familiar knowledge of a thousand varied forms of life, of bird and beast, of plant and creeping thing. He was careful to note their least details of outward structure, and curious to probe by dissection into their parts within. He studied the metamorphoses of gnat

*"The good collector of the qualities," Dioscorides, Hippocrates, Avicenna, and Galen were the medical members of the group.
and butterfly, and opened the bird's egg to find the mystery of incipient life in the embryo chick. He recognized great problems of biology that are still ours to-day, problems of heredity, of sex, of nutrition and growth, of adaptation, of the struggle for existence, of the orderly sequence of Nature's plan. Above all, he was a student of Life itself. If he was a learned anatomist, a great student of the dead, still more was he a lover of the living. Furthermore his world is in movement. The seed is growing, the heart beating, the frame breathing. The ways and habits of living things must be known: how they work and play, love and hate, feed and procreate, rear and tend their young; whether they dwell solitary, or in more and more organized companies and societies. All such things appeal to his imagination and his diligence. Even his anatomy becomes at once an 'anatomia animata,' as Haller, poet and physiologist, described the science to which he gave the name of 'physiology.'”

Before Aristotle there were other great students of nature among the Greeks, but he first taught men to look upon nature's naked loveliness—to use Shelley's phrase. The noble character of the man as a devoted husband and father, and as a master, are illustrated in his will, of which Gomperz gives an analysis. But the biologist did not escape altogether from the idealism of his great master, Plato. On the grave of his first wife he offered sacrifices as to a heroine, and a votive offering was to be presented in gratitude for the escape from danger of Nicanor, his son-in-law, who was to be “father and brother in one” to his younger children.

The son of a physician, Aristotle saw, as no one had seen before, the value of science in medicine. The following sentences, with which the "De Respiratione" concludes, might have been written to-day: "But health and disease also claim the attention of the scientist, and not merely of the physician, in so far as an account of their causes is concerned. The extent to which these two differ and investigate diverse provinces must not escape us, since facts show that their inquiries are, to a certain extent, at least conterminous. For physicians of culture and refinement make some mention of natural science, and claim to derive their principles from it, while the most accomplished investigators into nature generally push their studies so far as to conclude with an account of medical principles.”


Retrospect of Surgery


In the hope of helping to elucidate some of the problems associated with thrombophlebitis, which in spite of advances in postoperative treatment, still remains common, Burnham reviews somewhat in detail ninety-eight cases of thrombophlebitis from the records of the Presbyterian Hospital.

In distinguishing thrombosis from coagulation, the theory now generally accepted is that the blood platelets play a prominent part in the former and but little or no part in the latter, and, further, that fibrin and its progeners, although active in coagulation, play only a minor part in the formation of a thrombus. Blood platelets collect about a foreign body or, in consequence of a slowing of the blood stream, upon the damaged wall of a vessel, adhering to the vessel wall and to each other. This process is called conglutination and takes place only in the circulating blood. As Baumgarten has shown, there is no thrombus formation in a doubly ligatured excised vein. Following the formation of these nuclei or platelets, there is a rapid accumulation of leucocytes, mostly polynuclears, and following this, and possibly consequent to it, an accumulation of fibrin mixed with red cells. While some observers still adhere to the original coagulation theory of Virchow, Burnham has convinced himself through repeated determinations that there is no decrease in the coagulation time of the general blood in cases of postoperative thrombophlebitis.

According to Aschoff, a change in the character of the blood is a necessity for thrombus formation, while the location of the thrombus is determined by a slowing of the blood stream or by a widening of the vein with the resulting eddy formation. To this may be added injury or disease of the vessel wall. Recently the viscosity of the blood has been suggested as a cause of the slowing of the blood and consequent thrombus formation. Burnham is unable to find any records of viscosity tests in postoperative cases, although Bachman has shown that it is increased in infectious diseases, especially typhoid. It has, further, been definitely proved that in those diseases in which the blood platelets are increased, thrombosis is common. It is possible that in the future the determination of the coagulation time, the viscosity, and the blood platelets, if
made in each case of thrombosis, may lead to important facts regarding this condition.

That chemical changes may influence the formation of thrombi has been abundantly proved. On the one hand, Sahli and Egnet showed that thrombi did not form after the blood had been rendered non-coagulable by the injection of leeches extract, while, on the other, Schimmelbusch was able to cause the formation of experimental thrombi after destruction of the coagulation of the blood by the injection of peptone.

Given the predisposing causes in the blood, what is necessary for the formation of a thrombus? The commonly accepted causes are, (1) a slowing of the blood stream with or without the formation of eddies, and (2) localized injury or disease of the vessel wall. Local causes of slowing of the blood stream are seen in the anatomical relation of the left iliac vein and the artery, and in the pressure on the veins, especially those of the pelvis, by new growths, gravid uterus, tight clothing, etc. These causes, together with the vicosities so common on the lower extremities, without doubt account for the predilection of the lower extremities, especially the left, to thrombophlebitis. Of the ninety-eight cases reviewed, the condition occurred ninety-four times in the lower extremities, and in eighty-one of the ninety-four cases in the left leg. That these mechanical causes cannot of themselves cause thrombus formation is clearly evident, but that they do act as exciting causes in many cases is a well recognized clinical fact. Changes in the vessel wall may cause phlebitis. Injury to the vein without other known cause has been found to excite thrombus formation. Primary inflammation or infection spreading from contiguous tissues may excite a typical thrombophlebitis. If degenerative changes in the veins were the chief predisposing cause, this disease would be much more common in patients past middle life, whereas in the present series 50 per cent. were under forty years of age and 20 per cent. were not over twenty years old.

It is difficult to study a large number of cases of postoperative thrombophlebitis without concluding that the greater part, if not all, of the cases, are infectious manifestations. Heidemann calls attention to the incubation period and holds the entire process to be of an infectious character. Klein points to the afebrile cases as an argument against infection, but, as pointed out by Fromme, many slight rises of temperature may be overlooked and, moreover, infection may occur without febrile reaction. In the present series 13.5 per cent. were clinically afebrile. These were generally the milder cases, the average time of confinement in bed being
fifteen days. Lubarsch examined two hundred and fifteen cases and in spite of the most exact technique could demonstrate organisms in only twenty cases. From this fact and from the fact that thrombophlebitis occurs by preference in the veins of the lower extremities, Klein argues against the infectious theory of the disease, an attitude which in Burnham's opinion is as futile as the argument that rheumatism and tuberculosis are non-infectious because no microorganisms can be demonstrated in the former and because the latter occurs by preference in the apices of the lungs. In Burnham's opinion, the course and symptoms of the disease are too typical of infection to permit of any other conclusion than that the disease is infectious. Where blood counts were made in the series reported, a mild infection was always indicated. In thirty counts on twenty-four patients, the average leucocytosis was 14,700 and the average polymorphonuclear count 87 per cent.

The ninety-eight cases occurred in a total of 11,655 operations. In ninety-four cases, thrombosis occurred in one or both legs. In five of these cases records are incomplete, so that eighty-nine cases only are analyzed.

The incidence of the disease in 11,655 operations was 81 per cent. Special percentages are given in the following table:

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<th>Females</th>
<th>Phlebitis Total</th>
<th>Per cent.</th>
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<td>28</td>
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</tbody>
</table>

Hysterectomy was most often complicated by phlebitis, with ventral hernia, appendectomy and operations upon the uterine appendages next, in the order named. In all of the twelve cases following hysterectomy, the operation was performed for fibroids —twelve in two hundred and twelve operations, a percentage of over 5 per cent. In eighty-one hysterectomies performed for other causes—canceroma, prolapse, etc., no cases of thrombosis occurred.

If infections with ordinary pus-forming organisms were held accountable for phlebitis, we should expect to meet with the complication following operations upon purulent foci, and rarely, if ever, after so-called clean operations. Of 94 cases, 32 had a purulent discharge; 10 were granulating; 52 healed by primary union.
Of the same cases, 40 were drained and 54 sutured without drainage. A study of the postoperative temperature records shows that postoperative temperature had little or nothing to do with the onset and course of the phlebitis. Burnham further shows that in cases where drainage was established, the onset of phlebitis was from two to four days later than in those without drainage, and that the cases in which drainage was employed were generally milder and ran a shorter course. This would lead to the hypothesis that the absorption of exudate from the wound predisposes to postoperative thrombophlebitis; in other words, that the absorption of broken down cellular elements and serous exudate, with or without bacteria, causes such a change in the blood as to lead to phlebitis and thrombosis. This hypothesis is in accord with many of the known facts and warrants further study.

Long confinement to bed has recently been suggested as a cause of postoperative thrombophlebitis. In this series, seventy cases began while the patient was still in bed and nineteen after the patient had been allowed to walk around, and, as a matter of fact, the records would seem to indicate that the dependent position of the limbs is a factor in the causation of the process.

Onset. Average for all cases 12.2 days; average for drainage cases, 13.6 days; average for clean cases, 11.0 days.

Of the 89 cases studied, 12 were afebrile, and 77 ran a febrile course.

Of the eighty-nine cases, three died—one from pneumonia (possibly embolic), one from cerebral embolism, and one from gastric hæmorrhage on the tenth day following gastro-enterostomy and two days after the onset of phlebitis.

Treatment. Absolute rest in bed with ice cap and elevation of the leg was the routine method of treatment employed. In other cases ichthyol, menthol, or aluminum acetate dressings were employed. Lemon juice internally may be administered.

Burnham concludes: (1) that postoperative thrombophlebitis is an infectious disease, a definite entity in some way connected with the absorption of material from the wound; (2) that it is preceded by a slowing of the blood stream and by local and general disease of the vessel walls; (3) that it occurs at an earlier date in "clean" cases than in drainage cases; (4) that rest in bed seems to be the only therapeutic measure capable of exerting any marked influence on the severity and course of the disease; (5) that ichthyol seems to have a direct and constant influence on the local pain; (6) that internal medication deserves a more thorough trial than it has had previously.
Res Judicatae

THE EARLIEST RECOGNITION OF APPENDICITIS

The question of priority in describing or discovering anything is always of historical interest. In the case of the recognition of inflammation of the vermiform appendix, it would seem, from the writings of various authorities, that there was no doubt as to priority. All authors are of one voice in crediting the first record of such a case to Mestivier, who, in 1759, reported as follows: (I quote from Kelly and Hurdon). "A man of forty-five sought relief for a tumour in the umbilical region on the right side: fluctuation existed and about a pint of pus was evacuated by incision: the wound healed rapidly but the patient died shortly afterwards. The account of the autopsy is that 'the cæcum presented nothing extraordinary: it was covered with gangrenous patches. It was not the same with the vermiform appendix. I had scarcely opened it when we found a large pin, very rusty and so corroded that the least touch would have broken it, a condition which proceeded, no doubt, not only from moisture, but from the acid nature of the material enclosed in the vermiform appendix. After what I have just said, it is easy to understand (although the patient had never spoken of swallowing a pin) that the one under discussion had been concealed for a long time in the vermiform appendix of the cæcum and that it was undoubtedly this which had irritated the different coats of which the organ is composed, and had given rise to all the symptoms, finally causing the death which occurred.'" Edebohls states that Mestivier's case is the first on record, but writes that it occurred in a woman eight months pregnant, but Kelly and Hurdon state that they have verified the above facts.

But a far more typical case of appendicitis, in that it was not caused by a foreign body, stands on record in an old tome that I have recently come across, and which tome will, at the owner's request, be placed in the library of the Academy of Medicine, Toronto. It is a translation by a Dr. Daniel Cox, of London, under the date of 1755, and the book is entitled "Heister's Cases in Surgery." The work consists of a number—six hundred and twenty-four in all—of observations, and is a mine of interesting case records which reflect the curious beliefs and treatments of the day. In the
preface to the translation, Daniel Cox says that "the practice of the writer is not servilely tied down by the rules of others, but is chiefly the result of his own observations, unbiassed by popular modes and unrestrained by popular prejudices." Laurentius Heister practised in Altdorff, and was, according to Daniel Cox's preface, the introducer into Germany of the cooling method of the treatment of fevers, the use of Peruvian bark and of mercury, all of which innovations were at first much opposed by the physicians of the country. The translator likens him to "our illustrious countryman Sydenham" in the way that he fought against "the prepossessions which the philosophical systems of his days, founded on a priori reasonings and metaphysical subleties, had rendered almost sacred." The quotation which we would here give is as follows:

"Observation CX. Of an abscess in the vermiform process of the caecum. In the month of November, 1711, as I was dissecting the body of a malefactor in the public theatre at Altdorff, I found the small guts very red and inflamed in several places, insomuch that the smallest vessels were as beautifully filled with blood, as if they had been injected with red wax, in the most skilful manner, after Ruysch's method. But, when I was about to demonstrate the situation of the great guts, I found the vermiform process of the caecum preternaturally black, adhering closer to the peritoneum than usual. As I now was about to separate it, by gently pulling it asunder, the membranes of this process broke, notwithstanding the body was quite fresh, and discharged two or three spoonfuls of matter. This instance may stand as a proof of the possibility of inflammations arising, and abscesses forming, in the appendicula as well as in other parts of the body, which I have not observed to be much noticed by other writers; and when, in practice, we meet with a burning and pain where this part is situated, we ought to give attention to it. It is probable that this person might have had some pain in this part, but of this I could get no information. In such cases I look upon clysters prepared with emollient and discutient herbs, such as mallows, marsh-mallows, and camomile flowers, and the like remedies against inflammations, boiled in milk, and used frequently, to be of excellent use; as they reach the part, and may resolve the inflammation, or bring the abscess to a suppuration, partly by their warmth, partly by their resolving and discutient qualities, opening the abscess, that the matter may be discharged by stool, and the patient may hereby be saved, which, when the parts in the abdomen become corroded, can scarcely happen, but death must follow."
Here we have a clear description of a gangrenous appendix, containing pus, and surrounded by a localized peritonitis with some adhesions; and it will, I think, be admitted that the word-picture might have been drawn to-day. Very likely, further historical research may produce a still earlier record of the recognition of inflammation of the vermiform appendix as a frequent source of peritonitis, but for the present this one of the learned Heister must stand as the first clear description that we have.

Toronto.  
R. D. Rudolf.

Obituary

Dr. W. O. Eastwood, of Whitby, Ont., died March 22nd, after a brief illness. For the past thirty years, Dr. Eastwood had practised at Whitby. He was coroner for that district and was well-known and highly esteemed. He leaves a widow, one son—Dr. Eastwood, of Peterborough, and one daughter.

Dr. Robert Lawrence, of Vancouver, died of paralysis, March 19th, in the seventy-first year of his age. Dr. Lawrence was born near Springfield, Ont., but the greater part of his childhood and early youth was spent at the "Old Lawrence Homestead" near Collingwood. In 1871 he obtained his M.D. degree and began his professional work at Mono Mills. He afterwards went to Hontywood, where he spent many years, until in 1894 he was elected medical officer to the Dunsmuir mines at Cumberland. Four years later Dr. Lawrence went to Vancouver. Here he enjoyed a large and lucrative practice and made many friends. He was a Mason, an Orangeman, an Anglican, and a Conservative—an indefatigable worker and a popular physician.

Dr. Lorne Campbell, son of the late Dr. G. W. Campbell, of Montreal, died at Peaton, Scotland, March 26th, in the fifty-eighth year of his age. Dr. Campbell was born in Montreal, and took his M.D. degree at McGill University in 1882. He then took post-graduate work in Edinburgh and Vienna, and returned to Montreal to practise. Six years ago he went to Scotland to reside. Dr. Campbell was a well-known athlete and his death is much regretted. He leaves a widow and three children.
Dr. Rankine Dawson, third son of the late Sir William Dawson, died in London on April 1st. Dr. Dawson was born in Montreal in 1858. He graduated from McGill University as B.A. in 1878, and as M.D. in 1882. For many years he was surgeon on one of the P. & O. steamers and, in this capacity, took voyages to China, Australia, and South America. Dr. Dawson is survived by his mother, Lady Dawson, one brother, and one sister.

Dr. George Martin, of Montreal, died from diphtheria, April 1st, in the thirtieth year of his age. He was a graduate of Laval University and was connected with the Bruchesi Institute.

Dr. Roch Moise Samuel Mignault, of Yamaska, Que., died March 30th, in the seventy-seventh year of his age. Dr. Mignault was a keen politician and was the Liberal member for Yamaska for a number of years.

Dr. James Wallace, of Alma, Ontario, died April 11th, in the seventy-ninth year of his age. He was a well-known figure in the village of Alma, where he had practised for over thirty years, and his death is much regretted. He leaves a son and a daughter.

Dr. Angus J. Murray, of Fredericton, died of pulmonary tuberculosis on April 3rd. Born at Loganville, Pictou county, in 1855, Dr. Murray was educated at the Pictou Academy and the Provincial Normal School. After a few years spent in the teaching profession, he took up medicine at the Halifax Medical College. In 1884 his health began to fail and he went west. The following year he again took up his studies at what is now known as the medical department of the university of Illinois, where he succeeded in obtaining his M.D. degree. For the next five years he practised at Greenwich, King's county. In 1890, Dr. Murray went to Fredericton Junceton, Sunbury, and here he spent twenty-one years in the faithful fulfilment of his professional duties. In 1909, he was elected president of the New Brunswick Medical Society; he was the first country physician to attain to this distinction. He was a member of the provincial board of health and of the municipal council, and for two years was warden of the county. In politics he was a Conservative. Dr. Murray was twice married and is survived by his mother, his widow, two sons, and two daughters.
News

MARITIME PROVINCES

The Hon. Charles Dalton has promised to give $20,000 to build a sanatorium in Prince Edward Island for the treatment of tuberculosis, and to give $1,000 a year for ten years to assist in the maintenance of the institution. The sanatorium is to be undenominational and, while those able to pay will be expected to do so, the poor are to receive free treatment. The construction and future direction of the institution is to be undertaken by the Medical Society of Prince Edward Island.

Mrs. Jordan, widow of James C. Jordan, of Boston, has presented to the government of New Brunswick a beautiful country residence, situated twenty miles from Moncton. The house is to be converted into a sanatorium for tuberculous patients in the incipient stage of the disease. The property consists of about eight hundred acres. A commission has been appointed to direct the hospital.

At a recent meeting of the Fredericton Board of Health, a resolution was passed bringing to the attention of the city council the urgent need for an isolation hospital. The old isolation hospital was taken over by the city council some time ago in connexion with the Chesnut Canoe Factory and, as yet, no steps have been taken to replace it by a more modern institution.

Several cases of typhoid fever have been reported from New Waterford. An emergency hospital has been opened and the feasibility of erecting a permanent hospital is under consideration. At present, the nearest hospital is the St. Joseph's Hospital at Glace Bay.

The Halifax Hospital for Women, which has been instituted by Dr. E. K. Maclellan, was opened March 20th. It is the first of its kind in Nova Scotia and supplies a need which for long has been felt. No patients suffering from tubercular or infectious disease of any kind will be admitted, but medical, surgical and maternity cases will be treated. The hospital contains six bedrooms but, if necessary, it can easily be enlarged.
In the twenty-second annual report of the Hotel Dieu St. Joseph at Campbelltown, N.B., is given the following information: 119 men, 95 women, and 25 children were admitted to the hospital during 1912; of these 205 were discharged cured, 13 improved, and 10 unimproved; 11 deaths occurred. The causes of death are stated to have been typhoid fever, sarcoma of left kidney, heart disease, crushed skull, and gangrened foot. On December 31st, 1912, there were fourteen patients in the hospital. The number of hospital days during the past year were two thousand six hundred and sixty-eight.

ONTARIO

Several cases of smallpox have occurred at St. Thomas.

The hospital erected by the National Sanitarium Association at Weston will be opened early in June. It is to be called the "Queen Mary Hospital."

It has been found necessary to close the hospital at Thessalon for a short time until some better arrangement can be made to meet the expenses of administration.

The Wingham General Hospital is to be enlarged. It was opened six years ago and since then seven hundred patients have been admitted for treatment. The proposed addition will cost about five thousand dollars.

Among other gifts recently made to the Woodstock Fisher Memorial Hospital is an x-ray apparatus, which cost about seventeen hundred dollars.

Smallpox is reported from Ojibwa near Sandwich. Seventeen persons are suffering from the disease.

The West Elgin Medical Society met in Rodney, March 12th. Dr. Dorland reported several cases of subphrenic abscess.

Dr. Thompson, of Mapleton, has been appointed house surgeon of St. Joseph's Hospital.

Sixty-nine patients were treated and thirty-nine operations were performed in the Kincardine General Hospital during the period from January, 1912, to March, 1913.
The agricultural building on the Stamford Fair grounds at Niagara Falls has been converted into a smallpox hospital.

There is quite an epidemic of smallpox at Earlton. A child, coming to the public school from an outlying farm, was the first sufferer. Unfortunately, the fact that the child had smallpox was not observed until the case was well-advanced and until several other children and the teacher had contracted the disease. The school has been closed and a rigid quarantine instituted by Dr. George, provincial medical officer of health. Twenty cases have already developed, but as every precaution, including vaccination, has been taken to prevent infection, it is hoped that few additional cases may develop.

Dr. Greer has been appointed medical officer of health for North Monaghan. The remuneration is to be $100 a year.

Thirty-eight nurses are now engaged in medical inspection work in the schools of Toronto.

Thirty-eight patients were admitted to the Amasa Wood Hospital at St. Thomas during February, and there were six births and two deaths. On March 7th, seventy-one patients were in the hospital.

According to the daily press, in future the charges made by the medical profession in Hamilton will be: "advice over telephone $1; advice without medicine $1 to $3; full and exhaustive advice $2 to $5; regular morning visits $2 to $5; call in afternoon when notice has not been given in the morning fifty cents extra; maternity cases from fifteen to fifty dollars."

One hundred and twenty-four infants of under one year of age died in Toronto during the month of February.

A grant of eighty-seven thousand dollars has been made by the provincial government to the hospital for the feeble-minded at Orillia. Sixty thousand dollars of this is to be devoted to the extension of the hospital. It is probable that one cottage, and perhaps two, will be added this year.

A new smallpox hospital is to be built at Brantford.
The extension which is being added to the St. Joseph’s Hospital at Chatham will be completed about the end of June.

An extension is to be added to the north side of the Strathroy Hospital. This, with other proposed changes, will cost about six thousand dollars.

The annual meeting of the London Health Association was held April 2nd. On this occasion, it was resolved that, in future, the annual meeting should be held on the second Wednesday in October, instead of on the first Wednesday in April, and that the fiscal year of the Association should be changed from the 31st day of December to the 30th day of September in each year. It was resolved, also, that application be made to the lieutenant-governor-in-council to amend the charter of incorporation to permit cities of 15,000 population, or over, to appoint not more than two representatives to the board of directors, one of such representatives to be the mayor of the city in question.

During the months of February and March, there were in Berlin eight cases of smallpox, two of scarlet fever, and nine of diphtheria, four of which resulted fatally.

QUEBEC

The first annual meeting of the District of Bedford General Hospital at Sweetsburg was held on March 25th last. The first patient was admitted on March 9th, 1912, and during the year seventy-three patients have been treated, including twenty-four surgical cases. The daily cost of maintenance for each patient has been $1.90. The death rate was 1.33 per cent.

The appeal for funds to establish a tuberculosis hospital at Quebec has brought forth a ready response. The amount required before the building can be commenced is one hundred thousand dollars; of this, fifty thousand dollars has been subscribed.

The Sixth Congress of the “Médecins de la langue française de l’Amérique du Nord,” will take place at Quebec in 1914, and not at Montreal during the present year.

The following statistics are given in the report for 1912 of the Montreal Board of Health. Of 658 pupils examined for de-
fective sight, only 106 were without visual defect. Of 207,431 pupils examined, 67,608 were suffering from illness or defects of some nature. A large proportion—42,211—had defective teeth, and 5,475 were suffering from skin affections; 6,141 cases of contagious disease were reported in the city, 1,710 being children of from five to ten years of age. The cases included: scarlet fever, 1,305; tuberculosis, 1,384; typhoid, 417; smallpox, 194; and chicken-pox, 957.

The annual meeting of the American Gynaecological Club was held in Montreal, February 21st and 22nd. About thirty-five members of the club visited Montreal.

Dr. J. E. Laberge is acting as medical officer of health for Montreal in the absence of Dr. L. Laberge, who was recently thrown from a sleigh and severely injured.

MANITOBA

The question of building a hospital at Souris is under consideration.

Brandon is greatly in need of more hospital accommodation. Every department of the present building is over-crowded. It has been suggested that a separate maternity hospital be erected and that a new general hospital be built on the unit plan, as is being done in Saskatoon. At a meeting of the building committee which took place March 25th, a resolution was passed to the effect that a maternity hospital be built with accommodation for from twenty-five to thirty patients, that the surgical building be extended, the old building remodelled, and the nurses’ home enlarged. Some of the members present at the meeting considered that it would be unwise, at the moment, to expend the money necessary to build a new hospital.

The medical inspection of children in the public schools was discussed at a recent meeting of the school trustees at Portage La Prairie. It was decided that information should be obtained concerning the cost of such a proceeding and that, if found practicable, such inspection should be made in the future.

Dr. G. W. Sinclair, of Vancouver, has been appointed superintendent of the Winnipeg General Hospital.
The annual meeting of the Winnipeg General Hospital took place March 31st. During the past year 5,599 patients were treated, and the number of hospital days was 94,925. These figures are somewhat less than those for 1911; but the explanation for this is that during the alterations which have been made to the building the accommodation for private patients has been decreased. This explains also, to some extent, the deficit of $37,185, shown by the treasurer's statement. The death rate during the year was 6'84. The new wings will be completed probably next June, and when these are in use the capacity of the hospital, which now can accommodate 245 patients, will be almost doubled, and the facilities for the treatment of out-patients will be greatly increased. The cost of the new buildings has been $650,000. The Winnipeg General Hospital was organized in 1872 and incorporated provincially in May, 1874. After many vicissitudes and many temporary resting places, the hospital first occupied its present site in 1884, when the original building was erected at a cost of $65,000.

SASKATCHEWAN

The Swift Current Hospital was opened a year ago. During the year, 504 patients have been treated, 250 being surgical cases.

The new hospital at Saskatoon will be built on the university grounds. This year, it is proposed to build one unit which will accommodate two hundred and ten patients, and a contagious diseases hospital with accommodation for fifty patients. Later, perhaps in two years' time, the hospital will be extended. Ultimately, it is the intention so to enlarge the hospital that there will be room for from eight hundred to one thousand patients. With the room provided by extensions and shacks, the present hospital can accommodate one hundred and thirty patients, and during the past year over one thousand six hundred patients were treated.

A serious outbreak of smallpox is reported from Lac La Plonge. The disease has broken out in a school in which there are about eighty Indian pupils.

Two cases of smallpox recently occurred in Prince Albert and as there is no smallpox hospital there, it was difficult to know where to send the patients. It was decided that they should be sent to the isolation hospital, where several cases of scarlet fever were under
treatment. This action has been criticized by some members of the hospital board, as on June 12th, 1912, the city was notified that from that date onwards no cases of smallpox could be admitted to the isolation hospital. The fault would appear to lie with the civic authorities, who as yet have failed to make any provision for cases of smallpox which may occur in the city.

**Measles** is very prevalent in the town of Elbow; and from Leney, a town forty miles west of Saskatoon, come reports of a smallpox epidemic. The usual quarantine has been instituted.

**ALBERTA**

A civic organization has been formed in Calgary, and has been given the name of the Calgary Forum. It is non-sectarian and its meetings are to be held on Sunday afternoons. The purpose of the association is to create a wider interest in questions concerning public welfare, and such subjects as "Prison Reform," "Civic Health," "Child Protection," "The Hospital Question," will be discussed. It is the intention also, before a by-law is submitted and voted upon, to discuss it fully and from every possible standpoint, so that the citizens may be well informed on the matter before making their decision and giving their vote.

It is probable that cottages will be built at Medicine Hat, to be used as extension wards to the isolation hospital in case of necessity.

Dr. P. F. Smith has been appointed medical inspector of schools at Camrose.

The Camrose Hospital Board recently passed a resolution to the effect that in future, on admission to the hospital, patients must pay in advance one week's fees, the remainder of the amount due to be paid before they leave the hospital. The charge made for a private ward is $2.00 a day, and for the public wards $1.50 a day.

At a recent meeting of the Edmonton Medical Association, a resolution was passed requesting that medical men be no longer debarred from acting on the hospital board and that provision be made for medical representatives on that board, such representatives to be nominated by the Edmonton Medical Council. The
matter has been referred for consideration to a committee consisting of three aldermen, the chairman of the hospital board, and a representative of the Medical Association.

A grant of $4,000 has been made by the provincial government to assist two young physicians willing to practise among the settlers in the far north of Alberta. A voluntary hospital has been opened at Lac Ste. Anne. It has been found that here in fifty per cent. of the serious accidents that occur, the patient dies because it is impossible to obtain medical assistance.

The twelfth annual meeting of the Memorial Hospital Board, at Red Deer, took place on Friday, March 14th. The hospital was enlarged last year at a cost of over fifteen thousand dollars, and now affords accommodation for sixty patients. This year, a nurses’ home is to be built. A training school for nurses has been organized and at present there are four probationers training in the hospital. Three hundred and forty patients were treated in 1912, the daily cost of maintenance for each person being $1.49; the increased cost of living, however, has brought this rate up to $1.58 this year. The hospital receives the usual provincial grant of twenty-five cents a day for each patient, and last year eight hundred dollars were granted by the town council; otherwise, the hospital is largely dependent upon voluntary subscriptions.

Over twenty-three thousand dollars have been subscribed for the General Hospital which is to be built at Walkerville. The site was given by a local firm.

**BRITISH COLUMBIA**

An application has been made to the provincial government by the Chase Board of Trade for a grant sufficient to establish an isolation hospital. If the government will give the money required for the construction of the building, the citizens are prepared to furnish and equip the hospital.

At the twentieth annual meeting of the directors of the Kootenay Lake General Hospital, the treasurer stated that last year the hospital made a profit of $1,302.05. The plans for the new building were submitted. It is to be commenced at once and will contain fifty-three rooms. During 1912, 583 patients were treated,
the aggregate number of days' treatment being 9,971. Sixteen deaths and forty-nine births occurred, and the largest number of patients in the hospital at any one time was thirty-six.

Canadian Literature

Original Contributions

Dominion Medical Monthly, April, 1913:

Treatment of Diffuse Septic Peritonitis . . . . H. A. Bruce.
Sterilization and other interests . . . . J. S. Sprague.

The Canadian Practitioner and Review, March, 1913:

Medical Heresy . . . . A. F. McKenzie.
On a case of Cryptogenetic Anæmia . . . . O. C. Gruner.

Public Health Journal, March, 1913:

Heredity as a cause of Mental Defectiveness . . . . J. P. Downey.
The Social Evil . . . . J. Pederson.
How to obtain efficiency from Pressure Filters . . . . H. W. Cowan.
Sewage Disposal in Rural Districts . . . . A. Rodwell.
Human Efficiency . . . . W. A. Evans.
The first regular Open Air School in Canada . . . . J. H. Holbrook.
Nursing side of Medical Inspection of Schools . . . . L. L. Rogers.
Unemployment and the Public Health . . . . B. S. Rowntree.
The use of Typhoid Vaccine . . . . G. A. Gray.
The future of the Public Health Laboratory . . . . H. W. Hill.

L'Union Médicale du Canada, March, 1913:

L'Iode, antiseptique chirurgical . . . . O. F. Mercier.
ASSOCIATION JOURNAL

Le Bulletin Médical de Québec, March, 1913:
Calculose de l'uréthre—Fracture du Pied
La Question de l'Inspection Médicale des Ecoles, à Quebec  . . . .  A. Simard.

Dr. L.

The Canadian Practitioner and Review, April, 1913:
Some Aspects of Renal Surgery . . . . Ramon Guiteras
Some clinical observations on Ateriosclerosis . . . . James Third.
Acromegaly with Localized Muscular Atrophy . . . . Julian Loudon.
Medical Thoughts, Truths, Facts, and Fancies . . . . J. S. Sprague.

Medical Societies

BRANT COUNTY MEDICAL ASSOCIATION

A successful meeting of the Brant County Medical Association took place at the Brantford Club, March 13th. Dr. Olmstead, of Hamilton, addressed the meeting and his paper was followed by an interesting discussion, in which Dr. E. R. Secord and Dr. C. C. Fissette took part.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The ninth regular meeting of the Society was held Friday evening, February 7th, 1913, Dr. D. J. Evans, president, in the chair.


Discussion. Dr. J. M. Elder: I do not quite gather from Dr. Archibald's remarks what the exact relation is between the hydrocephalus and the tumour. I understood him to say he still thinks there is a tumour, and I would like to know what is the relation of the tumour to the hydrocephalus; are all the symptoms due to the latter or to the former, or does the irritation of the tumour produce the hydrocephalus? With regard to the interesting re-
marks about drainage in these cases, it does seem that drainage is not very much to be relied upon. If you can get the fluid out on the surface, then it may be absorbed by the Paccionian bodies, or by the veins. I saw, in Chicago, several cases where permanent drainage was attempted by putting in small glass tubes, and the claim was made that great benefit was derived from it. Personally, I think the habits complained of by this patient really are the crux of the whole matter, and it is a question whether it is worth while doing much for patients who, speaking generally, have congenitally defective brains; you do not get a sane person because you do not start with one.

Dr. E. W. Archibald: With regard to Dr. Elder’s question as to what is the relation of these cases of tumour to hydrocephalus, I feel sure that the patient has a tumour which is not localizable. I discovered very definitely that he also had a complicating hydrocephalus. It is pretty well established now, I think, that any tumour, wherever situated in the brain, may, by pressure, so block the entrance to the fourth ventricle or the aqueduct of Sylvius and the foramen magnum as to cause an obstruction in the posterior fossa and in that way dam back the cerebro-spinal fluid in the ventricles. Doubtless many of the symptoms are due to the internal hydrocephalus rather than to the tumour itself. After all, it is the general space reduction which counts. I lately did a ventricular puncture in a case of epidemic cerebro-spinal meningitis and found a pressure of 700 mm. of water in the ventricles. The patient was markedly spastic in the legs and arms before operation and was quite flaccid afterwards; an observation which goes to show that spasticity may be due entirely to pressure from the internal hydrocephalus. So, in cases of tumour, many of the symptoms of cerebral compression of paralysis “à distance” and various vague signs are pretty certainly due to the complicating internal hydrocephalus. Drainage through the corpus callosum is not absolutely to be relied upon, but its results are frequently remarkable. Of course it is very much worth while in these cases of tumour to do it; while, on the other hand, I do not think it offers much in congenital hydrocephalus.


Perhaps, in order to understand more of the development of the means we have at the present day of recognizing the value of radiography, as applied to disease of the mastoid, I might briefly mention some of the earlier methods of diagnosis and contrast
them with that of radiography. In the early days of otology, it was only recognized that the mastoid process was infected by disease when it was so far advanced as to produce such a definite fluctuating swelling that the auricle was projected forwards; and only then was it deemed necessary to interfere. Thirty years ago an attempt was made to recognize the early involvement of the mastoid with disease by means of the surface temperature, and for that purpose a thermometer was constructed, and I remember very well that this was the routine method of recognizing disease of the mastoid. If the temperature was found to be a little more than normal, it was supposed that there had been early involvement of the mastoid. The next attempt was by means of trans-illumination. This method was first carried out in Vienna some years ago and it has since been improved upon by Mosher, of Boston. The speculum of this apparatus is inserted into the auditory canal and in a very dark room, if no disease be present, you can see that the mastoid is fairly well illuminated; but if disease be present the illumination is indistinct.

When reflecting on the value of radiography in disease of the frontal sinuses and antra, it occurred to me that perhaps the same method might be applied to the mastoid process, and thus, independently of any work that had been done elsewhere, I had the first plate made in 1908. It was taken with the patient lying on his face, but the result was not satisfactory, as only the cells of the tip of the mastoid were visible. Studying the matter still further, I learned that Scheier, of Breslau, had done some work along these lines, but his plates were taken with the patient lying on his side. In 1909 I again took up the work and brought it to the stage of perfection in which it stands to-day. In the autumn of that year I met Beck, of Chicago, when he gave a demonstration in New York, and found that the method which we had adopted was on somewhat similar lines, and I was encouraged thus to carry on this work from the results he had obtained; most of his work was on skulls, whereas our work has been altogether on the human subject. In 1910 the work had so far progressed that on attending the meeting of the British Medical Association in London, I exhibited a number of slides which proved of such interest to the members that it is now a routine method in their examination. Mr. Sidney Scott, of London, has advanced the method by adding stereoscopy to the radiography of the mastoid. The Royal Society of Medicine quite recently gave an evening to a discussion of this subject. In 1911, Kanasugi, of Tokio, did similar work.
What are the practical results obtained from radiography? First we learn from the plate the character of the mastoid bone itself; it may be either pneumatic, diploëtic, or sclerosed. We can definitely determine from the radiogram the exact situation and relation of the lateral sinus to the mastoid. In some cases we can actually locate a thrombus in the lateral sinus. We are able to recognize by this method the early involvement of the mastoid when apparently there are no symptoms to indicate it by the condition of the middle ear itself. I recollect two or three cases which came under my care, where the examination of the middle ear was negative and even very little tenderness was elicited over the so-called "chief points" of the mastoid, the patient complaining only of a neuralgic condition of the head. One of these cases had been treated for four weeks for so-called neuralgia. The radiogram showed that the mastoid was definitely involved in a suppurative condition, which was confirmed at operation.

Then followed a demonstration of a large series of radiograms exemplifying normal and diseased conditions of the mastoid. In connexion with this work of radiography Dr. Birkett expressed his appreciation of the invaluable assistance of Mr. MacNeil of the Royal Victoria Hospital.

Discussion. Dr. W. W. Chipman: I would like to ask Dr. Birkett how he distinguishes the condition of one mastoid from that of the other or opposite mastoid in these pictures. I understand that the picture is taken laterally through and through the head and I would like to know how the one picture does not confuse or cover up that of the other side.

Dr. Birkett: The head is at an angle of 25 degrees and so placed that the mastoid which is not to be taken is thrown absolutely out of focus.

Dr. Robert Wilson: The question which Dr. Chipman just asked was one which occurred to me, because the method which Dr. Birkett has adopted is only one of the methods which throw out the opposite mastoid, and as demonstrated to-night it accomplishes its object very well indeed. It is the method most used by Carl Beck, I believe. Sydney Lang takes an angle of 20 degrees to one side and 15 degrees above the external meatus, and while it does not give you such a pretty picture as that shown to-night, it does, perhaps, give one a very true idea of the actual condition of affairs. The whole question of radiography of the sinuses is much more difficult than at first appears; the sphenoids are particularly difficult to show. Speaking of them, perhaps the method
adopted in Germany may be mentioned as a very good one; that is, taking the picture from above the head and showing it through the angle of the jaw. Skinner takes an angle from the back of the head and shows the sphenoids through the orbit of the opposite side. The ethmoids are very easy to take, but difficult to distinguish from one another. In my seventeen years’ experience of this kind of work, I have never seen more beautiful plates than those presented to-night. Mr. MacNeil is to be congratulated on his technical results.

Dr. J. G. Adami: I join with all here present in congratulating Dr. Birkett, and those who have worked with him, upon the splendid demonstration he has afforded to us. It is, I think, but meet, that when Dr. Birkett tells us of the excellent results that have followed the employment of the stereoscopic method of studying radiographs of the mastoid area, we should recall the pioneer part played by one of our members in the application of that method,—a member whom we all honour. If I mistake not, it was in this very room that Dr. Girdwood gave the first public demonstration of the method of taking a stereoscopic radiograph, and of the value of stereoscopy in determining the exact location of the lesions shown in radiograms.

PAPER: The paper of the evening was read by Dr. J. Appleton Nutter on “Congenital anomalies of the fifth lumbar vertebra.”

CASE REPORT: Placental tumour, by Dr. D. J. Evans.

G. G., aged twenty-nine, 11-para, English, admitted to the Maternity Hospital May 24th, on account of severe vomiting. The general health had always been fair; married one and a half years, had had one child, during the pregnancy moderately severe vomiting, labour difficult. This child died at the age of five months. The last menstruation commenced March 15th, 1912. Vomiting began three weeks before entering hospital and had gradually increased in severity. On examination she was found to be in a fairly well nourished condition, of blond complexion. Pelvic measurements practically normal. An intrapelvic examination showed the uterus to be enlarged. Under treatment by sedatives and rest in bed she improved and left the hospital on June 8th. She was readmitted on June 21st, stating that she had been well until the nineteenth, when vomiting returned with severe abdominal pain. Pain recurred at times during her stay in the hospital. She left much improved, eating the regular diet without inconvenience. On October 26th, she was again admitted to the hospital, being then seven months pregnant. Two days previously she had wakened
in the night nauseated and had begun to vomit, this continued and, on admission, there was almost constant retching and vomiting. The vomitus was deeply bile-stained, containing much mucus. On examination the abdomen was very large and prominent, the fundus of the placenta was raised and the umbilical cord showed a tense ring. A diagnosis of hydramnios was made. The patient complained of constant epigastric pain and only rested in the sitting posture. Temperature normal, pulse 90-112. Treatment was gastric lavage and rectal administration of nutrient enemata and salines. November 1st, she went into labour at 7.30 a.m., the vertex presented, membranes ruptured artificially and 3,400 c.c. of fluid escaped, after which the child’s head appeared. The child was a female weighing 1,800 grammes, very vigorous, and when discharged from hospital weighed 1,470; it has since improved and is now a well nourished infant. The placenta separated and was easily expressed twenty minutes after the child was born. The blood loss was about 200 c.c. The patient left the hospital two weeks after delivery.

On a cursory examination, the placenta and membranes appeared quite normal, but on palpation a hard mass was felt in the placenta as large as a hen’s egg, which was easily shelled out. On section it had a dark-red colour and was spleen-like. The placenta was sent to the Royal Victoria Hospital for examination. Tumours of the placenta are of infrequent occurrence, seventy-nine cases only being reported in the literature. The most frequent variety is the myxoma fibrosum. Most placental tumours consist of masses of villi with hypertrophy.

Dr. Grüner’s report of the specimen may be summarized as follows: Two masses are found in the placenta close to the insertion of the cord, the main tumour was slightly lobulated and of flesh colour; the second mass was a simple haemorrhagic infarct. Microscopic examination of the tumour showed it to consist of very closely packed capillaries of small size, separated by a small amount of connective tissue with relatively large nuclei. There was no tendency to fibrous formation.

Dr. W. W. Chipman: I would like to congratulate the president of this Society on the specimen that he has shown this evening. This tumour of the placenta makes, I think, the seventy-third placental tumour of which we have record. The tumour itself is of the ordinary type, a chorio-angioma, with areas of myxomatous tissue, more or less non-vascular. The main mass of the tumour, however, is made up of blood spaces. Johnston, of Edinburgh, read a paper before the meeting of the British Medical Association,
in Liverpool, last year, on "Tumours of the Placenta," and showed a single specimen very similar to this one of Dr. Evans. The tumours themselves seem to have very little pathological significance. They seem to interfere in no way with the nourishment of the embryo and foetus, and the most that can be said is that they are frequently associated with a certain degree of hydramnios.

The tenth regular meeting of the Society was held Friday evening, February 21st, 1913, Dr. D. F. Gurd in the chair.


Dr. Shanks: I am indebted to Dr. Finley and Dr. Peters for permission to bring this case before you. The patient was admitted from the out-patient clinic of Dr. Peters to the medical wards under Dr. Finley. He gave the following history: age thirty-eight, a brewer by trade, born in Germany. In 1908 went to Cairo, and in 1909, had an attack of dysentery lasting three weeks, fifteen or twenty stools a day containing blood and mucus. With this attack he also had pain in the right side and was told there was some enlargement of the liver. For a year and nine months he was well, then he had another severe attack of pain in the right side in the neighbourhood of the liver, which he was told was appendicitis; it lasted for some ten days; no operation. This was in March, 1912. In September, 1912, he went to Greece and there took sulphur baths for some time. In December, 1912, he again had severe pain in the right side—lower thorax—and was told that he had enlargement of the liver and advised to go to a cold country. On December 23rd, he appeared in the out-patient department of the General Hospital. He complained of pain in the right side—lower thorax—with marked constipation. His appetite was fair, no vomiting, no cough; he had lost a great deal of weight and had frequent severe sweats. The signs present were those of an enlarged liver; dulness from the fourth rib in front in the nipple line to 4½ cm. below costal border = 21 cm. Posteriorly on the right side, dulness from the angle of the scapula to the last rib. On admission to the ward his temperature ran a remittent febrile course with occasional chills and rises to 103°. Urine showed neither albumin nor sugar and no pus. Blood examination showed red cells 3,340,000, white cells 10,400, haemoglobin 66 per cent.; differential count of white cells: 70 per cent. polymorphonuclears, 16 per cent. lymphocytes, 12 per cent large mononuclear cells and 2 per cent. mast cells. On the 8th of January, 1913,
a needle was inserted in the right side through the seventh intercostal space in the posterior axillary line and 80 cc. of reddish-brown fluid withdrawn. Examination of this revealed no amoebae. On January 10th, he was transferred to the surgical side for operation. Such cases are interesting, only six having been admitted to the General Hospital in the last twelve years. The last, in 1909, was reported by Dr. Finley and the interesting fact in this case was that the man had never been outside of this province, save to Ottawa.

Dr. J. Alexander Hutchison: The operation turned out to be quite insignificant and was done by Dr. Barlow. When the case was transferred from the medical side the presence of this fluid had already been established and the question resolved itself into the best way of draining the cavity. The difficulty, of course, was to know just where the abscess would be. In this instance the fluid had been drawn off from the dome of the liver, so that seemed to be the proper place to effect drainage. One of the ribs was removed and it was at once noticed that the remaining portion of the periosteum bulged quite definitely and fluctuated, so that it was a small matter to enlarge here; we got into a fairly large cavity which seemed to run downwards and outwards, in fact a sort of canal on the surface of the liver. We followed this and put in a large drainage tube, and the patient has done very well. There has been a marked improvement. The fluid was negative and of the regular anchovy sauce character.

2. Osteitis deformans (Paget's disease) by Dr. A. Mackenzie Forbes. The last time such a patient was presented to this society was about two years ago, when Dr. Martin presented a case. The present patient came to the out-patient department of the General Hospital on the February 3rd last, complaining that his legs were stiff. He was in perfect health until two years ago, when he first noticed this stiffness over his legs and body; this increased at times and he had pain in his lower extremities. He was a constable in England and served during the South African War. While in South Africa he had dysentery, but apparently had never suffered from any other illness since childhood. During the past two years he has lost one and a half inches in height. Osteitis deformans, or Paget's disease, as it is called, was first described in 1877 by Sir James Paget, and it is supposed to be a chronic inflammatory infection of the bones, characterized by hypertrophy and softening. The bones enlarge, soften, and become intensely curved and misshapen, especially those bearing weight.
It is questionable, I think, whether this curving or misshape is due absolutely to weight-bearing, possibly more than this enters into the reason. As a rule, the lesions are symmetrical and general in distribution. The important point is that the bones of the lower extremities and the skull and the spine are most involved; many patients first complain that their head is becoming swollen.

Two things have been noticed. First of all, in severe cases they have eventually died of sarcoma. Whether this is coincident with or related to the disease, nobody seems to know. Secondly, some people say that syphilis may cause osteitis deformans. This has not been proved. In our case there is no history of the disease and the Wassermann test was negative. Arterial sclerosis has been noticed in patients suffering from this affection. In Dr. Martin's case the sclerosis of the arteries present may have been due to the advanced age of the patient. The patient which I present to-night is only thirty-four years of age, and yet he shows marked sclerosis, so marked that the arteries are very apparent in the x-ray plates which I show to-night. The most concise description of the lesions is that by Sir James Paget: "The disease is one beginning in advanced life usually affecting many bones, most frequently the long bones of the lower extremities, the clavicle, and the bones of the skull. The bones enlarge and soften, and those carrying waste or bearing muscular traction commonly become curved and misshapen. The disease is slowly progressive and is attended with pains in the affected bones varying in severity and usually described as rheumatic or neuralgic in character. The general appearance, movement, and posture of the patients are so alike that these may often suffice for diagnosis. The most characteristic features are the loss of height, indicated by the low position of the hands, the stooping or round shoulders, the head held vertically, the chin raised and the chest sunken towards the pelvis, the abdomen pendulous, the curved lower limbs held apart and usually with one in advance of the other; the enlarged cranium, square-like and with bosses, may add distinctiveness to these characteristics and they are completed in the slow and awkward gait of the patient." The head in this patient is not particularly enlarged, but the characteristic bosses are easily palpable.

**Discussion:** Dr. O. C. Gruner: The case we had in the Royal Victoria Hospital was undoubtedly in a later stage than the case of the present patient, showing as it did carcinomatous change in the bone. There was rarefaction of the bone produced by a conversion of the bone marrow tissue into a rather gelatinous
fibrous tissue; this increased in density and cellular looseness until the marrow was rich in fibrous cells. In our case the first swelling appeared on the radius and was made up of an excessive overgrowth of these cells, here and there producing a spindle-celled sarcoma. Later on, a swelling appeared in the upper end of the humerus and that was associated with ossification of the new growth. The sarcomatous tissue became very rich in bone trabeculae of the characteristic form, very slender and forming a close network. Subsequently, a growth appeared in the head of the clavicle associated with the same tendency to ossification. Finally, tumours appeared in the skull, and these had the structure of pure spindle-celled sarcomas. It appeared as if this change were the result of some super-added process and it was not at all certain that the sarcoma was the inevitable result of the disease.

**Paper:** The paper of the evening was read by Dr. F. W. Harvey on "Gymnastic treatment for lateral curvature of the spine." Dr. Harvey illustrated his paper by diagrams and apparatus.

**Discussion:** Dr. Fraser B. Gurd: I would like to ask Dr. Harvey whether this condition is not seen very much more often in girls than in boys?

Dr. A. Mackenzie Forbes: I was particularly glad and particularly interested to hear Dr. Harvey speak to-night on the subject of scoliosis. I do not know any subject which interests me more than does this. I have already spoken on the subject before this society this year and some of you may perhaps remember that I suggested a different form of treatment than that mentioned by Dr. Harvey. Dr. Harvey is associated with me at the General Hospital in the treatment of scoliosis and I find that the part he does in the development of the muscles, etc., is just as important as the part which I do: that is, the attempt to model the bones into their proper shape. In the treatment of scoliosis we have to consider various things. In the advanced or osseous form it is a question of trying to remodel deformed bones, and no exercise under the sun is going to remould them. This can only be done by the law of Wolff. It is most important to remember that scoliosis is not a deformity of the spine alone. It is a deformity of the whole trunk and especially of the thorax; the ribs are even more deformed than is the spine, and in our exercises and in our mouldings we must recognize that we are dealing with a deformed trunk, especially a deformed thorax. I would like to accentuate the statement that I have already made that, in spite of the fact that the deformity of
scoliosis is one of bone more than of muscle, exercises are most important. Even in advanced cases, exercises have their place. Such exercises must be instituted to loosen up and make lax the ligaments in order that we can improve the positions of the deformed bones. Again it is necessary to strengthen the muscles to maintain the improved position in which we have placed the bones, in order to correct the deformity by means of the law of Wolff.

Dr. W. G. Turner: The society should certainly congratulate Dr. Harvey on the very patient work that he has done. As he says himself, the length of time devoted to these cases is certainly striking. First of all we should congratulate Dr. Harvey on the excellent schemes which he has for estimating the rotation of the spine. I think that simple scheme of the vertebral column to demonstrate rotation is most ingenious; the method of measuring the rotation also is very creditable. I would remind the society of Dr. Tait MacKenzie's instrument, and this is much more practicable and applicable than most of the continental ones. In the first place, with regard to the rotation, those interested in anatomy might bear in mind that this fixed point of rotation usually occurs through the articular processes and, until this past year, the correction of these failed in the vast majority of cases because when we hyperextended the spine we really locked it.

Dr. F. W. Harvey: In answer to Dr. Gurd I would say that the statistics give the condition as much more frequent in girls than in boys and that is explained by the fact that girls do not take such active exercise as do boys; they sit more and are more apt to acquire malpositions.

Pathological Specimens: Dr. O. C. Gruner.

1. Pneumonia. Grey hepatization. It is unusual to find so typical a condition at autopsy. The usual forms that have been met with during the last three years have been mixed types and never exactly as described in the text-books. The specimen is from a male, aged forty, who had been ill for eleven days; the illness started after a severe cold contracted by the patient while intoxicated. The whole of the lung is converted into a solid mass looking like liver. The outer surface is covered with a fibrinous exudate which glues together all the lobes. Along with this condition there was also a change in the heart, a recent endocarditis super-added on an old lesion, while there was also a very marked mitral stenosis of the button-hole variety. The endocarditis was interesting in connexion with the causation of the disease. Whether the pneumonia had started first or not, or whether the two organ-
isms were varieties of one kind, it is difficult to say. There have been a number of similar cases of endocarditis during this winter, each associated with large vegetations.

2. The second specimen is a lung from a young man who had been ill for a long time with chronic valvular disease with recurrent attacks. This attack had been going on for some weeks and it is remarkable to see the size of the vegetations in the aortic valve. One hangs down into the ventricle and the blood adhering to it passes far down, nearly to the apex of the heart. The other cusps are involved, they had already been destroyed by ulcerative processes; and the inflammation has spread through into the muscle of the heart. This case also showed an organism of the pneumo-streptococccic variety and is of interest in that connexion. We have had three cases of this kind.

3. The next case is one of a curious form of cirrhosis of the liver, in an Italian, aged fifty, living in Canada for six years. There was no history of any previous illness, excepting a vague history of fever when he was twenty-five years of age. It was interesting to ascertain whether this was a case of Banti's disease or not. The surface of the liver is very nodular and shows increase of tissue between the lobules. The microscopic picture does not show anything like the naked eye lesion. The spleen of this case shows its surface opaque from hyaloserositis with an area of calcification in the centre. The cut surface shows increase in the trabecular tissue, and the microscope demonstrates the fibrosis throughout the organ.

4. This last specimen is from a private case of Dr. Chipman's: A young woman developed severe vomiting very early in pregnancy. The statement is that there was no albuminuria. Forced labour was induced at about the eighth month. The uterus is shown here as it appeared four days after delivery. The main features are the presence of a large thrombus in the ovarian vein on the right side; no septic change in the thrombus or in the interior of the uterus. The wall of the uterus is very firm.

The main interest in the case was in the condition of the liver. This was very much diseased and much diminished in size—it weighed about 600 grammes. The cut surface showed a very peculiar structure, the round lobular arrangement being replaced by a linear one. The original appearance has been altered because the bile has stained the whole liver tissue, while some change has occurred after the organ had been left standing. The peculiar markings around the vessels indicate decomposition at a rapid rate,
within twenty-four hours after the removal of the specimen. Originally it was quite brown and the lobules were outlined by very brilliant red lines of injection. Microscopically, the change is one of dissociation of the periphery of the lobules with increased fat. Under the microscope the outer layer of the lobules is gone and what is left stains a bright yellow with Scharlach. The central part is less damaged but is infiltrated with bile. At the very edge of each lobule are numerous growing acini.

The appearance seemed to be specially interesting in contrast to a number of eclamptic cases which we have had lately. In a purely eclamptic case the liver lobule is entirely lost. It is converted into a number of spaces of equal size. There is another form of change met with in some eclamptias, where the entire loss of lobular arrangement is due to the breaking down of the liver cells. The three different forms of liver disease related to pregnancy are rather interesting. The change in the present case is a sort of subacute yellow atrophy; the poison seems to have been carried through the portal vessels and to have destroyed the cells commencing at the periphery, a fatty change first taking place. The peripheral cells take up everything they can get, and die, and then the next layers take up the poison. Another point is that the fat in these liver cells is not an ordinary fat, but one derived from the protein of the cells; this accounts for the peculiar brownish-yellow colour of the tissue when it is fresh.

**Demonstration:** Complications attending the extraction of senile cataract, with micro-photographs, by Dr. F. T. Tooke.

**Discussion:** Dr. J. W. Stirling: We have to thank Dr. Tooke for this demonstration, it is really most instructive. I did not know that one of the specimens was to be from one of my own cases, but it is characteristic of one of the most unfortunate accidents we can encounter in cataract extraction, this expulsive hæmorrhage. It cannot be foretold, and of course results in the loss of the eye. Among the other sections, there was one of a healing wound of the cornea which was beautifully demonstrated. When the incision is made, the anterior elastic lamina retracts and the gap between the severed fibres is filled by polymorphonuclear leucocytes and epithelium, which fills in the superficial end of the opening. Later, fibrous tissue is developed from the corneal cells. On the posterior surface you can see the retracted ends of the posterior elastic lamina. The epithelium grows across this and the posterior elastic or descemal membrane is slowly replaced, whereas the anterior elastic membrane never is. In another specimen,
prolapse of the capsule into the corneal wound is seen, preventing its healing; this not infrequently gives rise to an increased intraocular tension by blocking off the angle of the anterior chamber. I regret that the lateness of the hour prevented Dr. Tooke from giving further details of his specimens.

CASE REPORT: Treatment of shortening due to recent fracture, by Dr. B. C. Patterson.

LONDON MEDICAL SOCIETY

The officers of the London Medical Society for the present year are: president, Dr. Reason; vice-president, Dr. Tillman; secretary-treasurer, Dr. Seale Holmes. At the March meeting of the society, Dr. Meek read a paper on uterine cancer, emphasizing the importance of early recognition.

ST. JOHN MEDICAL SOCIETY

At the regular March meeting of the St. John, N.B., Medical Society, Dr. F. J. Hogan gave a very interesting paper on gonorrhoea in the male. At this meeting the society received two valuable gifts: a fully equipped reflectoscope was presented by Mrs. M. A. Sheffield, and Dr. F. N. G. Starr, of Toronto, presented a bound copy of the address given by the late Dr. Bayard at Kingston in 1895, when he was president of the Canadian Medical Association.

HURON COUNTY MEDICAL ASSOCIATION

The regular quarterly meeting of the Huron County Medical Association was held at Seaforth, March 26th, under the presidency of Dr. Gunn. About twenty members attended the meeting. An address of more than usual interest was delivered by Dr. H. A. McCallum, of London, Ont., and papers were read by Dr. Gunn, of Clinton, Dr. Burrows, of Seaforth, and Dr. Michell, of Dublin. The next meeting of the association will be held at Wingham.
The following are some of the papers which will be read at the annual meeting next June.

**Section of Public Health:**

Dr. J. W. S. McCullough, Toronto: "Public Health Legislation in Ontario."
Discussion by Dr. M. M. Seymour, Regina, Dr. D. G. Revell, Edmonton, and Dr. C. J. Fagan, Regina.

Dr. C. J. Hastings, Toronto: "Modern Public Health Work."
Dr. G. C. Nasmith, Toronto: "Control of Municipal Milk Supply."
Dr. John Stewart, Halifax, will present the report of the special committee of the Canadian Medical Association on the medical inspection of schools.

Dr. R. E. Wodehouse, Fort William: "The great need of the physician's active co-operation in Public Health Work."

Symposium—"Venereal Disease as a practical Public Health Problem." Papers by Dr. Hill, London, and Dr. Clarkson, Toronto. Discussion by Professor Watson, Toronto, and others.

**Section of Laboratory Workers:**

Dr. O. C. Gruner: "The Spleen in the light of Recent Histology."
Dr. A. H. MacCordick: "On the Percentage of Fat, Protein, Total Solids, and Carbohydrates in the Heart, Liver, and Kidney in Normal and Diseased Conditions."
Dr. F. R. Miller: "Methods employed in stimulating the Cerebral Cortex."
Dr. E. J. Mullally, Montreal: Paper.
Dr. F. B. Gurd: "The Toxins of Intestinal Obstruction."
Dr. E. W. Archibald: "Ascending Infection of the Common Bile Duct."
Dr. G. Shank: "A study of a case of Splenomegaly."
Dr. C. K. Russel and Dr. J. Kaufman: "Examination of Cerebro-spinal Fluid in Tabes and the Results of Treatment."
Dr. F. B. Bowman, Hamilton: Paper.
Dr. A. H. Caulfeild, Toronto: "The Co-relation of Biological Findings and Clinical Progress in Tuberculosis."
Dr. R. G. Armour, Toronto: "Syphilis as encountered by the Neurologist."
Dr. C. G. Imrie, Toronto: "Some facts with regard to Fatty Degeneration of the Heart."

Dr. Fletcher McPhedran, Toronto: Paper.
Dr. F. B. Harris: Paper.
Medical Societies

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PUNCTURE OF THE CORPUS CALLOSUM

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THE problem of how best to give relief for the condition of cerebral compression from unlocalisable tumour is still frequently an anxious one. To the general practitioner of fifteen years ago, the idea of a palliative operation in cases of brain tumour was practically unknown. To-day the pendulum has swung somewhat to the other extreme, and the ill-informed as well as the well-informed medical man who comes upon the syndrome of headache, vomiting, and optic neuritis, immediately advises decompression without knowing very much how this measure is to be carried out, or whether the case is a suitable one. The results of decompression, when compared with those of the "folded hands" treatment of a few years ago, have been so brilliant, that expectation has mounted higher than is warranted by experience. Decompression is by no means always followed by even partial relief; too much must not be promised.

With these reservations it must be said that decompressive trephining as a palliative measure is a most grateful operation in many cases. It is now everywhere acknowledged that Cushing's subtemporal procedure is the operation of choice for the purpose of pure decompression by means of the removal of bone and the opening of the dura mater. The literature of this operation is already fairly extensive. Sometimes, however, it proves insufficient; in spite of a large submuscular hernia, the symptoms occasionally persist. In such cases the reason may lie in the coincidence of a large hydrocephalus internus, such as is known to complicate cerebral tumour not infrequently. It was experiences of this sort
that led Anton, the neurologist at Halle, in the year 1908, to propose perforation of the roof of the corpus callosum as a method likely to relieve intracranial pressure due to excess of fluid in the lateral ventricles. This procedure would create a communication between the ventricles and the entire cerebral and spinal subdural space. Anton argued that such a communication would remain permanently open on account of the current set up between the ventricles and the subdural space, and particularly so under conditions of increased pressure in the ventricles. Post-mortem examinations, indeed, soon showed the correctness of this view in, at any rate, many of the cases.

The idea was welcomed by von Bramann, of Halle, who worked out the practical surgical details. During the last four years they have, jointly and separately, published a number of articles recording their results, results which have been upon the whole encouraging. In a recent article, they give a brief report of 52 cases of which 28 were diagnosed as tumour, 18 as hydrocephalus, 3 as epilepsy, and 3 various other conditions. In 31 instances the cerebrospinal fluid was evacuated through the cannula under considerable pressure, in 20 under slight pressure. The degree of later relief did not always correspond with the measure of intraventricular tension. In 33 cases optic neuritis was present, and in 18 of these the swelling of the nerve head subsided more or less completely after the operation; in 15, no improvement was obtained. In three of these last, there was done subsequently a decompressive trephining, but without avail. These three were all cases of basal tumour.

In the hydrocephalic cases, they remark in general that the acquired condition was much more apt to be benefitted than the congenital; which, one may suspect, is only another way of saying that they had to record the unsatisfactory results to which we are all so used in our attempts to relieve congenital hydrocephalus. Three successful cures of the disease which von Bramann relates were clearly instances of fairly acute hydrocephalus in children aged 2, 4\(\frac{1}{2}\), and 7 years, respectively. The last, it is true, had begun at the third year and had become chronic. But none could be regarded as of the ordinary congenital type.

They had done the operation in three cases of epilepsy, with apparent improvement in one, and without benefit in the other two.

In most of their tumour cases, headache and vomiting were relieved more or less, as also stupor or coma, when present. Dis-
turbances of motility, such as paresis, ataxia, contractures, were often favourably influenced.

In quite a number of cases the operation was done as a preliminary measure in order to reduce pressure and render easier the later removal of tumours. No patient died as the result of the operation.

The technique of the operation is briefly as follows. On the right side, about a finger's breadth behind the coronary suture and 2 cm. from the mid-line, an opening is made with the Doyen burr, about 1'5 to 2 cm. in diameter. A slit opening is made in the dura, and care is taken to avoid any large cortical vein. Then a curved hollow cannula is pushed in over the convexity of the cortex till it strikes against the falx, which membrane guides the further progress of the cannula downwards, till the corpus callosum is reached. The instrument breaks bluntly through this structure with very slight force, whereupon the ventricular fluid is emptied, usually under some pressure. An average of 10 to 30 c.cm. of fluid is evacuated; but in cases of marked hydrocephalus as much as 70 c.cm. (over 2 oz.). Von Bramann advises enlarging the hole by pushing the cannula forwards and backwards; over what distance he does not say.

The operation is recommended for all cases of hydrocephalus which defy internal treatment and have not been ameliorated by lumbar or ventricular puncture; for all cases of tumour or pseudotumour of the brain, accompanied by hydrocephalus and optic neuritis; and finally for decompression as a preliminary measure to extirpation of tumours.

It seemed to the writer that Anton's principle was correct, and the operation has been tried in the few cases of which the reports are given below. The literature of the operation is still scanty; apart from Anton and von Bramann's reports, I can find only one article, by Rydigier of Lemberg, containing a brief account of ten cases; but doubtless surgeons are trying it out everywhere, and there will soon be a profusion of reports.

Of the four cases here related, two concerned unlocalisable brain tumour, and two hydrocephalus.

*Hydrocephalus*

**Case 1.** D. G., female infant, æt. three months; admitted to the Children's Memorial Hospital, February 2nd, 1910 (under the care of Dr. A. Mackenzie Forbes, chief surgeon of the hospital, and by him kindly transferred to the writer's care). The relatives had
noticed a rapid enlargement of the head from the age of two months on, but particularly so in the last two weeks before admission. Labour had been long (thirty-six hours) and delivery had been assisted by forceps, but the child appeared quite normal, and remained well for the first two months. There was no history of convulsions, but she "rolled her eyes a good deal" of late. In the family or personal history there was nothing of importance. She began to vomit the day before admission.

**Present Condition:** Head typically hydrocephalic and of marked grade. Circumference at parietal eminence is 50 cm.; glabella to inion is 35 cm. Child vomits everything. Cheyne-Stokes breathing of irregular type is noted. Fontanelle very tense. February 3rd—Ventricular puncture, 3 oz. removed; fluid perfectly clear; Wasserman and Noguchi negative. February 8th—Puncture of the corpus callosum done. For two weeks drainage was apparently free, to judge by the way in which the fontanelles remained lax, and by a diminution in circumference of 2½ inches. Then the hole in the corpus callosum probably closed, as fluid reaccumulated; so that I decided to repeat the procedure on the opposite side. This was done on March 3rd, with the addition of a permanent drain consisting of a thick silk wick, about the size of a lead pencil. The autopsy later showed that this was correctly placed, but failed to drain. It clearly excited dense adhesions with the falx and the brain itself. I feel that a smooth metal tube would have been better than silk, as being less likely to provoke adhesions.

There was no relief obtained. On the contrary there was excited an acute inflammatory reaction with some bleeding, and the head rapidly filled up, so that by the following day I had to aspirate again. In the next three weeks five punctures were necessary. Finally, on March 22nd, I attempted to secure drainage from the lumbar canal. Before doing so, I desired to assure myself again that the cerebral and spinal cavities were in free communication. Therefore, after the child had been chloroformed, I inserted one needle into the lateral ventricle, and another into the lumbar canal. Each needle was attached to a manometer. It was found that with the child horizontal, ventricular pressure was 340 m.m. and spinal 360 m.m. (three times normal). Now as the head was lowered or raised, the fluid in the tubes was seen to seek its level, going up in the ventricular tube and down in the spinal tube (head low), and vice versa.

Free communication being thus apparently established, I did,
on March 22nd, a laminectomy, excised a piece of dura, and inserted two drains of rubber protective enclosing several strands of silk. One of these led from the subarachnoid to the subcutaneous tissue, the other from the epidural space to the subcutis. The skin wound was closed. The latter at once became cedematous, but this all disappeared in a few hours, and no further drainage occurred subsequently. In four days it was necessary to puncture the ventricles again; and from this date, March 26th, until May 15th, the child was kept going with punctures, withdrawing on an average 8 oz. of fluid once a week. In May, however, reaccumulation began to occur so rapidly that the punctures had to be repeated every two, three, or four days. I may say that from February 3rd to May 15th, eighteen punctures in all were done, and a total of 124 oz. of fluid removed.

On May 15th I excised the right choroid plexus, upon the theory that the cause of congenital hydrocephalus is rather over-secretion from the choroid plexus than obstruction to reabsorption of the fluid. (This formed the subject of a paper read at the 1910 meeting of the Canadian Medical Association, but not published.) The child died of shock 2½ hours after the operation. The autopsy showed enormous dilatation of the lateral and third ventricles, none of the iter or of the fourth ventricle; also a large arachnoid cyst situated entirely under the tentorium, overlying, and dipping down between the cerebellar hemispheres. It seemed fair to assume that the cyst was the primary lesion, and that in its growth it had compressed the fourth ventricle and the aqueduct, thus bringing about the hydrocephalus which, upon the basis of the observation of equal pressures in ventricles and spinal canal, had been considered congenital.

At the risk of digressing, I would like to refer briefly to the question thus brought up. Upon a few occasions I have punctured simultaneously the spinal and the ventricular cavities, and measured the respective pressures on attached manometers; and have always found that the pressures varied in direct ratio with the influence of gravity, going up in the one and down in the other, according as the head was lowered or raised. This I have accepted as proof that the cerebrospinal space was open, that the water in the cerebral ventricles communicated freely with that in the lumbar subdural space; and consequently that the hydrocephalus (if such were in question) was of the congenital variety, and not due to adhesions near the foramen magnum or to blockage of the fourth ventricle or its foramina.
In view of the autopsies in this case and the next, I feel myself forced to conclude that such a reasoning may be quite erroneous. In both these cases, the hydrocephalus was caused by mechanical obstruction in or near the fourth ventricle, in the one by pressure of the cyst, in the other by gliomatosus obliteration of the fourth ventricle and iter. And yet in both I was able to demonstrate the variations in manometer readings mentioned above. I suspect strongly therefore, that the real reason for the fact that ventricular pressure rises and lumbar pressure falls when the head is put low lies, not in the collecting of extra fluid in the ventricles by gravity and loss of it in the lumbar space, but in the natural change in venous pressure under such conditions. I have found that cerebrospinal fluid pressure (lumbar) will show an excursion of as much as 100 mm. or more between forced expiration and forced inspiration, both held for ten seconds, going low in inspiration and high in expiration. This, surely, is nothing more than changes in the general venous pressure. The pressure under which the cerebrospinal fluid stands corresponds therefore with the pressure in veins adjacent to the point of puncture. With the head low, venous pressure in the cerebral veins will rise, and ventricular pressure will rise with it, and as a consequence of it; while, the lumbar region being at the same time elevated, venous pressure here will fall and spinal fluid pressure too, as a result; and this quite independently of whether there exists a block or open communication between the spinal and ventricular cavities. Experimental evidence for the correctness of this view has been furnished by Leonard Hill. This by the way.

The hollow silk wick pushed through the corpus callosum at the second operation had become densely adherent to the falx and the mesial surface of the hemisphere; it had lost its lumen and become a solid cork for the hole made in the corpus callosum. No trace of the first opening in the corpus could be discovered, but it may have been involved in the region of the second, with its adherent wick. If the first puncture had accomplished anything, it was only for two weeks; the opening must then have closed. Consequently, the procedure was a failure in this instance.

Case 2. V. D. B. æt. 2½ years. Admitted to the Royal Victoria Hospital in the writer’s service April 30th, 1911.

The child was born apparently healthy. Labour was normal. On the seventh day convulsions came on, and continued at short intervals for three months. They were never focal in type, always generalized. There have been none since. "Meningitis" was
diagnosed by attending medical men. Subsequently, the child grew very slowly; the head gradually increased to an abnormal size; mentally he did not develop at all. Recently he had taken very little food, swallowed poorly, was becoming emaciated, and had occasional vomiting. On examination it was found that the whole right side was paretic, the arm being chiefly affected. The left arm was in constant movement. The left side of the head was more prominent than the right, and the whole was typically hydrocephalic, the circumference measuring 52 cm. Babinski's sign was present on the right. No ankle clonus; knee-jerks present on both sides, not exaggerated on right. The cerebrospinal fluid was examined; the Noguchi reaction was negative, the globulin not increased. The blood pressure varied from 65 to 100 mm. Hg.

May 12th.—Operation. Puncture of the corpus callosum was done through the fontanelle on the left side. Cerebral pulsation was present and there was no marked bulging. A considerable amount of fluid escaped under moderate tension; it was apparently not measured on this occasion. Some œdema of the scalp was evident for a few days. There was a definite improvement for two weeks; the spasticity in the right arm disappeared; he took food well, and swallowed well; seemed brighter, and was not irritable as before. The epigastric and cremasteric reflexes, previously absent, reappeared. After a fortnight, however, the child gradually subsided into its former condition.

On June 16th, I measured simultaneously the pressure in the ventricle and the spinal subarachnoid spaces:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Lumbar</th>
<th>Ventricle</th>
</tr>
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<tbody>
<tr>
<td>Child horizontal—quiet...</td>
<td>100 mm.</td>
<td>130 mm.</td>
</tr>
<tr>
<td>&quot; &quot;—crying..........</td>
<td>250 &quot;</td>
<td>350 &quot;</td>
</tr>
<tr>
<td>Child's head low....</td>
<td>zero</td>
<td>180 &quot;</td>
</tr>
<tr>
<td>&quot; high............</td>
<td>130 &quot;</td>
<td>zero</td>
</tr>
</tbody>
</table>

In general, the pressure went up or down in both cavities in inverse ratio under the influence of gravity. After removal of some fluid from the ventricles, the pressure, originally at 130, came down to 85 mm. The observation demonstrates the absence of marked elevation in cerebrospinal pressure in old, more or less stationary, cases of hydrocephalus; and helps to explain the failure of drainage operations from ventricle to subdural space. In the more chronic cases, the collection of fluid in the ventricles, having distended the brain and skull to their utmost extent, ceases to
accumulate, or, at least, is added to very slowly; the fluid pressure in the ventricles may then become approximately normal, but the size of the ventricular cavities has become permanently large, incapable of contraction. Even if the ventricular fluid were largely emptied and the cranial bones compressed together so as to overlap at the sutures, the brain itself, become little more than a bag, is incapable of a corresponding reduction in size, and can do no more than collapse in folds, the ventricles remaining potentially as large as before. Under such circumstances, those of the chronic internal hydrocephalus of marked grade, the intraventricular fluid pressure is so low that it may be insufficient to force fluid from inside the ventricles and into the longitudinal sinus, as it does normally; and the establishment of a drainage opening through the corpus callosum, the general cortex, or the cisterna magna fails to accomplish drainage. Such a measure must be done early, during the acute or the advancing stage of internal hydrocephalus, while intraventricular pressure is presumably high, if it is to do good. But in the infant, it is this stage which is let pass under the diagnosis of "convulsions" or "meningitis" without a thought of operative relief. Occasionally a timely lumbar puncture will break the commencing vicious circle, and relieve meningeal symptoms almost certainly due to early hydrocephalus.

To return to the case report. During the next two months, the baby gradually failed, the organic symptoms remaining as before. It finally refused all nourishment, became greatly emaciated, and died August 25th during the writer's absence.

The autopsy report (Dr. C. K. Russel) emphasized the high grade of hydrocephalus, both of the lateral and of the third ventricles. The corpus callosum was as thin as a piece of tissue-paper. The operative perforation had apparently closed; no mention is made of it in the report. There was no external hydrocephalus. There were a number of small cysts throughout both hemispheres. At one place in the left hemisphere, approximately in the motor radiations, there was a firm jelly-like tumour, partly cystic. There was similar abnormal tissue in several situations in both hemispheres. The medulla was fairly hard, and a section about the level of the sixth nucleus showed a mass of the same greyish, jelly-like, tumour tissue, filling in the fourth ventricle completely, no trace of the latter being left; and also infiltrating the roof nuclei of the cerebellum. The fourth ventricle and the aqueduct were not discoverable, until, going forward, one reached the level of the crura where a distinct cavity began in the situation
of the aqueduct. Microscopically this neoplastic tissue was gliomatous. The pia-arachnoid was considerably thickened at the base over the lower medulla and beginning of cord.

Unlocalisable Tumour

Case 1.—P. N., a young man of twenty-one years, was admitted in December, 1911, to the Royal Victoria Hospital under Dr. Birkett's care. He was then examined by Dr. C. K. Russel, neurologist to the hospital, because of signs indicating a cerebral lesion; and on January 16th, 1912, was transferred by Dr. Russel to the writer's ward for surgical treatment.

The history was a little indefinite, but it was established that, beginning two years previously, he had suffered from a number of attacks of headache accompanied by vomiting, lasting a week or two, and with intervals of several months' well-being.

Upon examination it was discovered that he had a double optic neuritis, of three diopters on the right and two on the left side; and a slight left facial palsy of all three branches. Otherwise there were no signs that might give a clue to the topical diagnosis of the lesion, nor, it may be said, did any such sign develop in the subsequent course. His blood gave a positive Wassermann reaction, wherefore he was given inunctions and potassium iodide for nearly three weeks, but without improvement.

On January 30th it was noted that the papillœdema was increasing. Consequently, on February 3rd, Cushing's subtemporal decompression was performed. On February 7th it was noted that his facial palsy had disappeared. On February 16th he was discharged, much improved as to headache and vomiting, and with slight diminution in the swelling of the nerve head.

On March 3rd, he was readmitted. His headache had returned and was now constant; he had vomited at times; his optic neuritis again measured four right and three left. There was bulging in the right temporal region, which was markedly tense. The left facial paresis had reappeared (this was regarded as one of Collier's false localising signs).

On March 6th, a second decompression was done, and this time a puncture of the corpus callosum. The pressure in the ventricle was found to be 580 mm., about five times the normal. With the removal of 24 c.c. (6 drachms), the pressure was reduced to 140 mm. There ensued rapid relief from headache and vomiting, and the excessive temporal bulging was immediately reduced very markedly. On March 13th, he was discharged.
Since this date, the patient has been free from headache and vomiting, except for three or four periods of a few days each, during which the two areas of decompression (some bone was removed over the vertex on the occasion of the callosal puncture) would swell to a considerable degree. I think it is reasonable to consider these periods as representing recurrences of the hydrocephalus, which upon attaining a certain pressure, succeeded in reopening the hole in the corpus callosum, which may have become closed. In the intervals, lasting months at a time, he would be fairly well and the decompression areas would remain quite soft and flat. For some months past, however, he has been showing evidence of a possible frontal tumour in the way of loss of memory, careless habits, easy anger, loss of concentration, and occasional delusions. The eyes have not been examined since his last appearance in hospital, in April 1912, when there was still a swelling of three or four diopters in each eye. His vision, however, is reported to be good.

Case 2. A. F., æt. twenty-two. The history, briefly, was that since the summer of 1912 he had suffered increasingly from headache and vomiting. At the beginning of January, 1913, he found rather suddenly that he was losing his eyesight; and in a very few days he had become almost completely blind. He was admitted to the Royal Victoria Hospital in Dr. McCræe's service on March 11th, 1913. Upon thorough examination of the nervous system, no clue could be got as to the situation of the tumour. There was a double choked disc with four diopters of swelling in each eye. The left eye was almost completely blind; in the right, vision was so impaired that he could not count fingers, though he could see dimly the hand held up before him. The temporal field of his retina was practically blind; the nasal field gave him what vision he had. A later skiagram suggested some destruction of the clinoid processes. There were no signs of dyspituitarism.

On March 12th, he was transferred to the writer's service, and on March 13th a callosal puncture was done through a fairly large osteoplastastic bone opening. Clear yellowish fluid under considerable tension (not measured) was evacuated, in amount about 12 drachms. The specimen was unfortunately lost, but its appearance suggested old haemorrhage.

From the patient's rather sudden loss of vision, the condition as above described of his fields, the skiagram, and the finding of fluid suggesting old haemorrhage in his ventricles, one may suspect
that the situation of the tumour is basal, possibly near or in the pituitary, possibly projecting into the lateral ventricle.

The effect of the callosal puncture on the headache and vomiting was immediate and marked. To the present date (May 10th, 1913), he has had no further pain or vomiting. The swelling of the nerve head, however, had in two weeks shown so very little subsidence, that it was considered advisable to give him more intracranial room. Accordingly, on March 26th, Cushing's subtemporal decompression was done on the right side. This seemed to give the extra space needed, as within a very few days the optic swelling had almost quite subsided, revealing, however, the greatly-feared secondary atrophy. The boy remains permanently blind. At the present date, it is clear that the tumour is growing rapidly. The osteoplastic flap over the vertex is being lifted more and more, while the subtemporal bulging is becoming more pronounced. There are still no signs of localising value.

Conclusions

1. In these two cases, it was evident that neither one of the two methods of decompression was in itself sufficient to get the best results. Each in turn had to be supplemented by the other. In the first, the recurrence of headache, vomiting, and optic neuritis after the subtemporal craniotomy forced one to the callosal puncture, which proved sufficient. It might perhaps have been sufficient of itself if done primarily, as the case is probably one of hydrocephalus chiefly. In the second, the failure of the callosal puncture to bring about subsidence of the optic neuritis forced one to add the subtemporal operation, which was successful. In this case, to judge from the subsequent course, neither operation alone would have been sufficient.

2. I am inclined to think that callosal puncture gives promise of being a satisfactory operation for decompression in many cases of tumour, especially in the presence of a complicating hydrocephalus. It is, however, not easier to do than the subtemporal operation, unless one is content to go at it a bit blindly, as von Bramann recommends, through a small opening, and run the chance of breaking large cortical veins or the lacunæ outside the longitudinal sinus. I cannot yet bring myself to do without a good exposure in this operation.

3. In obstructive hydrocephalus of high grade in the infant, (two cases) callosal puncture proved temporarily of slight benefit, but ultimately failed to relieve the condition.
4. I would like also to call attention to the evidence here afforded that simultaneous lumbar and ventricular measurements of cerebrospinal fluid pressure cannot inform us certainly concerning the patency or non-patency of the communication between the ventricles and the spinal subarachnoid space.

BIBLIOGRAPHY


The following is the list of candidates who have graduated in medicine this year from the Western University: Archie T. Laird, Blenheim; Frederick H. Bowen, London; Geo. A. Smith, Toronto; Thomas W. Moore, Listowel; Lorne Faunt Jones, London; Alfred T. Turner, Carlingford; Allan M. Yates, Hamilton; Thomas Cuddy, Strathroy; William J. Aikenhead, Brucefield; Richard McAllister, Fernbank; Leslie Roy Aiken, Mandaumin; Charles Hulse Brereton, Bethany; Frank W. Overholt, Hamilton; Cecil H. Edmunds, Arkona; Alexander Muterer, Ingersoll; William Hambly Avery, Strathroy; Robert M. Luton, Mapleton; Charles A. Harris, Lakeside; Lee Elliott, St. Thomas; L. Kershaw Poyntz, Toronto; J. Thornley Bowman, London; C. E. McDonald, North Bay; Clarence F. Wright, London; William John Scott, London.
Gold medalist, J. Thornley Bowman, London; silver medalist, Lee Elliott, St. Thomas.
SOME RECENT WORK ON ACCESSORY FACTORS IN NUTRITION

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UNTIL a few years ago our conception of the value and properties of foodstuffs in relation to nutrition were almost entirely governed by ideas of energy values and digestibility. Within the last decade, however, observations have been accumulating which tend to dissipate the narrowness of such views and it seems probable that ere long our knowledge of the nutritive value of foodstuffs and of proteins in particular will be placed on a much firmer foundation than heretofore.

The stimulus to study afresh the problems of nutrition undoubtedly came from the rapid growth in our knowledge of the chemical nature of the proteins which occurred about the end of the last and the beginning of the present century. Coupled with this, and impossible of exact study without the knowledge furnished by a detailed investigation of the structure of the proteins, was the radical change in our notions of the work done by the digestive ferments of the alimentary tract. It has long been known that in vitro the combined action of the ferments trypsin and erepsin was capable of splitting up the protein molecules into their simplest components, the amino acids. The work of London and his colleagues has now shown that this action also takes place in the living animal within the ordinary periods of digestion, and furthermore, the most recent investigations of Folin and his pupils have shown that it is in the form of simple amino acids that the proteins are eventually absorbed into the blood stream and so passed on to the tissues.

It was in the early days of experiments on the nutritive value of the proteins that the fact was discovered that gelatine cannot entirely replace other proteins in any adequate diet, but the reason was not furnished until we learned that it did not contain in its molecule, either of the amino acids tyrosine and tryptophane, which are present in most of the natural proteins. The next main advance in our knowledge of the nutritive value of proteins was furnished by experiments of Henriches and Hansen.
These observers attempted to determine whether casein, when completely digested by the combined action of the ferments trypsin and erepsin, would keep animals in nitrogenous equilibrium, that is, maintain them in health, without loss of body protein. This they succeeded in doing with white rats in experiments lasting over twenty-five days, the animals of course receiving a sufficient amount of carbohydrate and fat along with the digestive products of the protein. On trying the same experiment with casein which had been split up into its constituent amino acids by means of sulphuric acid instead of the alimentary digestive enzymes, it was found that the animals could not be kept in nitrogenous equilibrium. Here then was some difference in the nutritive value of the two digestion products which had previously been thought to be the same. On examining the two products, Henriques and Hansen found that tryptophane was present in the trypsin-erepsin digest, but was absent from the mixture obtained from the casein by the action of acid. This work tended to show then, that the amino acid tryptophane must be present in any protein that is to be adequate for nutrition. A year later, it was shown by Willcock and Hopkins that there are other indispensable constituents of the protein portion of a diet besides tryptophane. These observers attempted to maintain mice on the protein zein of maize, which contains no tryptophane. The mice died after short periods, but on adding tryptophane to the diet, although the period of life was prolonged, the mice gradually declined and eventually died. Since zein is deficient in the diamino acid lysine, it is possible that the decline, even when tryptophane was given, was due to the deficiency of this diamino acid. Interesting experiments on the ability of different diets to maintain life were published by Stepp in 1909. Stepp proved that mice could be kept in good health for months on a rice preparation (protamol), made into cakes with milk, and young mice also grew well on this diet. If, however, the food was thoroughly extracted with alcohol and ether, the mice died in less than twenty days. The addition of the substances extracted by the alcohol and ether did not bring back to the extracted food its previous nutritive value, probably owing to the destruction of the active substances in the process of extraction. The addition of small amounts of egg yolk, however, brought back to the diet its full nutritive efficiency. In an attempt to restore to the food its active principles, various substances such as butter, triglycerides of oleic, palmitic and stearic acids, and lecithine and cholesterol were added without success. An alcohol-
ether extract of milk powder or the addition of pasteurized milk made the food once more effective in maintaining health. It is interesting to note that even milk which had been boiled for half to one hour was successful in bringing back to the diet its former nutritive powers in a few cases, but not in all. These experiments of Stepp make it appear that some substance, or substances, soluble in alcohol and ether are indispensable components of a diet if it is to maintain life, and they show that the active substances are not lecithine, cholesterine, or the simple fats.

In 1909, Osborne and Mendel, at the Connecticut Agricultural Station, commenced a long series of experiments on the nutrition of white rats, more especially with regard to the nutritive value of single proteins. Their criticism of the work of the previous investigators just described, is based quite justly on three main points: (1) none of the experiments were of sufficiently long duration to determine whether, in the apparently successful cases, the diet was really adequate to maintain health during a considerable span of the animal’s normal life; (2) no record is given of the food intake, and consequently in the unsuccessful experiments it is not possible to decide whether the animals were receiving enough calories to cover their requirements; (3) in such small animals the maintenance of nitrogenous equilibrium as used by Henriques and Hansen is not the best criterion of the efficacy of a diet, but much rather should its power to maintain weight in adult animals be made use of.

Starting out with these considerations in view and devoting their attention at first to the maintenance of adult animals, Osborne and Mendel were able, after many unsuccessful trials, to find a diet containing only a single protein which would keep rats at approximately constant weight for a considerable period of time. By using a diet consisting of casein, cane sugar, starch, lard, agar-agar, and a salt mixture, rats were kept at constant weight for one hundred and sixty days. The casein was then gradually replaced by the wheat protein glutenine until this substance became the sole protein in the diet, and a rat was kept on this mixture for two hundred and seventeen days. These results indicated that monotony or non-palatability of the diet does not play as large a part in such feeding experiments as was previously thought. Although these experiments were apparently successful in demonstrating the nutritive efficiency of single proteins, they were not really so, as with more prolonged trials it was invariably found that the animals began to decline and, unless a change of diet were instituted, death resulted.
It was observed that the animals in these experiments became koprophyagists, and the conclusion was drawn that feeding with the fat-rich diets which were being used, might possibly have brought about a change in the intestinal flora, which in turn might have some influence on the nutritive efficiency of the food. In order to test the hypothesis, faeces from rats living on a mixed diet were given in small portions twice a week to the rats living on the restricted diet and in almost all cases the decline was stopped. Sterilization of the faeces before administration was tried in order to determine whether the success of faeces feeding was due to the bacteria introduced or to other substances. It was found that sterilized faeces were not so effective in stopping the decline as fresh faeces, but sufficient trials were not made to make this certain.

The supreme test of the adequacy of a diet is that it will promote normal growth in the young animal. Osborne and Mendel, in the course of their experiments, very soon discerned that a diet which was satisfactory for the maintenance of weight was by no means satisfactory for purposes of growth. They therefore turned their attention to the factors involved in the growth of young animals. Until a few years ago, from the knowledge at our disposal, there appeared to be no reason to assume that a young animal would not grow if it were given a sufficient amount of protein, carbohydrate, fat, and salts, due consideration being paid to the large amounts of such substances necessary to the young animal, as compared with the adult, for purposes of increase of body weight. We are coming to see, however, that certain essential factors are not considered in this conception of a perfect diet.

Growth is affected by two factors,—nutrition, and what we may call for want of a better term, the growth impulse or growth potential. Given the requisite nutritive conditions, the growth potential determines the rate at which the young animal will grow during any given period. It is probably best measured by the percentage increment in weight undergone by an animal during a stated time. Such measurements show that in man, during the pre-natal period, the percentage increment in weight per month falls from 600 per cent. in the fourth month to 230 per cent. in the fifth, 130 per cent. in the sixth, and continues to diminish until at birth it is 20 per cent. per month. This means at birth an annual increment rate of 240 per cent. During the first year the annual percentage increment is 200 per cent., but this has dropped to 20 per cent. by the end of the second year; thereafter it continues to decrease to about 0·1 per cent. at the thirtieth year.
There is a slight increase in the growth rate measured by this method at about the time of puberty. The limits of growth are determined by heredity and are not altered by the most abundant diet, though obviously they may be changed by insufficient diet. The growth impulse, however, regarded as an inherent property of the young animal, is to some extent independent of the amount of food taken, as experiments by Waters and Aron indicate. Waters maintained young cattle at a constant weight for twelve months by insufficient feeding and noted that, although there was no change in weight, the animals gained 10 per cent. in height, 20 per cent. in the length of the head, and 9 per cent. in the depth of the chest. Along with these increases, there was a decrease of 12 per cent. in the width of the chest. Aron's experiments carried out with young dogs from the same litter gave similar results. One set of the dogs was given the amount of food requisite for complete nutrition; the other set was underfed to just such a degree that the weight remained constant. Under these conditions the underfed animals continued to increase in width and height until their reserve substances were used up, after which there was a second period during which no growth took place but only maintenance of size. An examination of the percentage of dry matter in the various tissues after such a period of underfeeding showed that the brain, central nervous system, and bone had been most protected from loss, but that there was a large increase in the percentage of water in both blood and muscle. Aron concludes from these results that the growth impulse resides in the bones and that other tissues only increase in size because of the growth in the bony structures. One interesting point which was not determined was the relative evolution of the sex organs in the two cases; it was noted, however, that the underfed dogs had a cry like young dogs as opposed to the deep-toned bark of their brother animals. Measurements made by Fleischner of the weight and height of normal and underfed infants have also brought out the fact that growth is to some extent independent of nutrition, since the underfed infants had a greater height to weight ratio than well nourished infants of the same weight. Whereas the animals used by Aron and Waters in their experiments showed growth on diets containing an insufficient amount of energy, the experiments carried out by Osborne and Mendel on young rats show that no growth takes place even when the calorific value of their food is abundantly sufficient for purposes of growth. For instance, a young rat taking glutenine as the sole protein together with a sufficient amount of carbo-
hydrate, fat, and salts showed no growth during one hundred and twenty days. In animals such as this one the ratio of length to weight was the same as that for normal animals. Other rats kept on gliadine as the sole protein in their diet remained without growth for fifty days, although the energy value of the food given was quite adequate for growth. On placing these animals on mixed food, growth immediately began and continued at the normal rate. These experiments indicate very clearly that there are qualitative factors in diet which influence growth, and further, that the growth potential is not influenced by fifty days' stunting, since animals stunted in this way began to grow at the normal rate for their age when given ordinary mixed food. The question as to whether such stunting, either by underfeeding or by unsuitable feeding, has any influence on the intelligence of the animals is not yet determined. Analysis of the brains of the rats stunted by Osborne and Mendel showed that they contained a larger percentage of dry matter than was normal for their age. This has also been shown to be the case by Donaldson in underfed rats. Whether such animals are more or less intelligent than they should be for their age is difficult to determine; but Donaldson has shown that if the food is made more difficult of access the underfed rats learn how to get it just as quickly as normal animals. In man, a statistical enquiry as to the relation of general intelligence to malnutrition in the early years of life might provide the requisite information in this matter. Superficially it might appear that the proverbial "cuteness" of the street arab of our large cities might be due in part to under-feeding.

Being unable to obtain growth in young rats by giving food containing casein as the only protein, and taking into account the fact that casein is their chief source of protein in a diet of milk powder, starch, and lard, on which they grow perfectly, Osborne and Mendel turned their attention to the non-protein constituents of the diet. A powder was prepared by separating the fat and proteins from milk and evaporating to dryness. This product, which they term "protein-free milk," and which contains at the most 1.7 per cent. protein, was used instead of the artificial salt mixtures previously given. The adoption of this mixture as an adjuvant to previous mixtures of carbohydrate and fat with a single protein proved an unqualified success. The use of it along with many single proteins has given normal growth. In cases of maintenance experiments with adult rats in which decline had begun, the decline was immediately arrested, and maintenance again established. In fact so certain were the results it yielded, that if the use of any
single protein together with "protein-free milk" did not give adequate growth or maintenance, as the case may be, it was assumed that the protein itself was the defective constituent of the diet. By the use of this adjuvant to diets containing only one protein many interesting facts concerning the nutritive value of the separate proteins have been established. The proteins can be divided into two groups; those adequate for growth and those inadequate for growth. The chief proteins in the latter class are, gliadine, the alcohol-soluble protein of wheat; zein, one of the proteins of maize; and gelatine. Of these three, gliadine is adequate for maintenance whereas zein and gelatine are not, presumably because, unlike gliadine, they contain no tryptophane. Another important fact established is that, fed on casein, although it does not contain the amino acid glycocoll, rats will grow quite normally. Edestine, the protein of hempseed, is phosphorus-free but is quite as successful in promoting growth as casein, thus proving that the animals can synthesise all the organic phosphorus compounds they require. Further, Osborne and Mendel have been able to show that rats will grow perfectly on a diet containing no fat. Two diets were used in this experiment, one containing casein, sugar, starch, and "protein-free milk," and the other, edestine, sugar, starch, and "protein-free milk." A further important point which these investigators claim to have established is that the "protein-free milk" may be replaced by an artificial mixture of the various salts it contains in about the same proportions. Using this salt mixture along with casein, sugar, and starch, but without any fat in the diet, normal growth was obtained for one hundred and sixty days. The presence of fat in the diet is thus dispensable for purposes of growth.

One remarkable experiment was carried out which substantiates the results previously obtained with the protein, gliadine. Two adult rats, male and female, were maintained for one hundred and fifty days on a diet containing this substance as the only protein. They were then paired and a litter of four resulted. At the end of the suckling period, in which the young grew normally, three of the four were placed on a mixed diet and continued to grow well. The fourth was placed on the same diet its mother was receiving, i.e. one containing gliadine as the sole protein, and it immediately ceased to grow. It was evident therefore, in this case, that out of the gliadine the mother could synthesise something necessary for growth since the young grew normally during the suckling period, whereas the young rat was unable to synthesise this essential substance, since it ceased growing as soon as it was placed on the
gliadine food. Nothing could be more convincing than this of the importance of accessory factors in nutrition. That such factors exist we can now have little doubt, but exactly what they are remains for future experiment to show.

Because of the immediate success in production of true maintenance and growth following the use of "protein-free milk" in their diets, Osborne and Mendell lay stress upon the necessity for having the requisite salts in the right proportions if any diet is to prove satisfactory. This view they base upon their use of the "protein-free milk," and in later experiments upon the use of a pure salt mixture made up to imitate as nearly as possible the composition of the salts in the "protein-free milk," since with this latter mixture they have obtained normal growth in young rats. An altogether new light has been thrown upon the question by Hopkins, who last year published experiments on the growth of young rats when fed with food substances which had been purified by thorough extraction with alcohol. The protein used in these experiments was casein, the carbohydrates starch and cane sugar, the fat was lard, carefully freed from tissue elements, and the salt mixture was obtained by imitating the ash of mixed food upon which the rats grew normally. Due regard was paid to the caloric intake. A group of six rats placed upon such a diet grew slowly till the thirteenth day, then declined, and by the twentieth day five of the six were dead. A control group of six rats placed on the same food but receiving in addition 2 c.c. of milk each per diem grew quite normally and had doubled their weight before the twentieth day. In a second experiment, using the same "pure" diet, the set of rats receiving the small addendum of milk grew quite normally whereas the other set declined. On the eighteenth day the diets were reversed. By the twenty-fifth day the previously growing set had ceased to grow whereas the set which had begun to decline was growing quite well. In other experiments in which the casein was not specially purified by very thorough extraction with alcohol, slow growth was obtained but was not so rapid as that of rats receiving the same food with the addition of 2 or 3 c.c. of milk per day. In reply to experiments by Osborne and Mendell in which casein extracted with ether was used, and produced growth, Hopkins and Neville have recently published an account of the feeding of twenty rats upon the same diet with the exception that the casein and starch were thoroughly extracted with alcohol and the lactose used was also specially purified. In all the rats growth rapidly ceased, then followed a period of decline, and by the
fortieth day fourteen of the animals were dead. To six of the rats, after their weight began to diminish, 2 c.c. of milk per day were given, when the decline ceased and normal growth was soon established.

From these experiments we may conclude with a fair degree of certainty that the growth of a young animal is dependent upon the stimulating action of some active substance, or substances, which the animal is unable to synthesise during the early period of its life, and which therefore must be furnished in its food. In the case of suckling animals the active principle is present in the mother’s milk. That it is also present in the yolk of eggs is likewise probable, since Socin as long ago as 1891 showed that mice may be maintained for several months on this food alone, and McCollum has also shown that young rats grow well on egg yolk and distilled water. But the active substances must have a wider distribution, for Hopkins in his experiments on the growth of rats on “pure” foods noted that vegetable extracts, and also an alcohol and ether soluble substance from yeast, were very successful in promoting growth. How such substances act is at present only a matter for speculation, and probably will remain so until their isolation is accomplished. We already know that certain of the ductless glands have a marked influence on the growth process, and it may be that these glands are stimulated by the active substance or that it forms an essential part of the raw material from which their secretion is manufactured. But it is also conceivable that the action is a direct one on the tissues themselves.

That the processes of growth are intimately related to dietetic factors is a new conception which will have to be taken into account in future studies on animal nutrition. We have long been aware of the relationship between certain diseases,—notably rickets and scurvy,—and faulty dietetic conditions, and more recently the disease beri-beri has been added to the list. Beri-beri may be produced in birds by a diet of polished rice, the prominent feature of the disease being a peripheral neuritis. If the rice polishings are given along with the polished rice, then the birds remain healthy. Funk has succeeded in isolating from the rice polishings an active substance, provisionally named “vitamine,” minute amounts of which will cure the peripheral neuritis produced in birds by a diet of polished rice. This disease therefore has been shown to be dependent for its production, not on gross errors in the diet such as an incorrect relation between the amount of protein, carbohydrate, fat and salts, but upon the absence from the food of minute amounts of some specific substance. Since lime juice is well known to cure
scurvy, it does not appear unlikely that its curative properties are due to the presence in it of some specially active body, but that this is not "vitamine" has recently been shown by Funk. Such work as has already been accomplished in this comparatively unexplored field enables us to look forward with confidence to a not too distant future, when our knowledge of the factors concerned in correct nutrition will provide a suitable basis on which a sound practice of dietetics may be built up.

Henriques and Hansen, Zeits. f. physiol. Chem. xliii, 417; liv, 169; lx, 105.
Willcock and Hopkins, Journ. of Physiol., xxv, 88.
Hopkins and Neville, Biochem. Journ., vii, 97.
Funk, Journ. of Physiol., xliii, 395; xlv, 75; Biochem. Journ., vii, 81.

* An excellent bibliography is to be found in this publication.

A draft of a proposed agreement between the city of Calgary and the hospital board was submitted to the city council on March 25th. By this agreement a board of control is to be formed, which will govern all hospitals except private ones, until such time as the city shall have spent $300,000 on permanent hospital property. If the board then considers it advisable to make a change in the administration of the hospitals, the matter will be submitted to the ratepayers and a municipal hospital established or not as the voters may decide. In this connexion a legal difficulty has arisen as to whether the hospitals have the right to transfer their property to the city. This question is now under consideration. The board of control will consist of three subscribers, four medical men, and six citizens; but the latter are to be appointed by the city council and not elected by vote.
TUBERCULOSIS OF THE GENITO-URINARY SYSTEM FROM THE GENERAL PRACTITIONER'S STAND-POINT

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The subject of tuberculosis of the genito-urinary system is one which has received comparatively little attention in comparison with its sister disease in the lungs. The latter has been written about and studied for many centuries, Hippocrates, during the fourth century B.C., having described a condition of the lungs which was undoubtedly tuberculosis, and Areteus, in 250 B.C., along with many Greek writers, having discussed it. Celsus at the beginning of the Christian era recommended climatic treatment, and Galen in the second century advised patients suffering from this lung affection to go to a dry climate and make milk their chief diet. There was practically nothing of importance written from that time until 1650, when Franciscus Sylvius gave the first accurate description of the tubercle in the lung. In 1845, Addison gave the first histological description of the tubercle, and in 1882, Koch discovered the tubercle bacillus. Thus it is to be noticed, that in spite of all this work done on tuberculosis of the lung, the genito-urinary system was overlooked until the beginning of the nineteenth century, when Bayle compared the tubercles in the lung with those in the kidney. However, it was not until about twenty-five years ago that anything was really known about the condition.

Those who have been following medical literature during the past ten years must have been impressed with the number of articles which have been written on certain aspects of the subject, for example, the early pathology and the expert method of diagnosis. The latter consist of radiography, cystoscopy, ureteral catheterization and the many tests of the functional capacity of the kidneys. The advance in these methods is extremely interesting and their importance cannot be overestimated as they have given us an accurate knowledge of this disease and have showed
where the older writers erred. My reasons for writing another paper on this subject are twofold. In the first place this is an attempt to bring the knowledge obtained by these means down to the terms of ordinary clinical methods, and in the second place to give this serious disease its proper relation to other conditions which tend to simulate it.

Etiology: The immediate cause of tuberculosis of the genito-urinary organs is the same as that of any other organ, namely, the tubercle bacillus. The predisposing causes are two: injury and inflammation. In the case of the kidney and bladder, inflammation is the chief factor, whereas in the case of the testicle injury plays an important rôle. Here I might point out that cases of persistent pyuria following an attack of gonorrhœa should be looked upon with suspicion and a careful examination of the urine made for tubercle bacilli. As to the age in which tuberculosis occurs, I might say that no age is exempt, but the great majority of cases occur between the ages of twenty and thirty. In a series of 138 cases in the Royal Victoria Hospital, 118 occurred in those under forty years of age. The relation of male to female is rather interesting from a historical point of view. The statistics of the pathologists and surgeons differ considerably. The pathologists found a larger percentage of males in the autopsy records, whereas the surgeons found the reverse in the operative records. Our statistics show that out of a series of 84 cases in which a diagnosis was made of tuberculosis of the kidney or bladder, 54 occurred in males and only 31 in females. Occupation has apparently very little effect on the disease, and what is very remarkable is the fact that more of our cases came from the country than from the city.

Pathology: When we consider the subject from a pathological standpoint we are at once brought face to face with some very interesting problems. In the first place the question arises as to how the tubercle bacillus reaches these organs, and in the second place which portion of these organs is first attacked. Let us first consider the path by which the bacilli reach the kidney. Here let me explain a term which is rather confusing, namely, "primary tuberculosis of the kidney." The word primary does not apply to the body as a whole but to the genito-urinary system, as there is practically always a lesion in some other part of the body which antedates that in the genito-urinary organs.

When the subject first came into notice everyone believed that the primary seat of the disease was in the bladder and that the kidney was secondarily infected. The reason for that error
is quite obvious when one considers that the surgical treatment of tuberculosis of the genito-urinary tract was practically nil, and that the specimens examined were those recovered at autopsy which naturally showed extensive lesions of the whole tract. Then again, the majority of symptoms are referable to the bladder, and as there were at that time no adequate methods of examining that organ, it was concluded that it was there the disease originated. With the advent of the newer methods of examining the bladder and kidneys, this idea was found to be erroneous. At the present day it is believed that the majority of cases of tuberculosis of the urinary system originate in the kidney and secondarily involve the bladder. I might even go farther and say that I believe that tuberculosis of the whole genito-urinary system originates in the kidney and secondarily involves the bladder, prostate, seminal vesicles and testicles. This statement presupposes that all tuberculous infections of the kidney are descending. However, an ascending infection may take place in the second kidney, which was supposedly healthy, when an obstruction to the outflow of urine from the bladder takes place, or its walls become extensively diseased. In the case of the testicle, I believe that in the great majority of cases the disease is secondary to that of the prostate or seminal vesicles, which, again, is secondary to primary disease of the kidney. At the present time I am bound to admit that occasionally the epididymis becomes primarily involved, the infection being carried there through the blood stream.

Let us now turn to the second question and consider at what point in these organs the disease originates. In the case of the kidney the small blood vessels come off at right angles from the larger ones and finally break up into glomerular coils. As a result of this peculiar construction the bacteria may be arrested at either of these points and there form tubercles. If the bacilli succeed in passing these points they may become arrested in the loops or collecting tubules; this latter form is known as the excretory type of tuberculosis. There is a rare type which is worth noting, viz., papillary ulceration described by Albarran. The end result of the tubercles is the same as in other organs, a number of them coalesce, break down, and form caseous masses. In some cases they are scattered here and there throughout the kidney, whilst in others they are situated in one or other of the poles. Sooner or later some of these masses burst into the pelvis producing a pyelitis and ureteritis. In those cases in which the ureter becomes early involved, or a large plug of caseous material blocks the lumen, the
whole kidney becomes converted into a caseous mass enclosed in the kidney capsule. Healing of a tuberculous lesion of the kidney has rarely been demonstrated, but it is possible that some of the old scars found in kidneys removed at autopsy may be the end result of small tuberculous lesions.

Tuberculosis of the bladder originates in two ways: first as submucous tubercles, and secondly as a graft on an injured surface. The tubercles later break down and burst through the mucous membrane leaving the typical punched-out ulcers.

In the case of the testicle the lesion always originates in the epididymis and usually in the tail. Here the tubercles follow the same course as in other organs.

**Symptoms:** We will leave now what might be considered the scientific side of the subject and turn to the practical side. This part of the subject may be divided into the signs and symptoms of genital tuberculosis and urinary tuberculosis. In the male the genital form can be detected with comparative ease, whereas the urinary form presents far greater difficulties in diagnosis. We will therefore for the present turn our attention to the latter form. At the outset I wish to lay great emphasis on the necessity of careful history taking in all urinary cases, as I believe that in the majority of cases a diagnosis can be reached by that means. At the present time when there are so many expert methods employed as aids to diagnosis we are losing sight, both in teaching and in practice, of the importance of the old clinical methods. Then again, the reason that we cannot interpret symptoms aright, is that we tend to collect them indiscriminately, and do not give to each its proper value. How then is it possible to say which symptom or sign is the most important? This should be done by leaving out of consideration those symptoms and signs which are of comparatively recent date and going back to the earliest symptom or sign noticed. This symptom or sign is the one which is of the greatest importance.

In this relation let me cite briefly a case which came under my notice during the past year. The patient, a man sixty years of age, came to the hospital complaining of marked frequency of micturition which was accompanied by severe pain. Examination of the urine showed it to be extremely dirty. The right kidney was markedly enlarged to palpation and was distinctly tender. The cystoscopic examination showed an enlargement of the prostate, with chronic cystitis but no ulceration of the bladder. The skiagraph revealed a uric acid calculus in the pelvis of the kidney.
To all appearances this was a case of calculus pyonephrosis. However, when we went back in the history to the commencement of his symptoms, which was twelve years previous, we found that during the first two years he had only one symptom and one sign. The symptom was frequency of micturition and the sign pus in the urine. Upon these two a diagnosis was based of tuberculosis of the kidney with secondary stone formation, and this diagnosis was confirmed at operation. I consider this symptom and sign as pathognomonic of tuberculosis of the kidney. In our series of forty-four definite cases of renal tuberculosis, frequency was present in all the cases and was an early and prominent symptom. It is always present at night (unlike that of vesical calculus); it is only slightly increased by exercise, and then only after some secondary condition has supervened, such as ulceration of the bladder. In the early stages this frequency is usually unaccompanied by any other symptom; however, very shortly a burning is felt in the urethra during micturition, and later some pain at the tip of the penis at the end of the act. These are the symptoms which give rise to the impression that the seat of the trouble is in the bladder and therefore a diagnosis is usually made of cystitis. The term cystitis has been and is being used too indiscriminately, and for that reason cases are being treated for a long time as if the bladder was the seat of the disease, when in reality the condition was one of renal disease. Let us remember that cystitis has definite causes and that in men under forty the causes are few in number.

In order to fix our attention on the important symptoms and signs let us next consider the urinary findings, as they present the next important link to diagnosis in the early stages of tuberculosis. The most important pathological element is pus. In the early stages of the disease this may be microscopic in amount, and is due to the irritation of the kidney produced by the tubercle bacillus. Very shortly the pus becomes macroscopic, this being due to the tubercles breaking into the tubules, or to a cavity having ulcerated into a calyx.

Having considered the pathognomonic symptoms and signs of the disease let us turn to a brief consideration of those which might be designated as secondary; the first of these is pain. This is a very variable symptom in so far as it is referable to the kidney region, and when it does occur, it may vary from a dull ache to the acute pain of renal colic. In our series of forty-four cases, it was only present in this region in fifteen. There is, however, another situation in which pain occurs sooner or later in the course of the
disease; this is in the urethra during or at the end of micturition, and is burning in character.

Another symptom which is fairly constant, occurring in thirty out of the forty-four cases, is haematuria. This symptom is again very variable in character, as sometimes blood will occur intimately mixed with the urine, whilst at other times it will show up as a few drops at the end of the act of micturition. It is very rare that any great quantity of blood is passed or that the bleeding lasts for any length of time.

As to the general examination of the patient, I may say that in the early stages this gives, in the great majority of cases, a negative result. This is the striking feature of the disease, that, whereas there is this nocturnal and diurnal frequency and pus in the urine, there is an absence of any other symptom or sign. In the later stages the patient may have the general appearance of a man suffering from tuberculosis in any part of the body. If he has reached the stage in which the frequency and pain on urination is extreme, his expression will be haggard and drawn, and his general condition will be worse than the disease itself would account for. Palpation may elicit tenderness in the loin and at times a mass can be felt. However, one must not jump at the conclusion that because a large kidney is felt on one side that that is the kidney which is diseased. On the other hand it may be the healthy one which has hypertrophied in order to compensate for a destroyed kidney on the other side.

The majority of cases can be diagnosed without going any further, but if after a careful investigation of the patient a positive diagnosis seems impossible, then there remains the examination of the urine for tubercle bacilli, and an examination of the bladder by means of the cystoscope. The first should be done by drawing off the urine with a catheter in order, as far as possible, to avoid contamination by the smegma bacillus. Next let me say a word about the cystoscope. Although this is classed among the expert instruments, yet at the present day it is a practical instrument in the hands of any practitioner who can pass a sound. I mean by that, that it is practical in so far as determining whether or not a tumour or stone exists. In the case of tuberculosis the picture varies with the stage of the disease. In the early stage only congestion of the trigone may be noticed; later small white spots in the vicinity of one or other ureter can be made out; still later definite ulceration of the bladder is quite apparent.

At this stage let us consider briefly the two conditions which
must be differentiated from tuberculosis, viz., renal calculus and vesical calculus. In the first place let me correct an error which is very prevalent, that is, the idea that tuberculosis of the kidney is a rare disease, much rarer than either of the other conditions. In reviewing the number of cases in the Royal Victoria Hospital during the past eighteen years which were diagnosed as tuberculosis of the kidney or bladder, I find there were 84 cases as against 86 of vesical calculi and 75 of renal calculi. This does not include a number of cases which were probably tuberculous but were not definite enough to record. On account of this erroneous idea the majority of practitioners consider the condition as one of calculus, and only after excluding by all the means at their disposal, that possibility, do they think of tuberculosis. In this way they frequently waste a great deal of valuable time and often do considerable injury to the patient.

Let me reiterate the statement that frequency of micturition, occurring at night, is the earliest and most prominent symptom in tuberculosis of the urinary tract. Whereas, in the case of stone in the bladder this nocturnal frequency only occurs when some complication, such as hypertrophy of the prostate or a very severe cystitis, is present. In the case of renal calculus it never occurs. Pain on the other hand, is insignificant in the early stages of tuberculosis and is nearly always situated along the urethra and at the end of the penis. In vesical calculus pain at the end of the penis or at the neck of the bladder, is the most prominent symptom. Another point of interest is the difference in the age of patients suffering from bladder calculi and those suffering from tuberculosis. Out of the 84 cases of tuberculosis of the bladder or kidney, 73 were under forty years of age, whereas, in the series of 86 cases of vesical calculus 61 were over forty years of age.

When a diagnosis of tuberculosis of the bladder has been established, we at once say to ourselves, this must be primary in the kidney. Then it is that the expert methods, such as ureteral catherization and the estimation of the functional capacity of each kidney is required in order to give a prognosis and outline the course of treatment to be pursued. Ureteral catherization is employed first of all to determine whether or not two kidneys exist, and at the same time to collect the urine from each kidney for a chemical and bacteriological examination. The tests employed for the estimation of the functional capacity of the kidneys are many, and I will not enter into any discussion on the relative values of the methods, but merely say that I feel that the best of these is the esti-
mation of the time in which the indigo-carmine appears in the urine after an intramuscular injection. This is done by merely watching the indigo-carmine being excreted from the ureters and taking the time at which it appears from each one. By this means there is no reflex disturbance such as is frequently produced by the presence of a catheter in the ureter.

Let us turn now for a few moments to the genital form of tuberculosis in the male. At the present day there are two distinct theories as to the method of infection of the epididymis. I say epididymis, as it is always the first to become involved. The first is hæmatogenous and the second is by extension from the prostate and seminal vesicles. From an investigation of the cases which were admitted to the hospital, I may say that both methods exist.

As to the diagnosis of tuberculosis it is usually quite simple. A nodule appears in the tail of the epididymis which is hard but neither painful nor tender. This slowly enlarges and at an early date invades the scrotal tissues. This scrotal invasion is almost pathognomonic of the disease. There is, however, another type of the disease which is more difficult to diagnose, that is, the acute form. In this type the swelling simulates an acute gonorrhœal epididymoœchitis. In fact the only differentiating feature is the absence of gonorrhœa. This shortly subsides and then the hard mass is left which goes on as usual to invasion of the scrotal tissues.

The symptoms of tuberculosis of the prostate are merely those of tuberculosis of the bladder, and only in rare cases does it produce retention of urine. A case, however, came under my care during the past year in which there was absolute retention of urine due to a tuberculous enlargement of the prostate.

TREATMENT: Having gathered all our facts and arrived at the diagnosis, we must consider what we can do for this very serious condition. Before going any further let me emphasize the fact that we are dealing with tuberculosis, a disease, which under favorable circumstances is self-limited. We treat lung tuberculosis with rest, fresh air and good diet; we treat the early stages of gland tuberculosis with rest, fresh air and good diet; we treat the early stages of joint tuberculosis with rest, fresh air and good diet, but when we come to tuberculosis of the kidney or testicle we rush at once to operative measures, or when we find a case of primary tuberculosis of the bladder or prostate we throw up our hands and say, "It is hopeless." This latter statement may produce
some surprise but there is a reason for it, and this can be found by reviewing the stages through which the study of tuberculosis of the genito-urinary system has passed.

In the early days the condition was only recognised in the late stages of the disease and frequently only at autopsy, and under those conditions one found extensive lesions of both the bladder and kidneys. Again, in those cases where physicians recognised the condition fairly early (I say fairly early, for they never recognised it in its incipient stage) the treatment was always directed to the bladder, and thus the results were very bad. Next we come to the stage in which the cystoscope and the ureteral catheter came into use and then it was found that the disease was practically always primary in the kidney, only secondarily involving the bladder, and also that it remained unilateral for a long time. This brought about a reaction which was so extreme that we forgot about the general treatment such as rest, fresh air, and good diet, and surgeons removed the kidney as soon as the diagnosis was made, irrespective of the stage of the disease. It will assuredly be agreed that this was very radical treatment; however, there was the excuse that the condition was not recognised in its early stage. It is for that reason that I wish to emphasize a fact which was not, and, I believe, is not recognised at the present day by a great many medical men, namely, that many cases of tuberculosis of the kidney never manifest any symptoms referable to that organ, all the symptoms being referred to the bladder. It is for that reason that medical men and even many surgeons persist for months in treating these cases by means of bladder irrigations, and urinary antiseptics, and by flooding the kidneys with large quantities of fluids (all of which are deleterious), before they will have the bladder cystoscooped and the ureters catheterized. However, I believe we are coming to a more rational routine of treatment, consisting of a preliminary trial of rest, fresh air and good diet, combined with the proper use of tuberculin. But we will only reach it when the profession at large will have their patients examined early. Before such treatment is instigated we must be sure of the condition of the bladder and kidneys.

In dealing with the treatment let me divide the cases into four groups: (1) early acute cases; (2) early mild cases; (3) late cases but unilateral; (4) late cases bilateral. In the first group, that is in those cases where the symptoms are very acute, the bladder much swollen and the ureters difficult to locate, the treatment should be the same as in acute lung tuberculosis. They should have
absolute rest, that is in bed; they should be kept in the fresh air and in as dry a climate as possible; they should have nourishing diet but not large quantities of fluids; in other words, they should put as little strain as possible on the kidneys. Tuberculin should be given commencing with a dose of 0'0001 milligram. This dose should be repeated once a week until two or three have been given, and then the strength should be gradually increased to 0'001 milligram. If the symptoms are aggravated by one of these increasing doses the advance must be stopped, and smaller doses given. The key-note of tuberculin treatment is, “Never produce symptoms.” By means of this treatment the disease may become quiescent, or if this is not achieved, the acute symptoms will subside and then the treatment will be the same as that to be described for cases in group three.

The second group should be treated in the same way as those in group one, save for one or two exceptions; first the rest need not imply absolute rest in bed, but no violent exercise should be undertaken; secondly, the dosage of tuberculin may be increased more rapidly. It is important from time to time to examine these cases in order to see whether the condition is improving or not, and if not, then operation is imperative.

The treatment of the cases in group three is purely operative. The kidney should be exposed by a loin incision and if there is difficulty in delivering it, or any danger of breaking the abscesses, then a transverse incision should be made towards the abdominal cavity. This incision should be made through the muscles, but not through the peritoneum, this being displaced inwards. By this means sufficient room is obtained to ligature the pedicle without any difficulty. The ureter should be followed down and excised as near the bladder as possible. Before cutting through the ureter a ligature is placed around it, and later the cut end is cauterised in order to destroy the mucous membrane, and thus to aid in firm union. When the bladder is also involved tuberculin should be employed subsequent to the operation for a considerable time, but no local treatment should be undertaken.

The cases in group four can only be treated in the same manner as those in group one. Operation, save for a nephrostomy with permanent drainage in order to relieve extreme bladder symptoms, is out of the question.

Finally let me say a word or two concerning tuberculosis of the other genito-urinary organs. The treatment of tuberculosis of the testicle should, at first, be along general lines combined with
the use of tuberculin. If, however, this is not successful the testicle should be removed, and if there is any thickening of the vas deferens it should be followed down to the seminal vesicles. Primary tuberculosis of the bladder and prostate must be treated on general principles, no operation being advisable.

In conclusion let me say that I believe the day is not far distant when men will recognise the condition in its incipient stage, and thus many kidneys will be saved which otherwise would have to be removed.

At a meeting of the Halifax Board of Health, which took place April 30th, a report of the year's work was submitted. Particular attention has been paid to the milk supply and, in consequence, the conditions under which the milk is produced and sold have been much improved. An incinerator has been installed for the disposal of ashes and garbage, and it is hoped that this year a public abattoir will be established. The cases of contagious disease reported during the year were:—scarlet fever, 220 cases, 9 deaths; diphtheria, 247 cases, 24 deaths; smallpox, 4 cases, 1 death; consumption, 18 cases. The following meats were condemned and destroyed: 1,690 pounds of beef, 32 carcasses of mutton, 14 carcasses of lamb, 42 carcasses of veal, 9 carcasses of pork, 5 quarters of moose meat, 2,850 pounds of corned pork, 8 barrels of corned beef, 27 pairs of fowls, 369 pairs of rabbits—in all 12,150 pounds.

A campaign is to be held next autumn with a view to collecting the funds required to complete the new buildings of the Montreal General Hospital. The extension, which contains the outdoor department and public and private wards, will be completed very shortly. This addition, together with the eastern wing, will form the nucleus of the new building. The proposed plans include also a western wing, an administrative building, and a nurses' home. The section which has been built already and which is soon to be opened provides beds for about two hundred patients.
THE CANADIAN MEDICAL

Case Reports

TUBERCULOUS APPENDICITIS

THREE unusual cases of this affection coming to my care, I was stimulated to a study of the condition. I will briefly outline the records:

Case 1. Male, aged twenty-four. On April 19th, 1909, I was called to operate on this patient. He had been ill two days and presented signs of an acute appendiceal abscess. Through a small incision an abscess was revealed filling the iliac fossa and extending into the right pelvis, firmly walled off. It was drained, no search being made for the appendix, nor was the peritoneal cavity seen. The temperature fell to normal in four days; appetite and general condition good. Three weeks later because of persistence of purulent discharge, the abdomen was reopened to remove the appendix whose stump was considered to be at the bottom of the sinus. The peritoneum was studded with miliary tubercles, the appendix had sloughed off close to the caecum and had healed over. No thickening of the intestine in the neighbourhood could be found which would suggest any mucous lesion. Five weeks later he developed left sided pleurisy with effusion. Upon his improvement he was moved to Ste. Agathe, whence he returned and began work in January, 1910.

The fistula continued to discharge a small quantity, and methylene blue solution injected into it appeared in the stools, but methylene blue given by mouth failed to colour the pus, demonstrating the presence of a track between skin and bowel but with valvular formation to prevent egress of bowel contents. The fistula closed after eighteen months leaving a small ventral hernia for which a belt is worn.

Personal History: When eight years of age he fell on a picket fence causing haematuria and injury to the right testicle. This laid him up a week, and was followed by hydrocele for which he was tapped at the ages of fourteen and seventeen, with cure. A small encysted hydrocele remains, but neither testicle nor epididymis presents any signs of tuberculous disease. Four years

Read before the Montreal Medico-Chirurgical Society, March 28th, 1913.
previous to present illness he was ill for two weeks with acute appendicitis, since which time he had suffered from vague discomfort in the iliac region. When twenty-three years of age he was ill one month with pericarditis.

**Family History:** Negative.

**Subsequent Course** Patient is strong and well, much heavier than formerly. In October, 1911, he was seized with acute abdominal pain, associated with vomiting, rise of temperature, tenderness in the right iliac fossa and rapid development in that region of a firm tender mass. Rest in bed and application of ice allowed the symptoms to subside; the mass rapidly disappeared, and in twelve days he was at work. Again in August, 1912, a similar condition developed, but of a milder type, from which he was fully recovered in five days. After these attacks careful examination revealed nothing abnormal and I can but explain them as being a perityphlitis due to a small lesion (probably tuberculous) in the caecum.

**Case 2.** Female, aged twenty-seven; married; no children. Lives in the country and was referred to the Montreal General Hospital on July 23rd, 1912. She had been ill four days with acute appendicitis, first attack. Previous history negative.

She was admitted to my service, but during my temporary absence from the city was operated upon by Dr. George Shanks, the medical superintendent. The condition found was appendicitis of the simple acute type. The appendix was removed, the stump cauterized and invaginated, and the abdomen closed without drainage. A few days later the wound broke down and discharged pus with characteristic faecal odour and giving cultures of bacillus coli. On August 8th, methylene blue by mouth appeared in the discharge. The temperature was of the remittent type, ranging from 101° and the patient was emaciating rapidly. On September 9th, as the fistula persisted and no other cause for the temperature could be discovered, the patient was anaesthetized and the wound re-opened. An irregular cavity beneath the skin and between the muscle layers was revealed, lined by a thick pulpy granulation tissue. This was removed by friction with gauze, and in the process the peritoneal cavity was opened. Miliary tubercles were thickly studded over the surface. The caecum was identified and an opening into its cavity disclosed. This was at the site of the appendix attachment. The fistula was closed and invaginated and the wound packed with gauze. Reexamination of the removed appendix showed a minute tuberculous ulcer of the mucosa.
In four days the temperature had become normal, the patient was eating well, in good spirits and gaining rapidly. She was discharged on October 15th to continue her convalescence at her country home. The wound had not completely healed. A personal communication from Dr. H. R. Clouston states that she died in January, 1913, of a generalised tuberculosis. The wound had not healed but the faecal fistula had not recurred.

Case 3. Male, aged twenty, patient of Dr. A. H. Gordon. Has been ill with pulmonary tuberculosis since the fall of 1910, and at the present time the disease is bilateral and extensive; has been in bed constantly since December 1911. On June 13th, 1912, he was wakened at 3 a.m. by violent abdominal pain associated with vomiting. He was seen in the forenoon by Dr. Gordon, who diagnosed appendicitis. The absence of his father from the city occasioned some delay, and it was 8.30 p.m. before the patient came to the operating table. He presented a rigid abdomen with general tenderness, more marked over the right side. Under spinal anaesthesia the abdomen was opened, free pus (yielding cultures of bacillus coli) was evacuated by suction, and a large pulpy appendix, gangrenous and perforated, hanging over the pelvic brim, and adherent to posterior pelvic wall, was removed.

Pathological report: Tuberculous appendix; acute gangrenous perforation.

No faecal fistula developed in this case but a sinus leading into the pelvis along the track of the drainage tube persisted for months. At the time of writing, Dr. R. C. Paterson, Ste. Agathe, reports that the sinus is firmly closed, but the pulmonary disease is unimproved.

It is not my intention to deal with the subject of simple appendicitis occurring in those affected with pulmonary tuberculosis, any unusual frequency in this class of patients is, I think, explained by overfeeding, combined with inactivity causing digestive disturbances or a certain amount of catarrhal enteritis in which the appendix is involved. But I will consider only such cases as demonstrate an actual tuberculous lesion in the appendix.

The records of the Montreal General Hospital, Pathological Department (supplied by Dr. A. M. Burgess, pathologist), show that from 1906 to 1912, inclusive, there were found but three appendices showing tuberculous disease. Two of these were removed from Cases 2 and 3, forming the text of this paper, the third was found at autopsy in a patient dying of pulmonary tuberculosis.
and presenting multiple lesions of the intestinal mucosa. During
the same period there were 1,259 appendectomies giving a per- 
centage of tuberculous lesion of but 0·16. As regards the percentage 
in pulmonary tuberculosis the figures are not conclusive, inasmuch 
as the hospital mentioned does not admit to its wards cases of 
pulmonary tuberculosis. In Nothnagel's "Encyclopedia of 
Medicine" various authorities are quoted whose autopsy findings 
of intestinal ulceration (tuberculous) in cases of pulmonary phthisis 
ranged from 30 to 90 per cent.

The study of the subject can be approached from two avenues, 
the pathological and the clinical.

Pathologically there are two types, the ulcerative and the 
hyperplastic. In both, secondary infections may mask the primary 
condition.

_Ulcerative_ tuberculous appendicitis is the more common type. 
It may be primary, but usually is secondary to pulmonary disease 
or tuberculous ulceration of the intestinal tract (Kelynack). Rare- 
ly it presents the only intestinal lesion secondary to a pulmonary 
tuberculosis, but it may entirely escape even when extensive 
disease involves the cæcum (Kelly). Fenwick and Dodwell report 
2,000 autopsies on pulmonary tuberculosis with the intestinal lesion 
in seventeen limited to the appendix. When exposed by operation 
the serosa usually presents no characteristic appearances. The organ 
is thickened and enlarged and the surface vessels tortuous and 
dilated as in simple chronic or subacute appendicitis. On section 
the caseating tubercles and ulcers may be apparent to the naked 
eye, or it may require careful microscopic examination to discover 
them. The regional lymph glands are usually involved which 
helps to reveal the true nature of the infection.

The _hyperplastic_ type: Here the appendix is almost always 
secondarily involved in similar disease of the ileoæcal region; but 
rarely is it the seat of the primary lesion, and still more rarely is 
the disease limited to the appendix. Kelly instances but one case, 
reported by Crowder, in which the disease was confined to the appen- 
dix. The gross appearances are those of a much thickened and in- 
durated appendix. The serosa is unchanged, except that through 
it may be seen discoloured areas of the subserosa which have under- 
gone degeneration or hæmorrhage. On section the mucosa is not 
much affected, the submucosa, which is greatly thickened, being 
the chief site of the disease, which is evidenced by numerous tu- 
bercles in various stages of development and retrogression. Fibrous 
tissue predominates and the layers of the appendix wall are blended
and indistinguishable one from the other. It may easily be confused with neoplasm of the appendix but the thickening is distributed around the whole circumference of the organ and gradually merges into the normal, whereas in neoplasm the thickening is eccentric and more abruptly limited.

For the same infective agent to present two such widely divergent series of changes in the appendix demands an explanation. The one offered by most authorities is that in the ulcerative type there is little or no resistance to the progress of the disease, hence the lesions show no attempt at localisation or repair. There are usually found elsewhere in the body other tuberculous lesions showing the same rapid development. In the hyperplastic type, however, the resistance index is high, frequently there may be detected, clinically or at autopsy, either a healed pulmonary or glandular focus, or one that is almost inactive. Therefore restrictive and reparative processes are instituted about the lesions in the appendix leading to fibrosis and increase in size.

Clinically, tuberculous appendicitis presents no characteristic symptoms or signs distinguishing it from simple chronic appendicitis. Vague discomfort in the iliac fossa with slight tenderness and reflex gastric disturbances may be the only symptoms present. Temperature may or may not be elevated, is unreliable as a diagnostic aid, and is usually due to the activity of some other lesion. Tuberculin is of little assistance.

A mild secondary infection may present the picture of recurring catarrhal attacks, and a more severe infection that of an acute attack and one developing with more than the average rapidity. Occasionally the disease will escape secondary infection, limiting adhesions are formed and a cold abscess develops in the iliac fossa. Especially in patients affected with an active pulmonary tuberculosis are these preliminary symptoms apt to escape detection. In those the subjects of advanced pulmonary tuberculosis an acute appendiceal lesion may supervene with almost no symptoms and may even advance to perforation and general peritonitis without recognition. Maurice Brelet states that "in phthisical patients general peritonitis may escape detection. Rapid fall of temperature, slight meteorism, indefinite and diffuse pain, with vomiting, may be the only symptoms." Ordinarily, however, the classical signs of simple acute appendicitis declare themselves (Maizard).

It might be well here to briefly refer to the relation existing between tuberculous lesions of the appendix and tuberculous peritonitis. In but very few instances does a mucous lesion in the appen-
dix exist as the causal factor in the development of a generalised tuberculous peritonitis, but where such a condition is discovered the removal of the appendix is the first step toward recovery. On the other hand, where in generalised tuberculosis of the peritoneum the serous surface of the appendix presents miliary tubercles without evidence of a mucous lesion, no good can be derived from an appendectomy, unless it seems probable that distortion of the appendix by adhesions may precipitate an acute attack and thus introduce the dangerous element of a secondary infection. Whenever such operation is performed great care must be exercised in separating adhesions and covering raw surfaces and the stump, otherwise faecal fistula is prone to follow (English).

A further question which arises is the advisability of operation upon a case of pulmonary tuberculosis presenting signs of a chronic appendicitis. The arguments advanced against operation are:

1. The appendix, if tuberculous, in all probability is not the only intestinal lesion.
2. Interference with "the cure" (by which term I mean the climatic and dietetic regimen) by necessary restrictions after operation.
3. The irritation of an anaesthetic upon the lungs.
4. Danger of the faecal fistula owing to poor reparative powers.

To meet these objections it may be stated that in a patient more or less inaccessible to surgical aid, the anxiety caused by the knowledge of his possessing a "chronic appendix" militates against his recovery to good health; that the dangers of faecal fistula can be overcome by special attention being given to technique, whereas if the case suddenly becomes acute and requires operation, the risk of faecal fistula would be far greater; that convalescence after operation is established in less than one week; that with gas-oxygen anaesthesia, or better under spinal analgesia, irritation to the diseased lung is reduced to a minimum or is absent. Each individual case must be judged upon its merits.

**Conclusions:**

Tuberculosis of the appendix may exist without giving rise to symptoms, or at most to those of a chronic or a recurring catarrhal appendicitis. Careful frequent supervision of the abdomen is necessary in all cases of active and advancing pulmonary tuberculosis.
Acute symptoms may suddenly arise owing to a secondary infection. The case may then follow the course of acute simple (Case 2.), perforating with generalised peritonitis (Case 3.), or gangrenous with abscess (Case 1.).

Operation on these acute cases is liable to be followed by faecal fistula, which may cause much chagrin to the surgeon unless microscopic examination of the appendix has revealed the tuberculous nature of the disease (Case 2.).

There are almost invariably other tuberculous lesions present.

NOTE: Since preparing this paper an additional case has been brought to my attention. It occurred in the service of Dr J. Alex. Hutchison in the Montreal General Hospital and will be reported by him.

It is of that rarer type of hyperplastic tuberculosis usually associated with ileocaecal tuberculosis and but seldom primary in, or localised to, the appendix. The patient is a male aged thirty with no other discoverable tuberculous lesion, but between the ages of eighteen and twenty he suffered from pain in the right chest with cough and expectoration. At operation a simple appendectomy was performed, the cæcum not being encroached upon by the disease.

Bibliography:—

Fenwick and Dodwell, Lancet, 1894.
Kelly, "The Vermiform Appendix and Its Diseases."
Keltnack, "Pathology of the Vermiform Appendix."
Maizard, Medical Review, 1900, p. 685.

Montreal

Alfred T. Bazin
ATTENTION is called to the provisional programme which is published in this issue, and which gives evidence of advanced progress in the preparation for the meeting in London, Ontario, June 24th to 27th. A programme, which includes the names of such men as Dr. Paterson, of London, England; Drs. Billings, Ochsner, and Murphy, of Chicago; Drs. Barker and Cullen, of Johns Hopkins; Dr. Stockton, of Buffalo; and Dr. McLean, of Detroit, as well as a large representation of distinguished Canadian physicians from all parts of the country, should attract a large concourse of medical men to this meeting. The revised programme will be furnished in due time to all who are to take part. The popularity of London as a convention centre, the recognized hospitality of its citizens, and the attractiveness of the city itself and its surroundings, leave nothing to be desired to ensure the medical profession of Canada a delightful holiday outing, as well as a scientifically profitable meeting. The medical fraternity of London are sparing no pains to make this the most successful of all the meetings of the Association, and their efforts are deserving of a hearty response on the part of the profession throughout the Dominion.

Reduced rates on the convention certificate plan, details of which were published in the May issue of the Journal, will be available from all points in Canada for physicians and members of their families accompanying them. The rate will be single fare for the return journey, provided there is a travelling attendance of three hundred. Special attention is directed to the fact, that to take advantage of this reduction it is necessary when purchasing a ticket at the commencement of the journey, to procure from the ticket agent a pro-
perly receipted standard certificate. From Fort William, Ontario, and all points east, tickets for the going journey must be purchased between the dates June 20th and 26th, both inclusive, and properly validated certificates will be honoured for tickets for the return journey up to and including July 1st. From points west of Fort William in Ontario, Manitoba, Saskatchewan, and Alberta, these dates will be June 18th to 22nd, and July 12th, respectively. From points in British Columbia the Canadian Pacific Railway has granted the Association the convention certificate rates. The only dates on which tickets may be purchased are June 18th, 19th, and 20th, and not June 16th to 20th, as published in last month's issue. Certificates for the return journey will be honoured at London or Toronto, up to and including July 12th. For those to whom the time-limits or other restrictions may be inconvenient, the summer tourist rates, approximately a fare and a third, will be available over both the Canadian and American transcontinental lines.

All the members, except those who may desire to prolong their journey beyond the prescribed limits, are urged to buy their tickets on this convention certificate plan. Those who perhaps have only a short distance to go, and who may think it unnecessary, in view of the small expense to take their tickets on this plan, will be asked at the meeting to give the return coupons of their tickets to the secretary, for submission to the special agent, in order that they may help to bring up the total of the convention certificates to the required three hundred.

THE INTERNATIONAL MEDICAL CONGRESS
IN LONDON

The last meeting of the Congress in London took place in 1881, under the presidency of Sir James Paget. This year the president is Sir Thomas Barlow. The central office will be in the Albert Hall. The sectional meetings will be held in rooms in the University of London, the Imperial Col-
le, the Royal School of Science, the School of Art, and the Central Technical College; the Royal College of Physicians, the Royal Society of Medicine, St. Thomas' Hospital, the Royal Army Medical College at Millbank, and the Royal Dental College are also offering accommodation. The Student's Union of the Imperial College will serve as the men's club, and the authorities of Alexandra House have kindly lent rooms for a ladies' club. Five general addresses have been arranged; these will be delivered in the Albert Hall by Professor Chauffard (Medicine), Professor Harvey Cushing (Surgery), Professor Ehrlich (Pathology), Mr. W. Bateson (Heredity), and the Rt. Hon. John Burns, M.P. (Public Health). It is estimated that about 5,000 medical men and 2,000 ladies will attend the Congress.

The reports drawn up by those chosen to introduce the discussions are being received and set up in type. It is hoped that it will be possible to bind these reports, as a separate volume for each section, before the Congress opens. A second volume for each section will be published subsequently and will contain the speeches delivered and the independent papers presented at the Congress.

The section of Museum Technique has been organized by the International Association of Medical Museums with the collaboration of the Museum Committee of the Congress and will include the following subsections: preparation and preservation of material; methods of housing and display and museum administration. Thus it is intended that an opportunity shall be given to demonstrate the different methods employed by workers and to call attention to the usefulness and possible scope of the medical museum. Descriptive cards written in English, French, and German, will be attached to each exhibit. The specimens should be addressed to Dr. H. W. Armit, Hon. Secretary, Pathological Museum, Imperial College of Science, South Kensington, London; or, they may be sent to the local secretaries of the International Association of Medical Museums, by whom they will be for-
warded to the Museum of the Congress. All exhibits should reach the Imperial College of Science between July 25th and August 2nd. It is understood that the exhibitor will agree to pay his share of the expense of forwarding the specimens which are to be exhibited, which shall include nothing of a commercial nature. In the event of an exhibitor making a communication to a section, arrangements may be made with the committee for his specimens to be made available at the sectional meetings.

Subscriptions to the general fund of the Congress should be forwarded to the Treasurers. It should be borne in mind that the membership subscription of £1 only suffices to meet the expenses of producing the volume of Transactions subsequently delivered to each member. The entire cost of organization and conduct of the meeting therefore, has to be provided for by private subscriptions to the general fund. The office of the Secretary of the Canadian Committee is at 134 Bloor Street West, Toronto.

CANADIAN PUBLIC HEALTH ASSOCIATION

THE Third Annual Congress of the Canadian Public Health Association will be held in Regina, on September 18th, 19th and 20th, 1913. This will be the first occasion on which the members of the Association have met in the West.

At the Congress held in Toronto last year, communications were read from the city of Regina and the government of Saskatchewan, inviting the members to make Regina their next meeting place. These invitations were unanimously accepted and a hearty welcome will be extended to the Association by Saskatchewan's provincial government and its capital city.

The provincial government, realizing the educational value of such a conference, and the stimulation of interest which it will effect in matters of public health, have decided to bring all the medical health officers of the province, some
two hundred in number, to the congress. There is, therefore, every indication that the attendance will equal, if not surpass, that of the two previous meetings in Montreal and Toronto.

Following the decision to hold the Convention in Regina, the Executive Committee of the Association at Ottawa elected Dr. M. M. Seymour, Commissioner of Public Health for Saskatchewan, Convenor of the Local Arrangements Committee. Local committees have already been formed, and are actively engaged in preparing a programme of outstanding strength and interest. Several of the most prominent health authorities of the Dominion and the United States will address the Convention.

The Secretary of the Local Arrangements Committee is Mr. R. H. Murray, Engineer to the Bureau of Public Health, Regina.

A College of Surgeons of North America was organized at a meeting in Washington on May 5th, when four hundred and fifty prominent surgeons from all parts of the continent came together for this purpose, at the invitation of a committee which was appointed by the Clinical Congress of Surgeons of North America at its last meeting. The object of the College is to elevate the standard of surgery, to provide a method of granting fellowships in the organization, and to formulate a plan which will indicate to the public and the profession that the surgeon possessing such a fellowship is especially qualified to practice surgery as a specialty; also to formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine, who is allowed to perform independently surgical operations; and, further, to seek the means of legalizing this standard. Members are to be known as Fellows of the College, and the Fellowship is to be open to any applicant who is a legally qualified practitioner and who meets the requirements, professional and ethical, of the College. The initial fee will be twenty-five dollars, and the annual dues, five dollars.
Of the fifty surgeons who are to be elected annually to serve three years on the Board of Governors, thirty are to be nominated by accredited societies. The surgical section of the Canadian Medical Association, for example, is to nominate two members. The governors in turn are to elect a board of twelve Regents, not more than nine of whom can be of the same country. Officers were elected as follows: president, J. M. T. Finnie, Maryland; first vice-president, W. W. Chipman, Quebec; second vice-president, Rudolph Matas, Louisiana; treasurer, A. J. Ochsner, Illinois; general secretary, Franklin H. Martin, Illinois. In addition to the above, Drs. H. A. Bruce, Ontario; G. E. Armstrong, Quebec, and R. E. McKechnie, British Columbia, were elected to the Board of Regents.

The Dominion Medical Council will hold its adjourned meeting in Ottawa on June 17th. All regulations having first been approved by the Governor-in-Council, arrangements will be made for the holding of examinations early in the autumn, probably during the first or second week in October. The subjects of examination, both written and oral, we are informed, will be anatomy and physiology only of the primary and all the final branches. It is expected also that the clause in the Act providing for those who have been ten years in practice in one or more of the provinces of Canada will be at once brought into effect. All necessary information regarding arrangements completed by the Council may be obtained after the meeting from the Registrar, Dr. R. W. Powell, 180 Cooper Street, Ottawa.

From June 24th to 27th, a meeting of alienists and neurologists of the United States will be held at Chicago. The secretary is Dr. W. T. Mefford, 2150, West Madison Street, Chicago.
The annual meeting of the American Medical Association will be held at Minneapolis from June 17th to 20th, 1913.

In England, a new measure, on lines similar to the Mental Deficiency Bill which was withdrawn last year, has been introduced into the House of Commons. It is hoped that the Bill may be passed during the present session. The proposed Act, which is more limited in scope than last year’s bill, will be administered by the Lunacy Commissioners, to be known in future as the Board of Control. The medical members of the Board will be appointed by the Home Secretary, while the legal representatives will be nominated by the Lord Chancellor. The Bill states the several categories of mental defectives that may be dealt with under the Act.

An institute for medical research which is to be called the South African Institute for Medical Research has been established at Johannesburg. It is probable that research scholarships will be available for suitably qualified medical men. The institute is quite near the general hospital, which is the largest in South Africa, and it will contain four wards with from twenty to thirty beds for the treatment of patients. The director of the Institute is Dr. Watkins Pitchford, formerly house physician to St. Thomas’ Hospital, London. The building will be completed in about a year’s time.

The thirty-second annual report of the Falconwood Hospital for the Insane, at Charlottetown, Prince Edward Island, gives an interesting account of the year’s work. From October 1st, 1911, to December 31st, 1912, 76 patients were admitted to the hospital. The number under treatment during the year was 327—182 men and 145 women. Twenty deaths occurred, 31 patients were discharged “recovered,” 9 “improved,” and 6 “unimproved.” Thus the percentage of recoveries was 40·76 and the death rate 6·1 per cent. At
the end of the year 261 patients were in the hospital. Since 1848, 1999 persons have been treated in the hospital—1146 men and 853 women; of this number, 820 have recovered—499 men and 321 women; and 281—163 men and 118 women—have improved; while 504 have died, and 133 are reported as "not improved."

The statistics for the Provincial Infirmary are: patients in residence October 1st, 1911, 78; admissions during the year, 44; in residence December 31st, 1912, 100—50 men and 50 women. The infirmary was opened in February, 1909, and since then 176 persons have been admitted.

During the past year, a cottage hospital for the treatment of tuberculous patients has been completed. The building will accommodate about twenty patients and it measures 42 x 40 feet. The work of construction, with exception of the plumbing, was performed by the patients.

It can truly be said that the welfare of the race and the happiness of the individual are the vital issues with which humanity is concerned. The second depends in great part upon the individual himself; but the first gives food for thought to all those who are interested in the common good. And, in this, one's efforts must largely be directed to the future. Among the many social problems now awaiting solution is that of the feeble-minded—and it is a question fraught with many difficulties. How is it possible to ensure protection, and guidance, and justice, to those who are incapable of right judgement, and whose minds are those of a little child even though their bodies are fully developed? In the seventh report on the feeble-minded in Ontario, Dr. Helen MacMurchy gives a clear account of existing conditions. In Ontario alone there are over 6,000 feeble-minded persons, in the state of Michigan there are 9,000, and in New York City there are 15,000 feeble-minded children! The Orillia Hospital is overcrowded and has a waiting list on which appear 311 names.
One obvious thing to do is to take care of the mentally defective child. Dr. MacMurchy suggests that all children should be kept at school from the ages of seven to fourteen years; that a census should be prepared of all children and that special training should be given to those who are unable mentally to keep pace with a normal child of the same age. If after receiving the special training, it is clearly apparent that the child is mentally defective, it should be given a suitable, practical—manual and industrial—education, and, what perhaps is more important, should be carefully guarded from evil influences. Should the parents be unable to do this, it should be done by the municipality. As for the adult, the colony type of institution is the most economical and most satisfactory way of caring for the feeble-minded. Cottages would be built large enough to hold from forty to sixty inmates; workshops, schools, and a church would be built; and thus these poor unfortunates would form a thrifty community, and much evil resulting from neglect would be avoided. Surely, it is scarcely right that irresponsible persons should be allowed to wander free and, as is so often the case, drift into houses of refuge or even the common jail, where so many of them go to expiate crimes the enormity of which they are perfectly incompetent to realize!

An informal business meeting of the International Association of Medical Museums was held on May 5th, at the Army Medical School, Washington, under the presidency of Professor A. S. Warthin, of Ann Harbor, Mich. On this occasion, the secretary, Dr. Maude E. Abbott, was requested to communicate with the English, French, German, Italian, Russian, Scandinavian, Swiss, Japanese, and Australasian members, suggesting the formation of sectional societies, or committees, under the control of the main international body; suggesting also that a representative of each nationality be sent to the meeting which is to be held in London in conjunction with the Seventeenth International Congress of Medicine,
there to discuss, formulate, and establish the mechanism of the
government of the International Association of Medical
Museums and of its sectional societies. The more perfect
organization of the association will be considered at the
London meeting, and suggestions were made bearing on this
matter. A committee of three was appointed to act for the
American branch of the Association at the London meeting.
Furthermore it was decided to establish at McGill University,
Montreal, a central bureau for North America for the pre-
servation of results of original research. The curator will be
Dr. Abbott, under whose direction the material will be pre-
served, catalogued, indexed, and made available for reference.

The annual meeting of the American Medical Editor's
Association will be held on June 16th, at the Hotel Radisson,
Minneapolis, Minn. An interesting programme has been
arranged and the meeting will be followed, on the evening
of the same day, by the annual banquet.

The president of the Canadian Committee of the Fourth
International Congress on School Hygiene, which will take
place at Buffalo, N.Y., from August 25th to 30th, is Sir James
Grant, of Ottawa. The secretary is Dr. Chas. A. Hodgetts,
medical adviser to the Commission of Conservation, Ottawa.

According to the regulations recently made for the
protection of immigrants seeking employment, every person,
firm, or company, engaged in the business of an intelligence
office, or employment or labour agency, and having business
dealings with immigrants, shall first obtain a license from
the Superintendent of Immigration. Such license shall not
be transferable, and should the holder fail to comply with
the requirements of the Immigration Act, it shall be revocable
on the written order of the Superintendent of Immigration.
Certain rules are laid down for the conduct of the holder of
such license, and should these rules be broken, the holder renders himself liable to a penalty not exceeding $100, or a term of imprisonment not exceeding three months.

A society of Jewish doctors and scientists has been formed in Palestine. The intention of the society is to improve the sanitary conditions, and for this purpose it is proposed to establish a bacteriological laboratory, central clinics for the education of those who have charge of infants, and departments for the study of malaria and the suppression of trachoma.

It was stated in the March issue of the Journal that the name of the Public Health Journal had been changed. We were misinformed on this point, as no change has been made in the name of the journal in question. An explanation of the matter will be found on page xxiii of the April issue of the Public Health Journal.

The Public Service Monthly, Volume I, No. 9, contains an article, written by Dr. Arthur Wilson, of Regina, concerning the hospitals in the province of Saskatchewan. The article is clear and concise and it presents much useful information of statistical value. There are twenty-one hospitals in the province, with a total bed capacity of 922; this gives about two beds to every 1,000 persons, the population of the province being approximately half a million. It is the intention to build many new hospitals, in fact several are in course of construction, and within the next year or so it is expected that at least twenty new hospitals will be built at different places in the province. The need for hospital extension is very great, particularly in the maternity wards and isolation hospitals. Last year the death rate in hospital was five per cent. Seven hundred and thirty-two cases of typhoid were treated, and of these eighty-nine died. One hundred and sixty-three cases of tuberculosis were treated and of these thirty-eight died.
The average daily cost of maintenance per patient is about $2.05; in Ontario it is only $1.21, but the higher cost of living in the West necessitates a higher expenditure. The per capita government grant is fifty cents a day; in Ontario it is about twenty cents. The total cost of maintenance of the hospitals during the year was over $432,359.24, and to this amount the provincial government contributed $85,100.50.

The eighth annual report of the provincial sanatorium at Kentville, N.S., gives the following account of the work accomplished during the year ending September 30th, 1912. Fifty-seven patients were treated and forty of these were discharged—eleven apparently cured, twenty arrested, three improved, three unimproved, and three found to be non-tuberculous. On admission, these cases were classed as follows: eleven incipient, twenty-six moderately advanced, and three non-tuberculous. Thirty-five remained for the full term of treatment, their average stay being one hundred and eighty-one days. Particular emphasis is laid on the importance of the educational work done in the sanatoriums as a means of prevention of the disease, and on the benefits derived by the patients from the change of environment. During the year tuberculin was not used to any great extent, but in cases where it was used the results were satisfactory; these will be given more fully in the next report.

The supplement to the British Medical Journal, February 22nd, 1913, contains the report of the committee appointed by the King Edward Hospital Fund for London, to enquire into the system prevailing in the London hospitals with regard to the admission of out-patients. After considering at some length the classes of patients for whom the out-patient department is intended and the misuse of such departments, the report enumerates the objects to be aimed at in reform; they are, (1) the reduction of numbers by the
exclusion of those able to pay for treatment and of those who should be referred to the Poor Law, and by the discouragement of trivial cases; (2) the development of the consultative side of hospital work, and coöperation with general practitioners; (3) the coördination of hospital assistance with general charitable work; (4) the provision of adequate safeguards for the interests of medical education and the development of medical science. The objects of the out-patient department are defined as: (1) to provide effective medical attendance for persons unable to pay; (2) to provide immediate treatment for sudden and serious accident or illness; (3) to provide special diagnosis, advice, or treatment where necessary; (4) to assist medical education and the advancement of medical science.

At the annual general meeting of the Association Internationale de Perfectionnement Scientifique et Médicale, which was held in Paris at the end of May, the medal for social service was presented to Her Majesty the Queen of the Belgians, the medal for scientific merit to Professor Armand Gautier, and the association medal to Professor Ehlers of Copenhagen.

In China the old order has changed and a new civilization has dawned. And with these changes have come opportunities of development, and the great Celestial Empire has become a field waiting for the seed which shall yield a fruitful harvest. Here western medicine already has found a fertile soil. Medical training centres are being established by the China Medical Missionary Association at Moukden, Peking, Chinan-fu, Nanking-Hanchow, Hankow, Chengtu, Canton, and Foo-chow. A curriculum, somewhat on the British plan, has been arranged, and each school will have a staff of at least ten qualified European or Chinese teachers, for the most part drawn from the different missionary societies. The
teaching will be given in Chinese and in either German or English, the choice to be made by the Chinese authorities. Should the German language be chosen, it is hoped that English will be permitted as an alternative.

As a memorial to the late Lord Lister, and as a means of perpetuating his memory in a way that it is hoped will prove interesting and instructive to every member of the medical profession for all time to come, one of the wards in the Royal Infirmary, Glasgow, in which he worked out and first put into practice the principles of antiseptic surgery, is to be reserved and utilized. One part of the ward is to be refurnished, as it was in his time, with such objects as it may be possible to acquire; while the other part is to be made into a museum for the exhibition of anything associated with the life and work of the great master. It is, therefore, asked that any who may have letters, pamphlets, books, or other objects of direct personal association with Lister and his work will either present or loan them to the museum. Professor John H. Teacher, honorary curator of the museum, will be pleased to receive any objects addressed to him at the Royal Infirmary, Glasgow. The names of all donors or senders of objects are to be affixed to the exhibits.

The average citizen delights in criticizing all civic institutions and the Ottawa Isolation Hospital has been attracting such attention lately. It has been charged, in addition to minor faults, that there is too much communication between the different wards and with outside sources of infection, that pupil nurses are left in charge of the wards during the night, without the oversight of experienced nurses. What appears to have given rise to the charges has been the occurrence of a suspicious case of smallpox among the patients.

An investigation was held by a committee of the Board of Health, who reported that the charges were greatly over-
drawn, but recommended that a permanent medical superintendent should be appointed to have full control. At present the house surgeon rarely remains longer than one year, and the lady superintendent is really the responsible party, as she is in more permanent office. This report has not been acted on by the Board of Control, as it wishes to place it in the hands of the new health officer when he takes up his duties.

The hospital is modern and excellent in every respect, and should have the confidence of every one.

The Permanent Committee of the International Congresses of Medicine gives notice that three prizes will be awarded during the International Medical Congress in London next August. The Moscow prize of 5,000 francs, instituted in commemoration of the twelfth congress, which was held in that city, is given for the best work done in medicine or hygiene or for distinguished services in the cause of suffering humanity. The Paris prize of 4,000 francs, founded at the thirteenth congress, will be awarded to the person judged to have made within the last ten years the most important original contributions to the advancement of medicine, surgery, obstetrics, or to anatomy or biology in their applications to medical science. The Hungary prize, which was established by the sixteenth congress at Budapest in 1909, is awarded for some work in medical science which has been published in the interval between one congress and the next. This prize is of the value of 3,000 crowns. The Permanent Committee is prepared to receive suggestions to guide it in the award of these prizes. Communications should be addressed to the committee at 10, Hugo de Grootstraat, The Hague, Holland.

A good deal of progress has been made since the seventeenth century, and in these days of comparative enlighten-
ment it would not seem impossible to diagnose a case of typhoid. Yet a man was allowed to die of this disease in the Montreal jail, after four days’ severe illness, without any medical attendance. The man—a Swede—was found wandering about the streets, and as his actions appeared rather strange, he was taken in charge by the police. He stated that he was hungry and had had no food for two days. Brought before the magistrate, his manner appeared strange and he was suspected of insanity. Accordingly, he was sent to the jail for eight days to be examined as to his mental condition. No importance was attached to his physical state, and as the jail doctor was out of town, the man was allowed to lie in his cell, delirious and unattended, until he died. Unfortunately, this instance is by no means unique. Two days later, another death occurred in the jail under the same conditions. This man was suffering from mental disease. Although obviously ill, no medical assistance was procured for him and he died also. For want of a better place, insane persons are now sent to the common jail to await their trial. The need for reform has been recognized in Ontario, and bills dealing with the matter are now under consideration by the provincial parliament. Until Quebec sees fit to amend its laws in this connexion, one might expect that medical assistance would be provided when necessary, and that it would be possible to discriminate between those really ill and those seeking to mislead the men in charge.
PROVISIONAL PROGRAMME

June 24th, 25th, 26th, 27th, 1913

GENERAL PROGRAMME

First Day—Tuesday, June 24th

9.00 a.m. Registration, etc.
Meeting of Executive Council.

10.00 a.m. Meeting of Sections.

2.00 p.m. Meeting of Sections.

8.30 p.m. General Meeting.
Invocation.
Address of welcome, His Worship the Mayor of London.
Election of members to the Executive Council.
Address in surgery, Dr. J. Alex. Hutchison, Montreal.
Address in gynaecology, Dr. T. S. Cullen, Baltimore.

Second Day—Wednesday, June 25th

9.00 a.m. Meeting of Sections.

12.30 p.m. Luncheon at Victoria Hospital.

2.00 p.m. Meeting of Sections.

8.30 p.m. General meeting.
President’s address, Dr. H. A. McCallum, London.
Address in medicine, Dr. Lewellys F. Barker, Baltimore.

Third Day—Thursday, June 26th

9.00 a.m. Meeting of Combined Sections.
Symposium on diseases of the stomach, medical and surgical, introduced by Dr. Alexander McPhedran, Toronto.
Meeting of the Canadian Medical Protective Association.

2.00 p.m. Meeting of Combined Sections.
Symposium on diseases of the thyroid, medical and surgical aspects; introduced by Dr. A. J. Ochsner, Chicago.
4.00 p.m. General meeting for general business.
Meeting of Executive of Ontario Medical Association.
8.30 p.m. Members of the profession resident in London will entertain the members of the association at a smoking concert in the New Masonic Hall.

Fourth Day—Friday, June 27th

9.30 a.m. Dr. Frank Billings, Chicago, will conduct a medical clinic before the Association.
Dr. L. G. Rowntree, Baltimore: "Experimental and clinical study of the functional activity of the liver, by means of phenol-tetra-chlorophthalein."
2.00 p.m. Dr. John B. Murphy, Chicago, will give a lantern lecture on the surgery of the bones and joints.

Section of Laboratory Workers

Tuesday, June 24th, 2.00 p.m.:

Dr. C. G. Imrie, Toronto: "Some facts with regard to fatty degeneration of the heart."
Dr. Fletcher McPhedran, Toronto: "Hæmolytic action of the extracts from organs in pernicious anæmia."
Dr. D. C. Revell, Edmonton: "Examining colonies in plates."
Dr. F. B. Bowman, Hamilton: Title later.
Dr. Fraser B. Gurd, Montreal: "The toxins of intestinal obstruction."
Dr. E. A. Archibald, Montreal: "Ascending infection of the common bile duct."
Dr. George Shanks, Montreal: "A study of a case of splenomegalia."
Dr. F. T. Tooke, Montreal: "The pathological complications of cataract extraction."
Drs. Grant Campbell and W. G. Hepburn, Montreal: "A case of cardiac anomaly."
Dr. O. C. Gruner, Montreal: "The spleen in the light of recent histology."
Dr. E. J. Mullally, Montreal: A demonstration—title later.

Wednesday, June 25th, 2.00 p.m.:

Dr. D. Fraser Harris, Halifax: "On the reducing endo-enzyme of internal respiration."
Drs. F. R. Millar and H. A. Sims, Montreal: "Methods employed in stimulating the cerebral cortex."
Dr. A. H. McCordick, Montreal: "The proteid, fat, and carbohydrate contents of certain organs."
Dr. V. E. Henderson, Toronto: Title later.
Dr. H. J. Robertson, Toronto: "An experimental criticism of the methods of uric acid analysis from the clinical standpoint."
Dr. F. W. Rolph, Toronto: "The indicator method of estimating gastric acidity."
Dr. A. H. Caulfeild, Toronto: "The correlation of biological findings and clinical progress in tuberculosis."
Drs. C. K. Russel and J. Kaufmann, Montreal: "Examination of the cerebrospinal fluid in tabes and the results of treatment."
Dr. R. G. Armour, Toronto: "Syphilis as encountered by the neurologist."

Section of Public Health

Tuesday morning:

Dr. J. W. S. McCullough, Toronto: "Public health legislation in Ontario."
Dr. J. A. Hutchinson, Westmount: "Public health legislation in the province of Quebec."
Dr. G. G. Nasmith: "The control of a municipal milk supply."
Discussion: Drs. T. H. Whitelaw, Edmonton, and E. L. Williams, London.
Dr. A. E. Wodehouse: "The great need of the physician's active cooperation in public health work."

Wednesday morning:

Dr. John Stewart, Halifax: "Report of special committee on medical inspection of schools."
Symposium on "Venereal disease as a practical public health problem."
Papers by Drs. H. W. Hill, London, F. A. Clarkson, Toronto; and A. S. Warthin, Michigan; discussed by Professor Watson, Toronto.
Dr. L. F. Barker, Baltimore: "Mental Hygiene."
Discussion: Dr. E. H. Young, Kingston.
Tuesday, June 24th:

2.00 p.m. Dr. F. Fenton, Toronto: Title later.
Dr. H. M. Little, Montreal: Title later.
Dr. Adam Wright, Toronto: “Anaesthesia and the forceps in labour.”
Dr. Hendrick, Toronto: “Repair of the lacerated perineum.”

Wednesday, June 25th:

9.00 a.m. Symposium on eclampsia, introduced by Dr. D. J. Evans, Montreal.
2.00 p.m. Dr. J. A. Vineberg, New York: “Puerperal sepsis.
Dr. W. Cuthbertson, Chicago: “Improved operation for displacements of the uterus.”
Professor Watson, Toronto: Title later.

Section of Surgery

Tuesday, June 24th:

10.00 a.m. Drs. Alex. Primrose and T. D. Archibald, Toronto: “Aneurysm of the posterior tibial artery.”
Dr. J. P. Kennedy, Wingham: “Membranous pericolitis.”
Dr. W. Gunn, Clinton: Title later.
Dr. R. Y. Parry, Hamilton: Title later.
Dr. G. T. McKeough, Chatham: Title later.
2.00 p.m. Dr. H. A. Bruce Toronto: Title later.
Dr. R. E. McKechnie, Vancouver: “Congenital hypertrophic pyloric stenosis.”
Dr. I. Olmsted, Hamilton: Title later.
Dr. J. Halpenny, Winnipeg: Title later.
Dr. J. E. Hett, Berlin: “Treatment of cancer by fulguration.”
Dr. A. E. Garrow, Montreal: Title later.

Wednesday, June 25th:

9.00 a.m. Dr. W. E. Gallie and D. E. Robertson, Toronto: “Experimental study of regeneration of bone.”
Dr. E. S. Ryerson, Toronto: “Clinical aspects of regeneration of bone as manifested by a study of the union of fractures.”
Dr. J. E. Lehman, Winnipeg: A paper dealing with fractures.
Dr. Emil Beck, Chicago: “Results of eight years’ treatment of sinuses and abscesses with bismuth paste.”
Dr. C. E. Starr, Toronto: Title later.
2.00 p.m. H. R. Casgrain, Windsor: Title later.
Dr. Angus McLean, Detroit: "Suprapubic prostatectomy."
Dr. F. N. G. Starr, Toronto: "Etiology, symptoms, and treatment of gall-stones."
Dr. E. W. Archibald, Montreal: "Surgical problems in cases of meningitis."
Dr. H. P. H. Galloway, Winnipeg: Title later.

Section of Medicine

First Day, Tuesday, June 24th:

10.00 a.m. Dr. Newell, Watford: Title later.
Drs. G. W. Ross and C. S. Wright: "Infectious arthritis, etiology, pathology and treatment."
Dr. H. B. Anderson: "Clinical importance of some pathological interrelationships in diseases of the abdomen.
Dr. J. H. Elliott: "Diagnosis of tuberculous, bronchial and mediastinal glands."
Dr. R. C. Paterson, Ste. Agathe: "Pain as a symptom in pulmonary tuberculosis."

2.00 p.m. Dr. H. McGougan: "Acute bronchitis and pneumonia of infancy and childhood."
Dr. G. S. Strathy: "Treatment of congenital syphilis with salvarsan."
Drs. Strathy, Bates and McVicar: "Treatment of general paresis and tabes with salvarsan."
Dr. G. W. Howland: "Functional disturbances of the nervous system, hysteria and neurasthenia; antiquated diagnoses."
Dr. N. H. Alcock, Montreal: "Some new points in dietetics."

Second Day, Wednesday, June 25th:

9.00 a.m. Dr. Glasco: "Psycho-therapy."
Dr. V. E. Henderson: "Action of some important foodstuffs, illustrated with lantern slides."
Dr. H. C. Parsons: "Infection of children in tuberculosis."
Dr. C. S. McVicar: "Some psychiatric problems as they affect the general practitioner."
Dr. E. Ryan: "Early symptoms and treatment of psychoses."

2.00 p.m. Dr. A. Keibel: "The value and limitation of the Wassermann reaction."
Dr. F. W. Rolph: "Gastric hyperacidity."
Dr. A. McPhedran: "Pituitary extract as a cardiac stimulant in pneumonia."
Dr. J. H. McPhedran: "Endocarditis in influenza."
Dr. Slader: "Erythema multiforme and anaphylaxis."
Dr. Goldie: "Occurrence of fluid exudate in the pleural sac in croupous pneumonia."
Dr. Shannon: "Hereditary chorea."
Dr. A. H. Caulfeild: "Vago-tonics."

Meeting of Combined Sections

Third Day, Thursday, June 26th:

9.00 a.m. "Symposium on diseases of the stomach," introduced by Dr. Alexander McPhedran. Drs. Martin, Montreal; Aaron, Detroit; Stockton, Buffalo; and others, will discuss the medical side. Drs. Paterson, London, England; Ochsner, Chicago; C. E. Starr, Toronto; Angus McLean, Detroit; Archibald, Montreal; McKechnie, Vancouver, and others, will speak on the surgical side.

2.00 p.m. "Symposium on diseases of the thyroid," introduced by Dr. A. J. Ochsner, Chicago. Drs. Hoover, Cleveland; Lafleur, Montreal; Barker, Baltimore; H. B. Anderson, Toronto, and others, will deal with the medical side. Drs. Halpenny, Winnipeg; Bruce, Toronto; Olmsted, Hamilton; Bingham, Toronto, and others, will speak on the surgical side.

Section of Ophthalmology and Oto-Laryngology

The following have promised papers in this section: Dr. A. T. Woodruff, Chicago; Dr. Price Brown, Toronto; Dr. Perry Goldsmith, Toronto; Dr. J. Hunt, Fort William.

Section of X-Ray Workers

Dr. Pirie, Montreal: Title later.
Dr. Wilkins, Montreal: "Bismuth diagnosis in gastric ulcer."
Dr. P. M. Hickie, Detroit: "Radiographic findings in late syphilitic bone disease."
Dr. Emil Beck, Chicago: "Eight years' experience in the treatment of abscesses and sinuses with bismuth paste."

Latern demonstration of x-ray work in which several will take part.

There will also be an exhibit of x-ray work.
Book Reviews


The sixth volume of "Keen's Surgery" which has been eagerly awaited, reached us on March 22nd. The five volumes originally contemplated in this system of surgery were published between the years 1906 and 1909. Although the time that has elapsed since the publication of the first volume, seven years ago, is not very long, yet, as Dr. Keen says in the preface, the progress of surgery has been so rapid that some of the earlier matter is obsolete, and there is much new material which should be placed before the profession. Accordingly, the authors were asked to supplement their previous chapters, and some new sections have been introduced into this volume. The most important of these include a fuller description of the apparatus for operating on the thorax, the method of anaesthesia by intratracheal insufflation, by nitrous oxide, and by the intravenous introduction of ether. Amongst other subjects newly treated are: the surgery of the hypophysis; the treatment of cancer by fulguration and desiccation; the use of iodin as a disinfectant of wounds; and the use of salvarsan in syphilis. One notices several new names in this volume, and the omission of others on account of death. Dr. Keen mentions with sympathetic appreciation, Professor John C. Munroe, Professor Zachrisson, Surgeon-General O'Reilly, Professor Cabot, and Professor Horwitz. To this volume there are sixty-one contributors, and the names include those of well-known surgeons in the United States, Canada, England, and Germany. It contains one hundred and fifty-seven chapters with an index to the volume, and a general index to the whole system. The indexes alone cover one hundred and fifty-six pages. The opening chapter is by Professor Adami, of Montreal, in which he considers the advances which have been made in the study of inflammation during the past eight years. His contribution is really an amplification of his article
which appeared in the first volume in 1906. He lays especial stress upon treatment, and has considered quite fully the various newer methods. He quotes Shäffer as authority “that wet bandages separated from the surface by a water-tight membrane and left unchanged as long as possible” form the most satisfactory and simplest means of aiding the inflammatory process and bringing it to a favourable termination. Dr. George E. Armstrong, of Montreal, contributes the chapter on “Surgery of the Infectious Diseases.” It is rich in statistics, and the author shows conclusively that “each year there is a lowering of the mortality from perforation [in typhoid] due to greater alertness on the part of physicians, earlier diagnosis, and improved technique.” He quotes his experience in the Montreal General Hospital, where twenty-two perforations occurred, nineteen of which were operated upon, and nine recovered. We hasten to call attention at the earliest possible moment to this important work which is now brought to a completion; but it should be added that this volume is quite complete in itself, and is of value not only as a part of a general system, but also as an independent work upon the various subjects with which it deals, and these, in the main, include the whole of surgery. Any notices of this volume would be quite imperfect without a reference to the chapter on Thoracic Surgery, as this is the division in which progress has been most marked in recent years.


For fifteen years Dr. Leonard Williams’s little book has proved itself to be a useful compendium of knowledge for the practitioner, young and old. It deals with the subject which forms more than nine-tenths of the average physician’s daily work, namely the treatment of minor maladies. It is not merely a collection of prescriptions: it is a well-reasoned treatise, and will be found useful on every working day.


Forty thousand copies of this book have been distributed. It contains one hundred and twenty-eight pages and the cost in
large quantities is incredibly small. The contents deal not alone with tuberculosis: they are, in addition, a summary of personal hygiene and public sanitation for common use. The work was undertaken by the University of St. Francis Xavier College in cooperation with the medical profession of the district. The good which is being accomplished by their self-sacrificing labours is incalculable.


This book is precisely what it is described to be, namely, a hand-book, and not a treatise. It does its business well, and has done so for the past ten years. In that time the book has passed through four editions. A student can desire nothing better: the practitioner of medicine will find it ample for his needs.


It is hard to assign this book to its proper category. It contains something of the principles and something of the practice of surgery. It is a guide for operating. It partakes somewhat of the nature of a book on minor surgery and is especially strong in bandaging, dressing, and other forms of technique. There is something in it for everybody and not too much of any one thing. The illustrations or rather pictures are very realistic. A very complete list of instruments and dressings is appended.


The first impression one receives of this book is that it is something entirely new, as the present reviewer does not remember
having seen a work devoted exclusively to the eyes of animals. A more careful reading discloses the fellowship between man and his more humble congeners in respect at least of the visual apparatus. The anatomy is practically the same in man and in the higher animals, and both are subject to the same accidents and to diseases which are very similar. Yet veterinary surgeons will find in the book everything which pertains to their special work set forth in a form which is easy of comprehension.


The modern hospital is an institution in itself. It has developed its own architecture to meet the special work which is carried on within the building. Its type is as distinct as those of a cathedral, a museum, or an art gallery; and beauty and design is not incompatible with its function. At this moment there are few cities, in America at least, in which new hospitals are not going up or additions to old ones being made. Besides, the internal economy of a hospital has been somewhat reduced to a standard which must be learned by an architect who is willing to be guided by experience rather than by preconceived notions. In all these reasons the present work is most timely. It is a noble volume of 644 pages in octavo, beautifully printed and splendidly illustrated. The authors do themselves something less than justice in the preface. They err by depreciation and understatement. They employ the terms "shortcomings," "unfinished character," "tremendous weakness." They defend themselves from the hypothetical charge that the mention of firms and individuals and the articles they manufacture "was done by way of advertising and perhaps for a price." On the contrary, this information is an important element in adding to the value of the work, and the authors give the impression of entire sincerity. We should consider that medical boards and architects who are responsible for the erection, equipment, and maintenance of hospitals were remiss in their duty if they did not acquaint themselves with this body of knowledge which has been
put at their disposal. The book is not for these alone: it is for every physician who has occasion to enter within the doors of a hospital.


The author has ample warrant for writing this book. He was trained in the New York Research Laboratory, and was in charge of the arrangements for dealing with the epidemic which began in Texas in October, 1911, and lasted well into the following year. All that it is necessary to say is that this book is the last word on the subject up to the present moment. In contains an account of everything that is known about the disease and about the treatment of it. It is a book for the laboratory worker, for the physician, and for the officer of public health. Dr. Sophian knows all about the subject and he tells it without restraint on these pages.


There is a peculiar charm about all the books which come from the Glasgow University Press. If Messrs. Maclehose have ever printed a bad book, the present writer has never encountered it. The present one is issued in Canada by the Macmillan Company, and it is marked by beauty of form, and nice scholarship. In recent years, chiefly through the initiative of James McKenzie, diseases of the heart have come into unusual prominence, and this book may be regarded as one outcome of his fresh research. It can be read in an evening and the task will be a pleasant and profitable one.


The first edition of this book appeared when Professor McMurrich was professor of anatomy in the University of Michigan, and in this, the fourth edition, the results of all important contributions upon the subject have been incorporated without any considerable increase in the bulk of the volume. The book, in short,
is a concise statement of the development of the human body, and a foundation for the proper understanding of the facts of anatomy. Where the embryology fails to offer the required data, the author has had free recourse to the facts of comparative anatomy. The subject of the book is an abstruse one, but Professor McMurrich has brought it within the comprehension of the student. The book has long been a standard, and is likely to remain so until the time comes for another revision. It may be looked upon as a product of Canadian medicine, and as such, it is entirely creditable. It gives full expression to the newer tendencies in the teaching of anatomy.


These lectures were given at the London Hospital in the year 1902, and were published serially in the *Clinical Journal*. Two years later they were gathered together in the form of a book, and since that time they have gone into the third edition. They are not intended as an exhaustive treatise on the diseases of childhood, although it must be admitted that they leave little unsaid. The subject has been approached from a purely clinical standpoint, and the question of treatment has been dealt with in some detail. In this edition the whole book has been revised and certain new lectures have been added, namely, those on Coeliac Disease, Primary or Croupous Pneumonia in Childhood, Bronchial Pneumonia, Hysteria in Childhood, Disorders of the Heart, and Some Commoner Affections of the System in Childhood. The book is published by Edward Arnold in London, and in Toronto by the Macmillan Company of Canada. Dr. Hutchison is physician to the London Hospital, and at the time of giving these lectures was in charge of the out-patients in the Hospital for Sick Children, Great Ormond Street. The form of the lecture is strictly preserved and it has a charm of its own, especially when it is handled by so competent a person as the present author. There is much in the book which escapes consideration in more formal text-books, and the work is intimately associated with the author's experience.

These lectures are quite familiar to persons who practice this specialty, and they will be glad to have them in the present revised form. There are sixty-nine illustrations, and thirteen diagrams, many of which are of remarkable excellence. The book is governed throughout by a refreshing common-sense.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


Proceedings of the Royal Society of Medicine, Vol. 6, No. 5, March, 1913, with Supplement. Price, 7s. 6d. net. London: Longmans, Green & Company.


THE study of comparative anatomy makes clear that the colon is not of the same functional importance in man as in some of the lower herbivorous animals. This seems even more clearly true of the appendix; and this, with the pineal gland and the pituitary, have been regarded as the most striking of those vestigial remains, which were such useful aids to those who fought the battle of the evolutionary theory. We have been forced to modify our extreme views in regard to the purely vestigial nature of the pituitary, and even of the pineal gland, by the recent studies of their function; though this is far different from that which they fulfilled when they first appeared. It has been shown by Arbuthnot Lane and others that life is quite possible after the removal of the large intestine: and that, indeed, in certain cases, the patient's state may be greatly improved by this procedure. From this fact, together with a biased consideration of the physiology of the colon, extremists have drawn the conclusion that man would be better off if it did not exist.

One of the fashionable complaints of the day is "intestinal toxaemia." This rubric now covers most of the sins formerly ascribed to the defects of the liver. We have, however, not yet reached the point where we complain of having "a colon." Certain types of intestinal toxaemia are, however, taking form; and Van Noorden has described under the name of enterogenous toxic polyneuritis a symptom complex, which he considers to be due to the absorption in undue amounts from the bowel, of a chemical body, which his assistant Eppinger has isolated in an impure state, and which on injection into animals causes some of the typical symptoms, e.g., cardiac vagus stimulation and resultant slowing. It is interesting to note that this complex, including such symptoms as headaches, cold hands and feet, fleeting muscular pains, is very similar to that described by Arbuthnot Lane and Chapple; and which, these authors consider, calls for operative interference.

Read before the Section of Surgery: Toronto Academy of Medicine, April 15th, 1913.
Mellanby and Twort have isolated from the faeces a bacillus which is able to produce from one of the amino acids normally formed in digestion of proteins a highly active body, histamine. This body has marked actions on the blood pressure, and on smooth muscle organs generally, and especially on the uterus. It is but one of a similar series of bodies which may be produced daily in our intestines; but which seem to be destroyed by the liver, and at all events normally fail to produce their typical effects, though they may do so in extreme cases. It may further be noted that Bain has obtained two of these bodies by extracting large quantities of urine. It is by no means remarkable that such a bacillus has been found amongst the manifold flora of the intestinal canal. Strasburger and Steele have shown that from one-fifth to one-third of the dry weight of the faeces consist of bacteria. Their bodies yield about one-half of the faecal nitrogen, something like 128,000,000,000,000 bacteria being voided daily. Most of these, doubtless, develop and flourish in the large bowel.

These facts point to the large bowel being indeed a cess-pool; but are we prepared to believe that a part of the bowel so highly specialized in its anatomical form, its movements, and its biochemistry, is merely a useless seat of fermentation? Anatomically, this part of the gut is cut off from the ileum by a very perfect and active valve, as has been shown conclusively by Keith, Elliott, and Cannon. This valve prevents, under normal conditions, any passage backwards of the mass in the colon. It doubtless does much to prevent the cess-pool extending farther up. In the colon of man we find the same sacculated structure which is so well marked in the herbivora, where well developed rhythmic movements retain the food-stuffs in this part of the bowel for long periods, during which the action of bacteria splits up the otherwise indigestible cellulose, setting free the valuable contents of plant cells. These rhythmic movements also occur in man, and progress through the large bowel is slow. Food reaches the caecum in approximately four and a half hours, according to Hertz; reaches the transverse colon two hours later; the descending colon some two and a half to three hours later still, and the sigmoid only some twelve hours after being taken. It may be voided eighteen hours after taking, but usually much later. Passage through the small bowels is slightly accelerated if the food contains much cellulose. The total weight of the material entering the caecum decreases about one half or more before being voided, the water from ninety to seventy-five per cent. This also varies greatly with the character of the food.
The exceedingly thoroughly cooked food and rich protein and fat dietary of highly civilized society has little need of prolonged fermentation, and most of the proteins, fats, and soluble carbohydrates have disappeared before the ileocaecal valve is passed. But where man is forced to live on a coarser vegetable diet, as in China, where, owing to the scarcity of fuel, food is not well cooked, the loss, probably twenty-five to forty per cent. of the vegetable protein, and twenty to thirty per cent. of the carbohydrates, would be serious, did not the fermentation processes of the large bowel tend to reduce it.

The large intestine, too, has important excretory functions. Much of the calcium and phosphates of the food are now known to be excreted by the large bowel (Rey),¹² and probably nine-tenths of the iron. How important these functions are we hardly know as yet. It may be recalled that some drugs, such as morphia, are excreted here.

Arbuthnot Lane advocates in those cases where operation is indicated, complete extirpation of the large bowel, the ileum being anastomosed preferably to the large bowel at the pelvic brim. There is thus no considerable length of large gut to act as reservoir. It may also be recalled that absorption of fluid from the lower part of the large bowel, descending colon, and sigmoid is much slower than from the upper part. Yet we gather that his patients defecate in a normal fashion, needing, indeed, in nine of the fifty cases reported by Chapple,² an aperient from time to time. Now, as the food-stuffs pass rapidly, but steadily, through the small bowel, which is usually empty five to seven hours after a meal, it seems clear that as these patients do not defecate at frequent intervals, the lower part of the ileum must have taken on the function of the large bowel. The stools, we are informed, are usually well formed; and hence there must have arisen a reservoir in the lower end of the ileum. In this reservoir fermentation and putrefaction must go on as in the large bowel, and the small gut is without the protection of the ileo-caecal valve.

In extreme cases, which have been operated on, the patients undoubtedly get a fresh start; and, having learned the dangers of bad habits, are careful to avoid constipation, and all is well. Yet a careful study of the patients on whom colectomy has been done, in regard to the character of their bowel movements, their power to utilise various foods, and the development of their intestinal flora, is needed before we are free to conclude that the large bowel is merely a dangerous vestigial remnant.
References:


Toronto

V. E. Henderson

BRITISH COLUMBIA

The wing which has just been added to the Prince Rupert Hospital was opened by the Hon. Dr. Young on March 24th, last.

A conference was held on April 30th of representatives of the municipalities surrounding Vancouver and included in the term Greater Vancouver. It was resolved that a joint commission should be formed to govern all the hospitals within the districts under consideration and a committee of three was appointed to interview the Vancouver city solicitor with the object of having a bill prepared which should embody the suggestions made at the conference and should be presented at the next session of the legislature.

The rate per patient paid to the Vancouver General Hospital by the city has been increased from forty-five to sixty cents, and in April a grant was made of $10,000 for special purposes and $65,000 for general purposes.

Dr. W. A. Whitelaw, the superintendent of the Vancouver General Hospital, has resigned; his resignation would have taken effect on the first of this month, but he has been asked to continue his duties until the beginning of July. The number of hospital days during the month of March amounted to 10,570, the largest number in the history of the hospital. Four hundred and thirty-nine patients were admitted during the month, 330 being already in the hospital; 428 were discharged, and 31 deaths occurred.
Retrospect of Pathology

I. TUBERCLE BACILLI IN THE CIRCULATING BLOOD


The authors examined fifty cases of pulmonary tuberculosis in various stages. The technique used was the Kurashigi-Schmitter method which consists in taking 1 c.c. of blood with 3 per cent. acetic acid, centrifuging with antiformin and washing with distilled water. Acid-fast rods indistinguishable from tubercle bacilli were found in the blood in all the cases as well as in the blood of five apparently normal persons. The distilled water was tested by the same method and found to be negative.

2. Errors in the Diagnosis of Tubercle Bacilli. Dr. Bontemps, *Deutsche Medizinische Wochenschrift*, March 6th, 1913.

Tubercle bacilli can remain on slides and in centrifuge tubes. Sulphuric acid and potassium bichromate should be used in cleaning the glassware as the bacilli can resist the acid alone. Care should be taken in ruling out other acid-fast organisms, e.g., the smegma bacillus, and organisms which occur in milk, butter and water. Lycopodium spores which are often used for dusting pills may be inhaled. These are acid-fast.


By way of introduction Kahn mentions the fact that acid-fast rods have been frequently found in the blood of tuberculous patients. These are absolutely acid-fast and have usually been demonstrated by the acetic acid-antiformin method. Using this method Kahn found it impossible to draw the line of distinction between true bacilli and the products of chemical change and contamination. He notes that other authors do not appear to have
this difficulty. He also mentions the discrepancy between the results of animal inoculation and microscopical examination.

His research is divided into animal experiments which are to be reported later and an investigation of the microscopic method of which this is a preliminary report. Bechmeister and Reuben by the acetic acid-antiformin method have recently found acid-fast rods in the blood of normal men and rabbits proved at autopsy to be free from tuberculosis. Kahn, having in mind the fact that lecithin and cholesterin enter into the composition of both the waxy capsule of tubercle bacilli and the stroma of red blood corpuscles, tested masses of the stroma from the corpuscles of horses' blood and proved them to be acid-fast. He also found that by the acetic acid-antiformin method some of the stroma of red cells retains the acid stain although most of this material stains blue or violet. The acid-fast masses when compared directly with tubercle bacilli were found to take fully as deep a red stain. His general conclusion is that the microscopical method is of no value and that the question of tubercle bacilli must be settled by animal inoculation.

II. THE PATHOLOGY OF PERTUSSIS


I. In the trachea in early cases groups of minute bacilli are seen in the cilia of the epithelial cells. Later these bacteria are less numerous. There is no necrosis and but little exudation. A few polynuclear leucocytes penetrate the epithelium and lie in the lumen and a few lymphocytes congregate in the underlying tissues. The characteristic symptoms of the disease are appreciably due to the mechanical clogging of the cilia by the masses of bacilli.

Apparently there is some absorption of toxin from the growing bacilli. This is evidenced by:

1. The exudation of a few leucocytes.
2. The proliferation at the germinal centres of lymph nodes and spleen of endothelial cells which are phagocytic for normal cells. They are probably producing an antibody.
3. The characteristic lymphocytosis.
4. The production of an antibody which with the Bordet-Gengou bacillus fixes complement.
II. Animal experiments were carried out as follows: A puppy infected with sputum from a case of the disease showed the characteristic tracheal lesion. By the use of the Bordet potato-blood-agar medium two pure cultures were finally obtained from the sputum of patients with the disease. Three monkeys inoculated with pure cultures showed no symptoms and were not killed. Of six puppies inoculated two showed the characteristic lesions microscopically and a pure culture was obtained from one of them. Four others inoculated showed no symptoms but yielded a pure culture of the bacilli. Four rabbits inoculated showed no symptom but emaciation, but in all the characteristic lesions of the disease were demonstrated.

A. M. Burgess.

Obituary

Dr. Edward A. Preston, of St. John, New Brunswick, died from gastritis on May 4th, in the fifty-ninth year of his age. For the past thirty-two years he had practised in St. John, where indeed most of his life had been spent. He was born in Providence, Rhode Island, but went to St. John when five years of age. He graduated from Long Island Medical College. Dr. Preston was a past master of St. John's Lodge F. and A.M., and a member of the Canadian Order of Foresters and the Independent Order of Foresters. He leaves two sons and three daughters.

Dr. Amelia Yoemans, of Calgary, died from diabetes, April 22nd, in the seventy-second year of her age. Mrs. Yoemans was born in Quebec and was the daughter of Peter LeSueur, of Ottawa. She married in 1860 and, after her husband's death, took up the study of medicine at the University of Michigan, where she obtained her M.D. degree in 1883. She then went to Winnipeg and became a member of the College of Physicians and Surgeons of Manitoba. She practised in Winnipeg for sixteen years. Dr. Yoemans was a brilliant public speaker and was deeply interested in all questions pertaining to the welfare of women, in which connexion she held many important positions. She leaves two daughters.

Dr. Egerton H. Hart died recently in China from typhoid fever, in the forty-fifth year of his age. Dr. Hart was born in
Toronto. About twenty years ago he went to China, where he was appointed official surgeon to the Chinese royal family. He was also in charge of a hospital which was built by his father, the late Dr. V. C. Hart.

Dr. Joseph L. G. Masson, of Terrebonne, Quebec, died April 19th, in the fiftieth year of his age. Dr. Masson was born at Terrebone and was educated at St. Mary's College, Montreal. He obtained his M.D. degree from Victoria Medical College. For some years he was resident physician to the Hôtel Dieu, Montreal. Later he went to Paris, where he did post-graduate work. Some years ago, however, Dr. Masson gave up his professional work and undertook the management of the estate of the Hon. Joseph Masson. He leaves a widow and four children.

Dr. S. C. MacLean, of Spencerville, Ontario died April 17th, in the sixty-seventh year of his age. Dr. MacLean was born in the township of Augusta and graduated from Queen's University in 1874. He practised in North Augusta, Bishops Mills, and Spencerville, where he was well known and much respected.

Dr. James McB. Woods, of Toronto, died April 24th, in the seventy-fourth year of his age. The cause of death was the fracture of the skull, the result a fall. Dr. Woods was a son of the late James Woods, a Peel County farmer. He took his degree in medicine from the old Toronto Medical College and had practised in Toronto for the last thirty-three years. He leaves a son and three daughters.

News

Maritime Provinces

A new hospital to accommodate forty patients is to be built at Glace Bay. The cost is estimated at $42,000. The members of the board of management will be elected by the contributors.

The following are the names of those who have graduated in medicine from Dalhousie University: Doctor of Medicine and Master of Surgery—Geoffrey Alden Barss, Dartmouth; Roderick
Owen Bethune, Baddeck; Alex. Rae Campbell, B.A., Halifax; Francis Stanislaus Finlay, Halifax; John Parry Harrison, Dunville; James McGregor Johnson, Tatamagouche; Albert Hugh Mackinnon, Pictou Landing; John Edminstone Park, New Glasgow; Arthur Augustine Cuthbert Wilson, Springhill Mines.

Dr. N. E. McKay, professor of surgery at Dalhousie University, has resigned. On the occasion of his last lecture, he was presented by his students with an address setting forth their appreciation of his worth as surgeon and teacher and of the sympathy and help which he was always ready to give them. The address was accompanied by a gold signet ring bearing the names of the donors.

At a recent meeting of the Charlottetown Board of Health, a suggestion was made by the health officer, whereby the trustees of the Prince Edward Island Hospital would erect and equip a contagious disease hospital, if the city or the government would guarantee the interest on the cost. The matter of food inspection also was considered and a resolution was passed to urge upon the government the expediency of passing certain laws in this connexion.

ONTARIO

The following cases of contagious disease were reported in the province during April: smallpox 120 cases, 1 death; scarlet fever, 279 cases, 14 deaths; measles 1,422 cases, 10 deaths; diphtheria, 161 cases, 19 deaths; whooping cough, 23 cases, 3 deaths; typhoid, 69 cases, 14 deaths; tuberculosis, 149 cases, 105 deaths; infantile paralysis, 2 cases, 1 death; cerebrospinal meningitis, 8 cases, 6 deaths.

A series of investigations are to be undertaken during the summer, to determine the amount of sewage pollution in the great lakes and international boundary waters. The work will be under the direction of Dr. J. W. S. McCullough secretary of the provincial board of health. As a preliminary step, a laboratory has been opened at Kingston, where a portion of the work will be carried on.

Seventy-two patients were admitted to the Brantford Hospital during the month of April; fifty-eight of these were discharged and at the end of the month there were fifty-one patients in the hospital.
The sanatorium which is being built at Weston for the treatment of children suffering from tuberculosis will accommodate from eighty to one hundred patients. It is beautifully situated on the banks of the Humber and has an open air schoolroom on the roof. It is to be called the Queen Mary Hospital and will be opened by Her Majesty, who will press a button at Buckingham Palace. The cost of the sanatorium has been about sixty thousand dollars.

At the beginning of May there were sixteen cases of smallpox in the Swiss Cottage Hospital at Toronto. The hospital was first established in 1891, when an outbreak of smallpox occurred; it was a modest frame building quickly erected to meet the pressing needs of the time. During the twenty years of its existence the hospital has been in the charge of Dr. Tweedie and, during this time, three cases only have proved fatal.

For several weeks scarlet fever has been unduly prevalent in Toronto. During April sixty-three cases were admitted to hospital; fifty-five cases were discharged and three deaths occurred. At the end of the first week in May, it was stated that there were ninety-three cases of the disease in the city.

The cost of the new General Hospital at Toronto, when it is completed, will amount to about $3,400,000. It will be one of the most modern and best equipped hospitals on the continent and will accommodate nearly seven hundred patients. It is expected that the public wards will be opened this month; the private wards are not yet quite completed.

It is proposed to add to the Belleville Hospital a modern operating room and, for this purpose, $3,000 is needed. Over $2,000 already has been subscribed and it is hoped that the remainder will soon be contributed.

It is the intention that a hospital shall be built at Cobourg. For this purpose $10,000 was bequeathed by the late William Black and $20,000 by the late John Helm, of Port Hope. It is hoped that the citizens will subscribe the $15,000 which still is required before the hospital can be commenced.

Several cases of typhoid have occurred at Seaforth, two of which have resulted fatally.
A balance of $18,000 still remains of the money collected last year for relief after the forest fire in the Porcupine district. This sum is to be expended upon hospitals, which it is proposed shall be built at Cochrane and at Porcupine. If the hospitals are built, the municipalities are prepared to give the sites.

The Canadian Mining and Finance Company have established a hospital at Timmins for the benefit of the men employed in the Hollinger mines.

The equipment for the operating rooms of the surgical wing of the new General Hospital at Toronto has been provided by Mr. J. C. Eaton. The wing itself was given also by Mr. Eaton as a memorial to his late father.

With the accommodation provided by the new wing which was opened in April, the Berlin Waterloo Hospital contains sixty-five beds. The cost of the new wing was about $35,000.

Two isolaton cottages, one for diphtheria and one for scarlet fever, are to be built on Mount Misery near the smallpox hospital at St. Thomas. The hospital itself, which was built in 1888, is badly in need of repair.

During March 205 patients were admitted to the London Hospital, 182 patients were discharged, 14 births and 15 deaths occurred; 124 patients were treated in the outdoor free dispensary.

Dr. T. A. Lomer, of Montreal, has been appointed medical officer of health at Ottawa at an annual salary of $4,000.

Several cases of smallpox have occurred in Waterdown. There had previously been a good deal of chicken-pox in the town.

The by-law to grant $30,000 to the Guelph Hospital has been passed at last. The money will be expended on the hospital building and the east wing will be entirely rebuilt. The plans have been prepared and the work will be commenced at once.

The Bowmanville Hospital was formally opened on March 26th, last.
The following is the list of the graduates from Queen's Medical College: Degree of M.D., C.M., W. Boake, Vancouver; G. W. Burton M.B., Great Shemogue, New Brunswick; W. Fizzell, Schomberg; W. G. Hamilton, M.B., Elgin; H. M. Harrison, M.B., Kingston; J. L. Tower, B.A., Belleville; G. N. Urie, B.A., Deloraine, Manitoba.


Prize list: Faculty prize in anatomy, S. R. McGregor; faculty prize, $25.00, for highest marks on second year examinations in anatomy, physiology, histology, chemistry, and materia medica, C. B. Waite; faculty prize for highest percentage of marks on second year examination in materia medica, C. B. Waite; the N. F. Dupuis scholarship for highest marks in chemistry of the second year, value, $60.00, G. T. G. Boyce; the Dean Fowler scholarship for highest percentage of marks on the work of the third year, value $50.00, D. E. Bell; faculty prize for best written and practical examination in third year pathology, M. D. Graham; the Chancellor's scholarship, value $70.00, for highest percentage of marks on five years' course, not granted; medal in medicine, E. W. Boak; medal in surgery, V. T. Lawler.

QUEBEC

It is probable that a new hospital will shortly be built at Sherbrooke.

The annual meeting of the Alexandra Hospital at Montreal.
was held April 23rd. On January 1st, 1912, 92 cases were undergoing treatment in the hospital and during the year 778 cases were admitted; 31 deaths occurred, the death rate being 4 per cent. The daily cost per patient was $1.98. The diseases treated included 532 cases of scarlet fever, 162 cases of diphtheria, 73 of measles, and 81 of erysipelas. The plans have been prepared for a nurses’ home, which will be built, at a cost of $60,000, on the lot adjoining the Reid pavilion. A central power station and a laundry are also urgently needed; the cost of these would be at least $50,000.

Financial assistance is needed at the moment by the Women’s Samaritan Hospital at Montreal, which was established nineteen years ago. The present building is to be sold; no decision as yet has been made as to the situation of the new hospital building.

The fifth annual convention of the Sanitary Services of the province of Quebec will be held in Montreal on September 16th, 17th and 18th, 1913.

The following is the list of cases of contagious disease reported in the city of Quebec during the months of January, February, and March of this year: diphtheria, 32 cases, 9 deaths; scarletina, 96 cases, 1 death; measles, 28 cases, 2 deaths; variola and variolide, 25 cases; tuberculosis, 25 cases, 21 deaths; chicken-pox, 2 cases.

It is possible that a Protestant Home for Incurables will soon be built in Montreal. The question was discussed at the annual meeting of the Montreal Protestant House of Industry and Refuge and an estimate of the cost is being prepared.

During the months of January, February, March, and April, there were reported in Montreal 767 cases of scarlet fever and 1,644 cases of measles. The contagious diseases reported during the week ending April 26th, were: diphtheria, 17 cases, 4 deaths; scarlet fever, 41 cases, 8 deaths; tuberculosis, 49 cases, 28 deaths; smallpox, 8 cases.

MANITOBA

A by-law is to be submitted to the ratepayers of Brandon, to grant $100,000 to the hospital. If the money is voted, it will be expended on extensions to the building and, in particular, on a much needed maternity ward.
The salaries paid to probationers in the Brandon Hospital have been increased. Instead of $6, $8, and $10, they will receive in future $10, $12, and $14 a month.

Several cases of smallpox have been reported in Winnipeg.

The question of building an isolation hospital at Chase is under consideration. A committee was appointed recently to choose a suitable site and to bring the matter before the provincial government.

The annual meeting of the Saskatchewan Medical Association will be held in Regina on the 16th, 17th, and 18th of July. Everything possible is being done to make the meeting a successful one. An interesting programme is in course of preparation and arrangements are being made for the entertainment of those who attend, special provision being made for the entertainment of physicians' wives and visiting ladies. The secretary of the association is Dr. Arthur Wilson, 221 Cameron Street, Regina.

SASKATCHEWAN

At a recent meeting held at Wynayard, an association of physicians was formed by members of the profession practising in the district between Theodore and Lanigan. Dr. Johannesson was appointed chairman and Dr. H. R. Ross, both of Wynayard, was appointed secretary-treasurer of the association.

The new St. Paul's Hospital, which is being built at Saskatoon by the Sisters of Charity, will be completed next September. A request has been made to the city council for a grant of $5,000 and the matter is under consideration.

A medical inspector of schools is to be appointed at Prince Albert. The remuneration will be $1,000 a year.

The plans are being prepared for the new hospital to be erected by the Sisters of Providence at Moose Jaw. A building which will accommodate fifty patients, and an administration building, will be built first, and, later, storeys will be added until there is room for two hundred patients. The hospital will be placed on South Hill.
It is proposed to build a new isolation hospital at Edmonton this year. No decision as yet has been made as to the exact plan of the proposed buildings.

Dr. A. D. Cullbeck has been appointed medical officer of health at Hardisty to succeed Dr. MacRury who recently resigned.

Three hundred and forty-six patients were admitted to the Calgary General Hospital last March; the number of hospital days was four thousand nine hundred and forty.

The third annual congress of the Canadian Health Association will be held in Regina, September 18th, 19th and 20th, next.

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Canadian Literature

Original Contributions

*Dominion Medical Monthly*, May, 1913:

Treatment of Diffuse Septic Peritonitis . . . . . . . . . H. A. Bruce.

*Le Bulletin Médical de Québec*, April, 1913:

Ce que la Compagnie National Cash Register, de Dayton, Ohio, a fait pour le bien-être social de ses 3,500 employés . . . . . . . . . . . . . E. Nadeau.
Quatre Observations de Grossesse extra-uterine . . . . . . . . . . . . . P. C. Dagneau.

*The Canadian Journal of Medicine and Surgery*, April, 1913:

Diet in its relation to Disease . . . . . . . . . . . . . . . . . . . . H. B. Anderson.
Ideas concerning the Causation of some cases of Pancreatitis . . . . . . . . . . . . . . E. Archibald.
Abdominal Pain—Its Diagnostic Significance . . . . . . . . . . . . . J. F. Erdmann.

*The Western Canada Medical Journal*, April, 1913:

The Suppression of Venereal Diseases . . . . . . . . . . . . . . J. W. Barrett.
Medical Service of the State Hospitals . . . . . . . . . . . . . . C. F. Read.
The Canada Lancet, April, 1913:

Chronic infections as a cause of Chronic and Sub-acute Rheumatism (Arthritis) . . . . C. Stewart Wright.

The Public Health Journal, April, 1913:

The principles and results of my treatment of tuberculosis . . . . F. F. Friedmann.
What the Daughters of the Empire are doing towards the prevention of Tuberculosis . . . . Mrs. Gooderham.
Of what value are Sanatoria as a Public Health Measure . . . . W. B. Kendall.
General Food Inspection . . . . R. Awde.
Heredity and Public Health . . . . A. P. Reid.

Le Journal de Médecine et de Chirurgie, March, 1913:

Le traitement du Cancer . . . . E. Saint-Jacques.
Inclusion congénitale des trompes et des ovaires dans le ligament large.— Etude d'embryologie . . . . J. A. Saint-Pierre.
Medical Societies

MEDICINE HAT MEDICAL SOCIETY

The regular monthly meeting of the Medicine Hat Medical Society was held on Friday, April 25th. On this occasion, Dr. C. E. Smyth gave an interesting address on “A recent visit to English hospitals.”

PERTH COUNTY MEDICAL ASSOCIATION

A meeting of the medical men of the district was held at Stratford, Ontario, on Wednesday, April 16th, with the object of forming a medical association. Accordingly, the Perth County Medical Association was formed and the following officers elected: president, Dr. Thomas Sparks, St. Mary’s; vice-president, Dr. A. F. McKenzie, Monkton; secretary-treasurer, Dr. F. J. R. Forster, Stratford. The local secretaries are: Dr. G. R. Deacon, Stratford; Dr. Moore, Listowel; Dr. A. D. Smith, Mitchell; Dr. Stanley, St. Mary’s. The association will hold its meetings in January, April, July, and October of each year at Stratford, Listowel, and St. Mary’s. The next meeting will take place at Mitchell next July. On the occasion of this first meeting of the association, a committee was appointed to arrange a uniform table of fees for the county. The members of this committee are Dr. Quinlan, Stratford; Dr. Nichol, Listowel; Dr. C. F. Smith, St. Mary’s; Dr. A. D. Smith, Mitchell; and Dr. McKenzie, Monkton.

TORONTO ACADEMY OF MEDICINE

The regular monthly meeting of the section of medicine was held in the Academy building on the evening of April 8th, Dr. H. B. Anderson in the chair.

Dr. Clarkson presented a girl, aged sixteen, with a cervical rib which could be easily felt and traced for two and a half inches. She had only complained of pain during the last six months. Dr. Hendrick said that very often symptoms did not appear until after puberty. Dr. Boyer said that symptoms were frequently provoked by an occupation which involved the use of the extended arms.
Dr. H. B. Anderson read the history of a man, aged forty, who had a severe convulsion in June, 1912, followed by a series of convulsions with involuntary movements and staggering gait. He entered St. Michael's Hospital in October. At first he was delirious but later regained consciousness. The left arm was flexed, the left side of the face smooth, double optic neuritis. Knee jerks were equal and exaggerated; the left abdominal reflex absent. There was vomiting on a number of occasions; Wassermann negative. A diagnosis of brain tumour was made, but no localization effected. Under iodides the condition improved somewhat, but the patient died in January, 1913. At autopsy, a tumour was found in the right frontal lobe which encroached on the right ascending convolution. Dr. John Ferguson said that iodides had an effect on the area of vascularity surrounding a tumour, irrespective of its luetic or non-luetic character.

Dr. Goldie presented a case report of a man first seen in January, who was supposed to have pulmonary tuberculosis. He had lost weight, had a cough and expectoration. It had come with "a cold" four months before. He had had night sweats, a poor appetite, and dyspnœa. There was limited expansion at the apices with a full percussion note and sibilant rales all over the chest. No tubercle bacilli were found in the sputum. On April 6th, he had gained twenty pounds. His appetite was good and he looked well. In association with symptoms and a history of two years' work at granite cutting, the diagnosis of non-tuberculous fibrosis was the most likely one. Dr. Oille asked how the particles of stone got into the lung and mentioned a case which, at autopsy, showed strong lumbar glands. Dr. John Ferguson said that limestone, slate, and marble particles are comparatively harmless as compared with those of sandstone and granite. Dr. J. H. Elliott said that the definition of the bronchial tree shown in the skiagraph suggested a peribronchitis. The chairman asked whether tuberculin reactions had been tried. Dr. Goldie, replying, said that treatment had consisted largely in cutting off the expectorant drugs which the patient had been taking.

Dr. Buck presented a man, who, a week previously had been struck by a piece of iron just below the clavicle. He complained of pains in his veins, while all the superficial veins of the arm were dilated as far as the neck. Dr. Chambers suggested rest and asked whether citric acid was of value. Dr. Goldie cited a similar case resulting in suppuration in a wound of the finger. Dr. George Wilson said the condition was evidently a thrombosis, not a phle-
bitis. Dr. John Ferguson said that a non-infective phlebitis may exist.

Dr. Thistle reported two cases of syphilitic paraplegia showing improvement after neosalvarsan.

**Case 1.** A man aged forty-nine. He had great loss of power in the legs, incontinence of urine, bed-sores, alopecia, and deafness. The Wassermann was positive. Considered incurable. 0.6 grammes of neosalvarsan were given. In two weeks he could walk. 0.9 grammes were given in December, 1912. The incontinence disappeared and the hearing improved markedly. On February 27th, improvement was still greater. Ankle clonus, however, persisted.

**Case 2.** A man aged forty-nine, had syphilis twenty-three years ago. He was a typical case of spastic paraplegia. He has had six doses of neosalvarsan and has steadily improved. Dr. Boyer said the lesion was endarteritis rather than myelitis. Dr. Chambers asked how much potassium iodide and mercury had been used before. He thought mercury as a rule was not used enough. Dr. Goldie asked the object of the long interval between injections. Dr. H. B. Anderson enquired as to the difference in effect between salvarsan and neosalvarsan.

Dr. John Oille reported two cases of heart-block.

**Case 1.** The heart was hypertrophied, but there was no valvular lesion. There was a slight oedema of the lower extremities. Blood pressure 130-140 m.m. There was a history of attacks of syncope. Venous pulsation in the neck was twice as rapid as the radial pulse.

**Case 2.** A lady, aged fifty-four. Had diabetes and is subject to fainting spells. Tracings were shown and analyzed.

The election of officers for the ensuing year resulted as follows: Chairman, Dr. J. T. Fotheringham; secretary, Dr. F. C. Harrison; editor, Dr. A. H. Ralph.

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**MONTREAL MEDICO-CHIRURGICAL SOCIETY**

The eleventh regular meeting of the society was held Friday evening, March 7th, 1913, Dr. D. J. Evans, president, in the chair.

**Living Case.** Dr. A. D. Campbell exhibited for Dr. Armstrong a child of six in whom the tendon of the third finger of the right hand had been severed for nine months. A piece of tendon
from the right thigh was transplanted and the child has now a fairly useful hand.

Pathological Specimens. Dr. A. M. Burgess exhibited a number of pathological specimens illustrating infectious lesions of the heart valves, one from acute rheumatic fever the organism from which, when injected into a rabbit, produced endocarditis. Another type of endocarditis illustrated was that not so often associated with acute polyarthritis, in which there usually occur large vegetations. These cases may go on to the healing or healed stage in which there is marked calcification and they are bacteria-free. It is the healing lesions which bring on the terminal result in cases like those presented. In one case the patient died with a history of three weeks double gangrene of both legs, the result of blocking of both common iliacs by thrombosis at the aortic bifurcation.

Case Report. Gun shot wound of the cheek, orbit and forehead with unusual complications, by Dr. A. E. Garrow.

Discussion. Dr. J. Alex. Hutchison: This case is in contrast to one which came into my service in the Montreal General Hospital some time ago. The man evidently committed suicide and shot himself. The bullet entered the neck in front of the angle of the lower jaw, passing through the centre of the tongue, up through the roof of the mouth, across the nose, lodging somewhere in the back of the eyeball, probably in the sphenoid bone. He had very little haemorrhage at the time, in fact he stated that somebody had shot him while he was asleep and he knew nothing about it till he wakened up. He had a very severe secondary haemorrhage somewhere in the mouth, so severe that the source of it was unrecognized at the time. It ceased of its own accord; he had no recurrence and he went out without any damage to the tongue or the nose; the eye was not disturbed at all; the bullet lodged behind the orbit.

Dr. J. M. Elder: Dr. Garrow stated that there was prolonged delirium in this patient and also that he had commencing optic neuritis in the left eye. I would like to know if it was on account of the delirium that the iodoform gauze was changed? It does seem to me that with such an extensive protrusion of brain substance in the presence of sepsis the delirium might be accounted for by an extension of the infection. Also I would like to know what happened to the other eye, whether the condition subsided or required interference?

Dr. A. E. Garrow: When the patient came to the hospital he was apparently mentally clear and, after using a ten per cent. iodoform gauze to pack the wounds, the delirium was noticed at
the end of thirty-six to forty-eight hours so we withdrew the gauze as a possible source of trouble. Dr. Stirling examined the left eye the afternoon the patient came to the hospital and reported a distinct disturbance in the optic nerve of that eye. The patient left the hospital mentally clear and so far as Dr. Stirling could judge with the eye in perfect condition.

**Paper.** The paper of the evening was read by Mr. C. E. Edgett, V.S., of the Department of Agriculture, Ottawa, on "Milk and meat inspection in relation to public health."

**Discussion.** Dr. Laberge: I was much interested in this paper as this question is a vital one to me. As stated by the chairman, our Federal Government has done something to prevent bad food from being sent from this country to another, or from one province to another; but what has been done is insufficient to answer the needs. The whole question is in the hands of the Minister of Agriculture, and I consider it time for Canada to have a Minister of Public Health, who would take this matter in hand from a health point of view. What has been done so far by the Federal Government has been done only from a commercial standpoint, but if this question could be taken up and studied from a health point of view it would be a far greater advancement for the benefit of the country. The question should be taken up from its foundations—from the very beginning—on the farm. The barns, which are not ventilated at all, where the sun is not allowed to enter, and where all efforts towards cleanliness are avoided—that is where tuberculosis develops: the milk is infected; the products from the milk, like cheese and butter, are of a poor quality; and consequently our products on the different markets are of a low value. If at this point we began the education of our farmers, we should certainly, in a very short time, change the present state of affairs. A few years ago, Mr. Chairman, you were on a committee which studied this question of milk supply and we came to the conclusion that it was necessary to send an inspector to the country to see to what extent this evil of uncleanliness existed; and we were very much astonished at the report showing how really bad the conditions were. Since then, a staff of inspectors has been sent out and undoubted improvements have been made on these farms. The farmers, as a rule, are willing to accept the advice of these inspectors, as they see that in the end by better products they are to reap the benefit.

With regard to meat inspection in Montreal, here we have some protection against infected meat; but in the country there is no protection at all, and the meat that we do not pass in the
market here will be slaughtered and sold in the country. Sometimes the farmers will slaughter their animals at home and usually the quarters are brought to the market on Tuesdays and Fridays and sold. But from these pieces alone it is difficult to recognize whether the animals have been healthy or not; a rigid inspection would frequently result in the whole carcass being destroyed.

Dr. J. M. Elder: I would like to express my appreciation of the very interesting address which Mr. Edgett has given us to-night. I was brought up on a farm, and I claim to know something at first hand of the conditions on these farms from which we get our milk. I am glad to hear that the conditions are very much improved since the report of our committee one or two years ago, but I still think there is much to be done. I have occasion to go frequently to stay over night on these farms and I do not quite take the rosy view which Dr. Laberge takes of the improved conditions. In fact I do not think they are much better. Fifteen or twenty years ago we were not so dependent upon the country for our milk supply, Montreal was a much smaller place and the surrounding farms supplied us with this food. In consequence we got our milk much more promptly than we do now. For instance, the milk that is delivered at my door now does not come from the cow that day or even the day before; in fact it is seldom that we can get yesterday's milk. The trouble is to be remedied, if remedied at all, at the source; and while I quite agree with Dr. Laberge that much has been done and much more can be done by proper inspection, still, all you do is to reach the few larger supplies. For instance, a man is under guarantee to supply so much milk a day; if he has not enough for a certain day he goes and borrows it from his neighbours, none of whom have ever had their farms inspected, and though the conditions may be good in all but one, this one may be sufficient to contaminate the whole milk. One sees milkmen on the street every day borrowing milk when they run short, so that reliance on any one man is fallacious. What we are really met with in any attempt to remedy this evil is the British North America Act. If, as Dr. Laberge says, and as was suggested at the last meeting of the Canadian Medical Association, the government could be persuaded to establish a department of health and emigration, and put all these health laws under one minister and one department, thus taking them out of all the several departments under which they come at present, remedial legislation would result. But to do this would, I fear, rouse the Provincial Rights cry—each province says, "I am going to manage my own affairs." It is only in inter-
provincial or foreign trade that this matter can be taken up. Unless there is a Dominion Act we will go on just as we now are, each province trying to protect itself. The conditions described are all too true and we would certainly welcome legislation to better things. Mr. Edgett speaks of sealed bottles for the distribution of milk—who is to seal them? Unless there is an inspector of some sort these bottles will be sealed in the back shops under all sorts of conditions. I do think that this society might very well add its moral force to the demand that the government should take up some adequate system of inspection on these lines, both with reference to the meat we eat and the milk we drink, because it does not seem to me that the British North America Act covers this at all.

I should like to move that the thanks of the Society be tendered Mr. Edgett for bringing together here these facts which mean so much to the health of the community and to us individually.

Dr. J. G. Adami: I have great pleasure in seconding this motion of Dr. Elder's. At the same time I cannot but feel that there is a possibility of going the wrong way to work. We are slowly improving things, but, as Dr. Elder says, very slowly. I would suggest that in this matter of good food and milk there is a way that shows itself for more rapid improvement, a way that we do not seem to have taken up with sufficient keenness, a way in which I think Australia has been in the van, namely, that the portion of our community, which to judge from certain present appearances may not have quite enough wherewith to occupy itself profitably—I refer to the gentler sex—be asked to take this matter up. In Melbourne they have settled the question; they settled it by the Medical Society of Melbourne being taken with the happy thought that the best thing to do was to hand the solution over to the Women's Council pointing out to them that here was a work that they may take up with advantage. The University of Melbourne offered a course on the elementary chemistry of milk and the physics and bacteriology of the milk supply, how milk is produced, what are the dangers in milk, and what can be done in order to get it pure. It offered this course to the Women's Council. The women of Melbourne took up the matter with zest, so that now the members of their milk committee talk with a certain amount of authority on the matter of the production of a pure milk for the market. We all know that whereas a man may have ideas, if you want work done conscientiously, if you want small details looked after, go to the women. And the women of Melbourne went into various places where milk was sold, they looked after the milk cans,
carts, etc., and they rapidly developed such a system that in two years Melbourne—which has a climate which is almost subtropical—as Dr. Barrett says, was in the absolutely enviable condition of having a pure milk in bottles. The women there control the situation; they demanded certain legislation and they got it, and as I said Melbourne has the best supply of milk of a city of its size, probably in the whole world.

Dr. A. R. Pennoyer: I would like to ask if Mr. Edgett could tell us about the meat inspection which is conducted under the Jewish ritual; it is commonly thought that this is better inspected than the meat for the Christian part of the community.

Dr. A. M. Burgess: With regard to milk inspection, while we inspect our dairies and have them clean, have our cattle clean and as far as possible the factor of cow dung and cattle disease eliminated, there is still one part of inspection lacking and that is the medical inspection of the handlers of the milk. In the case of one of the best known milk supplies in the neighbourhood of Boston, which is a very well inspected supply, run on the most scientific lines, with perfectly clean barns, the factor of cow disease is well eliminated. On the route of this milk supply there occurred all at once in a period of three days in Boston, Cambridge, and Brookline, about one hundred and fifty cases of acute tonsilitis. It was found that this was due to a contamination of the milk and was an acute streptococcus infection which was fatal in a great many cases. The source was traced to two towns where the milk for this district was produced and where the disease had been prevalent. Personally I received from another very well known and well conducted milk firm near Boston, a bottle with a thumb mark about three inches long and three inches below the mouth of the bottle. Here was certainly a source of contamination. The point yet seems to me that if you have cleaned up your stables and eliminated cow disease you have yet to have your handlers of the milk medically inspected.

Dr. D. J. Evans: I would like to say that there is only one way that this object of a pure milk supply can be carried out and that is by education; we have to educate the public to the conditions that obtain, and indicate the way in which the remedy lies. This is the only way that we can bring the necessary pressure to bear upon the authorities and force the government to carry out the legislation which already exists. A very careful scheme for the control of the dairy and the milk and its distribution in Montreal and districts has been elaborated. This was drawn up by the combined committees of the French and English Medical Societies
and took a year to study and work out; but the difficulty is, can you get the laws enforced? The demand by the public is not strong enough to support the government of the community in enforcing the necessary legislation. Education is absolutely essential and to bring about education information is necessary. I may say with regard to the question of bottled milk, I have a relative who lives in Shanghai, which is a community surrounded by unspeakable filth and where Europeans have to guard themselves against all kinds of disease, particularly cholera. There the milk and meat supply is cared for by a local board of health, every medical man in the city practically being a member and the work is carried out largely by Chinese. There the milk is bottled and each bottle is sealed by an inspector and the system has had unqualified success in that very dangerous community where all sorts of disease are rife. The meat supply is also controlled in the same way, and it shows what can be done if the public is educated along the proper lines.

Dr. Edgett: I wish to thank the chairman and members of this Society for their kindness and appreciation and for the privilege of bringing these facts before you. Dr. Elder raised the question of who would seal the bottles. This is a difficult problem; there are a great many farms and a great many differing conditions, and a limited number of inspectors qualified for the work. The method that is adopted, and that is working in a satisfactory manner, is for the board of health or whatever organization it is which handles this question, to set up a standard for the milk of that community, place a limit on the bacterial count and on the temperature and other conditions, and as regards equipment, the health of the animals, the condition of the place, food, water, ventilation, stables, utensils, handling of the milk and methods used—all this to be recorded on a score card and marks to be given accordingly. It is not possible for the inspector to be on the job all the time so we have to have some method of controlling all these people and when he takes his score card he has to depend a good deal on the statement of the proprietor and the man who handles the milk. The health department requires a certain number of points on these cards and if it is below a certain standard the privilege of supplying milk to the community is immediately cancelled. The seals on all bottles are dated each day and show the time this milk was sealed. In that way each bottle is traced to the man who sells it, samples are examined, and if the bacterial count is high or the standard low, the certificate is cancelled. This is one way in which we can trace who seals the bottle and it has proved very satisfactory.

Dr. Adami has mentioned the necessity of education along
these lines; that is the important part of the whole question. The
farmers do not always do these things knowing they are bad, they
do them not knowing the difference, not having received the necesa-
ry information on the sanitary production of milk. Those who
are in a position to know how to better conditions generally keep
it to themselves and therefore this information is not given out
broadcast as it should be. Here the government could do much in
giving out proper literature, it does not cost very much and there
would then be little or no excuse for bad conditions on the farm.
Again, as Dr. Adami says, the ladies could do much; and, knowing
that they generally do things thoroughly, if this were left in their
hands and their attention called to it in the proper way, I have no
doubt we should soon see a change.

Dr. Pennoyer mentioned that he had heard that Kosher meat
was the most reliable, the best as regards inspection, etc. From my
experience I cannot agree with him. Taking it from the standpoint
of cruelty to animals alone it is bad. They secure the animal by
the hind leg, raise it up so that its head and shoulder are just
touching the floor and without "stunning" sever the tissues of the
neck, arteries and veins, oesophagus, trachea, with the result that,
the animal still breathing to a certain extent, the ingesta from the
stomach passes into the trachea and bronchi filling the lung tissue;
these lungs would be used for food but here the government inspec-
tor steps in. Any of the inspectors doing work in the slaughter
houses will tell you that the Kosher inspector commonly passes
animals suffering from tuberculosis and other conditions—such
plain conditions as lesions of the parietal pleura have been looked
over, as well as generalized cases of tuberculosis. They have no
idea of pathology or sanitation and therefore do not know the
seriousness of these things. If they want to find out whether there
is an abrasion in the lung they blow it up with their own breath,
which in itself is against the rules of sanitation. Taking everything
into consideration their system is very unsatisfactory. The govern-
ment inspector, however, examines the animal afterwards and
stamps the same if fit for food and thus the public is protected.

Dr. Burgess mentioned a very important point in connexion
with milk delivery, namely, the health of the man who handles the
milk. We know that many of these people are careless, a man
might be suffering from tuberculosis and other contagious diseases
and yet be bottling this milk, putting on the seals, or doing any of
the things in connexion with the handling of the milk from the
farm to the consumer, and here again it is essential that the medical
officer and the veterinarian should work together.
PRESIDENT’S ADDRESS

GIVEN AT THE ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION, LONDON, JUNE, 1913

BY H. A. McCallum, M.D., M.R.C.P. (Lond.)

If I had considered the high honour and responsibility awarded me by the Canadian Medical Association at our meeting in Edmonton last year, I should perhaps have declined the flattering tribute, as much from consciousness of my own inability to fulfill the distinguished position in a manner satisfactory to myself, as from a sense of what is eminently due to the scientific and high professional character of this national Association. However, inadequate as the discharge of my obligations of office may prove to be, I am emboldened by the support of my local colleagues, and the encouragement of numerous members throughout the Dominion, to rely upon your indulgence for whatever is stale and unimportant, or for whatever may be defective in the manner of my address tonight. It has been the practice of my predecessors in office, to sweep the whole horizon of Canadian medicine for objects worthy of the attention of this Association. I plead for the liberty to say painful truth when dealing with matters that affect the honour of our profession, and it is not from love of wounding or pleasure of stinging, that I am dealing boldly with professional defects and offences. I would rightly merit the contempt of you all, did I pass these things by on the other side.

The first thing to challenge our attention, is the relative indifference shown to this Association and what it represents by too many of the eight thousand doctors in the Dominion. The Association has had no mean part in removing narrow, provincial medical prejudices and in bringing about legislation that resulted
in the accomplishment of Dominion registration. The splendid service of the British Medical Association to the profession of the British Isles, in dealing with the terms of Lloyd George’s Insurance Bill, points out what an association can do for each individual member of the profession. The future outlook of Canadian medicine, demands a strong association to confront legislation that would make us a despised arm of the Civil Service. It may be there are greater evils in store for us than being brought under the pay and direction of the Canadian Civil Service. If thereby the public were protected against its own “giant credulity” and our profession purged of its abuses, one could gladly welcome the change. So long as a nation can elect a demagogue to its legislative halls, there is sure to arise the attempt. It may be in the very near future. Let us be armed to secure the most favourable terms. If four-fifths of the profession belonged to the Association, instead of one-fifth, as at present, no attempt could get under way to bring us into the service without our consent.

Previous to the inauguration of the Association Journal, there were practically no permanent members of the Association, except its officers. The membership lasted only during the meeting, and its character changed from year to year. Since the appearance of the Journal, the permanent membership has reached nearly fifteen hundred, and the attendance at the annual meetings has more than doubled. Two factors have created gigantic associations in the United States and Great Britain, viz., the unification of all city or county societies with the national association, and the establishment of a weekly journal. The national association should be the apex of the pyramid, whose base is the provincial societies built upon the city and county societies. At the suggestion of President Mackid, the Association last year directed the secretary to induce each provincial society to secure affiliation with itself of all the city, town, and county societies.

The great bond between the national association and the individual in the profession is not the annual meeting, but the weekly journal. It is by way of a weekly journal that we can succeed in forcing this Association into greatness. It will require funds to put the Association Journal out as a weekly, but the difficulty of obtaining these funds is not insurmountable. One way is to canvass the profession for a membership on the basis of a weekly journal. A membership of one half of the profession of this country, would assure the continued existence of a weekly issue. Another way is to secure an endowment the interest on which,
when no longer needed for the maintenance of the weekly journal, could be used for lectureships and research work under the Association's guidance.

The Association is greatly in need of funds for other reasons, one of which is to rescue our profession from being exploited by the commercial enterprise of certain drug houses. Abraham Flexner ("Medical Education in Europe," page 90), speaking of this evil under the head of medical education in Germany, pertinently remarks, "The critical pharmacologist has discredited the old wives' tales that kept up the traditional pharmacopoeia. Meanwhile the "manufacturer is spinning a new superstition; the chemical industry "of Germany is aggressively and intelligently directed. Only a "critical pharmacological sense can enable the practising physician "to know when to doubt and how far to believe the sanguine and "assertive claims made upon him by the manufacturing chemist."

The American Medical Association, through a committee on pharmacy, has undertaken to investigate some vaunted claims of certain drug houses with beneficial results to the profession in general. May I ask, are all the medical publishing houses with their endless padded encyclopaediae on every conceivable branch of medical science, not likewise guilty of exploiting our profession? Nothing can be done against these exploitations, unless we have paid, skilled and scientific censors. For this purpose, funds obtained through increased membership are urgently needed. Above all, we need the influence of all "the respectable and redeemable members of the medical profession in the remote districts as well as in the great centres of our Commonwealth," that they may have a hand in shaping all legislation affecting the future of our profession, and the public health of our country.

The committee of this Association has been promised by the Right Hon. R. L. Borden, that there will be created in the near future, a portfolio of Public Health. In as much as these changes take a long time in coming, it behooves us to keep urging the authorities. We cannot get a pure food law or federal control of vaccines, sera, and drugs, such as has been in operation in the United States during the past ten years, without such cabinet appointment. There they have a fine of five hundred dollars or one year's imprisonment for conviction of adulteration.

Like several of my predecessors in office, I desire to refer to some phases of medical education. The Carnegie Foundation for the advancement of teaching medical education has done great service for medicine on this continent. Out of its criticisms has
arisen, almost everywhere, improvement. Not the least valuable part of its contribution is this, that it gave support to that faction of every medical faculty desirous of being abreast of modern education. The Carnegie Foundation authorities have, however, over-emphasized the laboratory side of medical instruction. The German method of medical education is to tie the medical student to a microscope, as opposed to the English method of cultivating knowledge through the unaided eye. In Germany, the aim is to make scientists first and then doctors. Whereas the "primary purpose for which students learn sciences, is to become physicians, not scientists." The literature of the several subjects that form the basis of medicine has become so extensive, that no man can keep abreast of it. Physiology, which is easily the most essential of all primary studies, has become so elaborate that it has suffered subdivision into three or more departments or professional chairs. There exist similar subdivisions in bacteriology, pathology, and anatomy. As each teacher declares himself incompetent to instruct outside his subdivision, how idle to attempt to make anatomists, physiologists, bacteriologists and pathologists, etc., of medical students. The time is not so very remote when a medical student could master all the primary branches of medicine. To-day it is not possible for him to master a single branch of the sciences that are connected with medicine, during his college course. The instruction given to medical students does not enable one student in a hundred, no matter how high the standing of the school may be, to say whether a throat culture is or is not diphtheria. For years American medical teaching has been dominated by the German plan of instruction. In certain quarters there is setting in a reaction. It is claimed that we have become guilty of a fetish-worship of laboratories in medical instruction and medical practice.

The great physician and surgeon must depend for his diagnosis upon the physical examination and the evidence he extracts, sifts, and weighs in the patient's history. Laboratory methods are of only occasional use, viz., to support or not support clinical findings. Within the last few years, physiological and pathological chemistry have assumed increasing importance in medical instruction, and would appear to be rapidly pushing, and possibly rightly so, all the other laboratory subjects into the background. It is hopelessly futile to attempt anything more than the most elementry teaching in the primary subjects of medicine to-day. The tried-out subjects of the ages, anatomy, physiology, and chemistry, should have preference as to the length of instruction hours. A student's most
precious possessions are his time, his vitality, and a clear mind at the age when the mind is most supple, its curiosity most alert, and its nature most impressionable. It is only by cutting down the time allotted to laboratory subjects that we will be able to find a place to instruct students in all the physical, mental, and nutritional forms of healing. It is high time that there was a readjustment of the programme, and a place, if not a professorship, given to these important subjects. Starling, in his preface to his "Physiology", has rightly said, "Until doctors know more about the physiology of nutrition, quacks will thrive and food faddists abound. Ignorance of physiology tends to make a medical man as credulous as his patients, and as easily beguiled by the specious "puffing of the advertising druggist." Some bold surgery is needed in the medical curriculum. At present it is clogged and strangled with too many subjects, and the malady is yearly increasing. This virtually amounts to a confiscation of the most plastic, receptive, and promising years of the student's life, by making him study subjects almost ulterior to the dominant purpose of his life. It is an academic crime to add more burden to the already overworked medical students, some of whom leave the college doors, now, with wrecked health. As the subjects become more intricate and complex, the teaching should become correspondingly more elementary. Medicine has nursed many of the sciences from infants to giants. Now, each one is able to set up a house of its own over which a full-time professor presides. They have emigrated into the land of pure sciences. In the reconstruction of the timetable, every hour added for a new subject should be cut off from the non-essential.

I am one of these who had the good fortune to serve, while a medical student, an apprenticeship under the guidance of an able practitioner, and I cannot get away from the thought that the time so spent was far more valuable to me than an internership in a hospital. The enormous increase in hospitals throughout the country makes it unnecessary for a recent graduate to be without an internship. However, there ought to be a choice between an internship and a year's apprenticeship with certain designated members of the profession.

A leading insurance company on this continent has found it profitable to pay its examiners a fee for an annual examination of each of its policy holders. The laity insure their barns, buildings, and their valuable stock against accident, and make periodic careful inspection and veterinary testing of these, and yet they will go from year to year without even thinking of subjecting them-
selves or their families to examination by a reputable physician, that incipiency in ailment may be detected and remedied. Why should we resort to medical inspection of schools and neglect the yearly inspection of the adult citizens of the country. Let us try to hasten the day when no man shall think of exercising the right to withhold himself or his family from a yearly physical examination by a reputable physician, to determine any tendency to disease or the presence of disease itself. I am not blind to the fact that this innovation can lead to abuses, for it is impossible to eliminate at once from our profession the alarmist, the surgical tinker, and the obsessed drug giver.

In common with the profession in the republic to the south of us there are problems here affecting the public no less than the profession. These demand solution. Already there has been inaugurated at Washington, during the past month, a movement to establish a non-teaching college analogous to the Royal College of Surgeons of England, with the aim of giving higher degrees in surgery. The bearer of such a degree will have, from competent authorities, the stamp of approval declaring him capable of doing good surgery. American surgery, recognizing that their evils are likewise our evils, has most kindly invited well-known, reputable, Canadian surgeons to become founders with themselves of the projected college. Not only will this college demand of its graduates technical knowledge and operative skill, but above all, honesty and unquestionable moral character. A movement of this kind is intended to abolish needless and abusive surgery together with its invariably associated dichotomous fee. To do this effectually, those holding such degree must have public support and sympathy. Is not the time ripe when we should receive higher degrees in Canada, not from Great Britain and the United States, but from a Canadian institution, founded by the parliament of this Dominion preferably at Ottawa? The ambition of ninety-five per cent. of the recent graduates in medicine is to become surgeons, and in many cases, life's efforts are directed to this end. Matters have come to such a pass that the recent graduate thinks of disease only in surgical terms, the medical side is "a despised weed." We need competent medical men and competent obstetricians, just as badly as we need competent surgeons, that is, we need men in these departments who have the knowledge of specialists. There is too much tendency to accept mediocre attainment in the two former, and demand thorough attainment in the latter. Given a standard high degree in these subjects, along with publicity of their meaning, we
would find plenty in the profession who would put forth continued efforts at self education for their attainment. There is a dearth of competent men in many departments of medicine and an overcrowding of the profession with mediocre ability.

My duty to the profession and to the public would not be done did I not refer to the miserable medical fees common to some districts of this country. Once a fee becomes established in a community it is hard to raise it. In certain districts in England, the twopence and threepence fees still persisting, are relics of Henry the Eight’s time. A banker stating tersely the altered value of money said that in 1860, $20,000 would yield in interest $2,500 annually. This sum would go as far as $6,000 for living expenses today; $120,000 would be the amount of principal required to earn $6,000 to-day. In other words, $20,000 in 1860 yielded a living for which $120,000 would be required to-day, one dollar being equal to six nowadays: “The labourer on the street has been quicker to grasp the altered value of money than your profession,” said the banker, “and what is more, he has had, as a rule, the courage to demand his right to substantial increased wage.” Through a failure to carry a campaign of education in favour of better medical fees, there has arisen a disproportion between medical and surgical fees which is largely responsible for fee splitting. One general practitioner gave an illustration in this way. He said he took Jenny B. to a surgeon for appendicular operation between attacks; the father paid the fee of one hundred dollars. Six months thereafter, he protested a bill of twenty dollars for attendance on his other daughter for a severe and prolonged attack of pneumonia. So long as there are miserable medical fees and this disproportion between medical and surgical ones, the fee splitting cannot be stamped out. There must be a good living wage for honest medical service, or members of our profession will fall into dishonest practices, and sink into the mire of dishonour itself. The righteous course for our profession to pursue is, while not distressing the deserving poor, to be careful not to put a premium on mere stinginess.

Medicine has made contribution to every calling in life. It is our high duty to go farther. We must not continue the silence of centuries any longer. We must educate the public in the scientific principles of medicine far enough to give them ground to judge in their true light the sophistries of the quack and the charlatan. The osteopathist, Christian scientist and chiropractor succeed with even the supposedly educated and intelligent, because they teach the public their theories of disease and healing. To tell a patient that his bile has become thickened and that the grooming he is
about to receive will make the bile more limpid, is an explanation not above his comprehension. What we must do is to educate the public till such an explanation will not be entertained. The greatest publicity should be given to the achievements of regular medicine since it became worthy of being a science. Should not every school-child know that through our profession the average length of human life has been doubled; that in the last twenty-five years, eight years have been added to the average length of life; that it is to our profession that every civilized nation looks to wipe out plagues and hold back and even arrest epidemics? We have given the widest publicity to vaccination against smallpox with happiest results. Why not give publicity to the equally valuable vaccination against typhoid fever? Our battle against tuberculosis has been a publicity campaign in which the laity has not only believed, but has actually joined with us in great force. The enlightenment of the public in this will render it impossible hereafter for the heartless quacks to thrive upon the ignorance of the consumptive victim. If the battle against cancer, the twin monster of tuberculosis, gains this publicity together with a similar sympathy and active support from the laity, our triumph over this disease is to be within the life of many in this room. Let us never grow tired of impressing the fact that it was the regular profession which discovered anaesthetics, abolishing pain and agony off and on the operation table, and that it will not be in the power of the human race in the future to duplicate a boon to humanity like antiseptic surgery. In spite of the fact that serum has cut the fatalities of diphtheria in half, in addition to putting into our possession the most potent agent against the spread of this dread disease of childhood, that the Spanish Americain Main has been swept clear of the yellow fever scourge, and that we have not only the cure for malaria, but also the power to wipe it off the face of the land, yet there are, both among the ignorant and intellectual, those who declare that medicine has made no advancement in one hundred years, and all this because we have not given the widest publicity to our achievements. In the expressed opinion of Lord Salisbury, medicine is the most exact and advanced of all the true sciences. It has rendered tributary to itself the knowledge of every walk in life.

In conclusion, while I have unflinchingly probed these festering sores on the surface of our professional body, I hasten to declare the heart of it to be sound and flawless, jetting out from its valves a fountain stream of all that is splendid in the history of science and humanity; matchless in progress, matchless in achievement, and matchless in future outlook.
ADDRESS IN SURGERY*

FRACTURES AND THEIR TREATMENT

By J. ALEX. HUTCHISON, M.D., L.R.C.P. & S. (Edin.)

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It is a great privilege to be permitted to read an address on surgery at the annual meeting of the Canadian Medical Association. When your president, influenced largely, I think, by kindly feelings towards myself, invited me to read the address, in a moment of vanity I consented, and since then I have felt the responsibility more and more as the time of the meeting approached. I wish therefore to express my appreciation.

In the choice of a subject, I have been influenced largely by the fact that during the past few years, more especially since the introduction of radiography, the subject of fractures and their treatment, is, perhaps, of more general interest to the members of this association, than many other subjects which might have been considered.

Time will not permit me to go into details as to the particular treatment of a particular fracture. My object is rather to consider the subject as a whole, and to make a brief review of the various methods in use, presenting a few of my own observations gathered from twenty-two years' experience as a surgeon and assistant surgeon to the Montreal General Hospital, which institution, from its situation in the centre of the largest city in our country, and within half a mile of the head of ocean navigation, has perhaps, the richest clinic in fractures in Canada.

It has been stated that in the midst of all the wonderful advances in medicine during the past thirty years, and more especially in the advances in the surgical treatment of diseases, our knowledge and treatment of fractures is much as it was in pre-Listerian days.

An exception is admitted in the treatment of compound fractures. The work of Sir William Macewan, in Scotland, Sir Arbuthnot Lane, in England, and J. B. Murphy on this continent, during the

past ten years, however, has drawn the attention of the profession to this subject, with the result that many radical changes have taken place, not only in our knowledge of bone regeneration and repair, but also in our treatment.

How far the introduction of radiography is responsible for the change it is difficult to say. It has at least added enormously to our knowledge and precision. In a brief review of the subject it is necessary to deal first with:

**Repair.**

It was formerly held that the periosteum was the most important tissue and that largely from it bone repair took place. Our treatment, therefore, consisted largely in attempts to cover divided portions of bone with its periostial envelop. Where disease or injury to bone resulted in destruction of the periosteum and uncovering of the bone, we were taught to expect death of the bone at least in part. It is clearly demonstrated, largely through the experimental work of Macewan, that the periosteum itself cannot reproduce bone, and it acts as a mould, guiding and controlling new growth.

It has been a common clinical experience to find little or no callus thrown out over that portion of a fracture protected with untorn periosteum, or where a splint or other support pressed uniformly against a fracture with torn periosteum, and that in the same fracture with extensive laceration and destruction of periosteum, producing large gaps, extensive, excessive, and irregular callus developed. Thus we learned the well known rule of the carpenter, "the thinner the layer of glue the stronger the joint," and efforts were carried out to limit and control excessive callus formation.

Our present knowledge of repair of bone may be briefly summed up as follows:

- **Haemorrhage,** which is always present to a greater or less extent.
- **Inflammatory exudate** of leucocytes, serum, and fibrin.
- **Proliferation of bone cells** of osteo-genetic power (osteoblasts).
- **Formation of a matrix** of proliferating blood vessels carrying osteoblasts. Osteoblasts once formed proliferate rapidly, lime salts become deposited and new bone is formed.
- **During this process large cells,** derived also from the bone cells appear, called osteoclasts, which have the power of destroying bone, thus removing unnecessary callus.
These changes vary in individuals in accordance with varying conditions of health, and show greatest activity in the young. Thus we have great regenerative power in the young. Conversely, in older individuals, proliferation is less marked and the osteogenic cells more rapidly perform their evolution and become complete bone; proliferation ceasing before complete repair of a destroyed portion of bone has taken place. Hence delayed, incomplete, and frequently non-union results.

While bone grows principally from epiphyseal cartilages, after their artificial removal, osteoblasts from the diaphysis in a measure fill the space, and while the process greatly lessens diaphyseal growth it does not entirely cease.

The thanks of the profession are due to the British Medical Association for the report on the treatment of simple fractures recently published. This report has done much to remove many misconceptions, and I am glad to notice among its findings, that the non-operative treatment of fracture in children under fifteen years gives a high percentage of good results. Also that in children, with the exception of fractures of the forearm, open operation does not give better results than the non-operative.

Sufficient time has not yet elapsed since the publication of this report to allow a proper appreciation of all its findings. Much valuable knowledge, however, has been put before the profession. We may look forward with interest to the investigation of the American Surgical Association, the preliminary report of which was recently read at Washington by Dr. J. B. Roberts, chairman of the committee.

We may divide the treatment of fractures into four general groups:
1. Fixation with splints. Rest.
2. Fixation with splints and extension by weights as advocated by Buck many years ago, and also during recent times by Bardenheuer.
3. Ambulatory, mobilization, and massage.
4. Operative or open method.

From these various methods it is difficult to choose, but it is well to keep in mind their usefulness as adapted to the special features of a given fracture. Versatility is the successful instrument, and, for the average practitioner, no one plan should be adopted for routine practice; in fact routine practice may be said to be the cause of most of our failures. At the same time it should be the aim of each man to adopt a definite scheme of treatment and carry
out its details sufficiently in each case to familiarize himself with its advantages and disadvantages.

Those of us who have had much to do with fractures become familiar with a certain line of procedure and gain a certain technique that may bring good results to us, which, when applied by others, may result in disaster. It cannot be too strongly stated that for the man who sees only an occasional fracture the simplest form of splint, and rest combined with extension for certain fractures, will give the best results.

**Splints and Rest.**

This is the oldest form of treatment of fractures, and it is very accurately described in the earliest Egyptian medical records. The simplest forms are those made of a thin board, moulded plaster of Paris and poroplastic felt. As a rule, moulded splints, sold in sets for special fractures, are objectionable. Experience is required to apply them accurately and, in the absence of the proper size, one is very apt to use the next available size, which may or may not fit the case. Moulded plaster of Paris, in the form of the Bavarian dressing, requires some experience to apply, but is a very desirable splint when accurately adjusted to the injured part. Poroplastic felt is an excellent, although somewhat expensive material and is very easily moulded.

It is hardly necessary to point out the advantages of the use of such splints, chief of which is, that it enables one readily to expose the parts and replace them without discomfort to the patient, and at a cost of an additional strip of adhesive plaster or a bandage.

This method, combined with extension by weights, is perhaps the safest and more useful form of dressing for fractures of the long bones more particularly of the femur, and I know of no better apparatus than Bucks' extension with coaptation splints and a long Liston splint. The dressing, while comfortable to the patient, necessitates almost daily attention as the rapid atrophy of the thigh muscles requires that the coaptation splints be frequently tightened. As a rule sufficient weight is not applied. For an ordinary adult about ten pounds should be applied at first, rapidly increasing until spasm of the muscles has been completely overcome. This requires from four to eight days, and the weights can be increased up to thirty pounds. The weights need not be kept on continuously if the patient suffers from pain.

Coaptation splints should also be removed from time to time to allow of massage of the limb, and more particularly gentle move-
ment of the knee joint. After the spasm has been once controlled, the weights can be diminished. Care should be taken as has been frequently pointed out, that the splints should not be applied so firmly as to interfere seriously with circulation. In fractures of the shaft of the humerus, occasionally weights are required, but as a rule if the patient is allowed up every day, and the supporting sling is kept well down to the wrist and not near the elbow, the weight of the dressings and the limb, is sufficient to give the necessary extension.

Ambulatory.

I have had little experience with the ambulatory method in the treatment of fractures of the lower limbs. Their use requires very considerable experience. While the advantage to the patient of being able to be about and in the open air is undoubted, the control of the patient, and of his apparatus, requires more attention than is usually possible outside of hospital practice. My own practice is to get all patients, excepting those suffering from fracture of the femur, out of bed at the earliest date, while the patient is still in the fixation apparatus.

Bardenheuer Method.

This method, advocated many years ago by the great German surgeon, has many advantages, more particularly for those who have had an extensive experience. The apparatus is only comfortable when properly fitted and requires constant attention. When one has familiarized himself with the details, the treatment is an excellent one, and gives good results. However, it should not be used by a beginner. One great advantage of this method is, that the damaged limb is more or less exposed and the apparatus permits of lateral as well as rotatory traction, and Bardenheuer lays great stress upon the importance of taking advantage of this.

As a hospital man I should like to point out a not uncommon practice which has nothing to commend it, that of immediately replacing the displaced fragments of bone in cases of recent fracture, and applying an elaborate fixation apparatus, such as a plaster of Paris dressing in cases which are immediately to be moved to a distant place, and where the patient will come under the care of another practitioner. Such cases seen as an emergency should be put up in the simplest form of dressing, and the patient should be told that the dressing is of a temporary character. It is well to
supply a letter addressed to the physician who is expected to take subsequent care of the case, explaining what has been done.

Many instances have come under my notice where an elaborate dressing, such as I have described, has been applied, the patient departing at once and coming under the care of another practitioner. Often the second practitioner has not the moral courage to cut down the plaster of Paris dressing; he therefore assumes all the responsibility of the case, and is certain to come into whatever censure may occur, without really having had anything to do with the actual replacement of the fragments and application of fixation apparatus. The laity should be taught that it is a fallacy to suppose that the so-called setting of a fracture should occur at once after an injury, without regard for the surrounding circumstances. It has been our common experience that many fractures are discharged with good alignment and apparently firm union, which seen many months later show marked angular deformity. While it is difficult to control the actions of patients, who have apparently fully recovered, more particularly those cases which are discharged from the public wards of the hospital and pass completely from the observation of the attending surgeon, we have perhaps not taken sufficient steps to protect our own reputations. All such cases should be kept as long as possible under observation, or until good bony union has taken place.

The old fashioned method of using a bedroom pillow supplemented with strips of board on either side is still an excellent dressing, especially in fractures of the leg. Plaster of Paris dressings are difficult to properly adjust, and should never be used until one has acquired considerable skill in their application. In my opinion there are certain parts of the body where plaster of Paris should never be used except by surgical experts, that is, in fractures of the shaft of the humerus and femur, and in obscure injuries about the elbow and knee joints.

Mobilization, and Massage.

We owe very much to the French surgeon, Lucas Championnière, and while very few English-speaking surgeons have been daring enough to carry out his practice in detail, I think we have all appreciated the value of massage and frequent inspection of the injured limb, while at the same time using some definite fixation apparatus. Lucas Championnière has again and again drawn our attention to the fact, which I think had been previously mentioned by Thomas, of Liverpool, that too rigid fixation diminishes repara-
tive bone production, damages the soft parts and stiffens the joints and tendons, so that the patient when at last freed from his dressings, suffers more in recovering the use of muscles and joints than from any other cause. The originator of this method has pointed out that the massage must be gentle and never carried to a point of producing pain.

Against this method, however, there can be little doubt that the early recovery which has been claimed for it is often at the expense of anatomical deformity. We must, however, always appreciate that to Lucas Campionnière, more than any one man, we must acknowledge our thanks for the introduction of the combined methods now so universal on this continent.

The method of extension by the use of nails and traction apparatus, suggested by Steinman, and also the methods of Lambotte, of introducing pegs united to a frame held outside the wound, has very serious objections. The danger of an open wound through which is introduced a foreign object to the centre of a long bone, leaves a wide open door for infection.

Operative or Open Method.

No subject in surgery is engaging the attention of the profession at the present time more than the operative treatment of fractures, and before proceeding to discuss this method I will draw your attention to the following very important sections of the British Medical Association report:

Section 10. "It is necessary to insist that the operative treatment of fractures requires special skill and experience and such facilities and surroundings as will ensure asepsis, it is therefore not a method to be undertaken except by those who have constant practice and experience in such surgical procedures."

Section 11. "A considerable proportion of the failures of operative treatment are due to infection of the wound, a possibility which may occur even with the best technique."

Section 12. "The mortality directly due to the operative treatment of simple fractures of the long bones has been found to be so small that it cannot be urged as a sufficient reason against operative treatment."

Section 13. "For surgeons and practitioners who are unable to avail themselves of the operative method the non-operative procedures are likely to remain for sometime yet the more safe and serviceable."

All operative procedures are becoming easier to an increasingly
large proportion of our profession doing surgery, and the probability is that this applies also to the operative treatment of fractures. Mr. Robert Jones, of Liverpool, very tersely states "that the indications for operation will clearly differ from the individual standpoint of the surgeon and no rules can be laid down. The surgeon with the least mechanical resource will operate most frequently." Those who have seen Lane operate might be led to believe that the proceeding is a simple one, but this is not so; as many of you are aware, Sir Arbuthnot Lane has developed a technique and dexterity which perhaps is unequalled, therefore it follows that the proceeding is a rational one for him to carry out.

Personally I have had an open mind, and my practice has been to operate on cases which I was unable to reduce or retain in good position, more particularly in fractures in the upper part of the humerus, upper part of the femur, both bones of the forearm and in spiral and oblique fractures of the tibia. My experience has been that the open method is a most satisfactory proceeding, and each operation becomes simpler to perform than the last. No one should operate without having a full supply of the heavy holding forceps, originally suggested by Lane and of which there are now a number of different types. The practice of Mr. Jones should also be kept in mind, that of keeping up extension by pulleys during the operation. A combination of these two measures makes the operation much easier.

The length of time for repair is undoubtedly longer, and each patient should be especially warned that the early mobility of the limb is due to the introduction of plates and not to bony union, so that such cases should be kept under observation for a longer period and external supporting apparatus should constantly be used. One case recently under my care has been very instructive, although the point is not new, having been referred to a number of times by others. A plate was applied to a fracture in the lower third of the tibia, and the patient discharged in a long plaster cast. He returned once a month, the cast was removed and at first there was no movement; later, there was a little definite movement. An x-ray showed a rarification of the bone in the neighbourhood of the top screw. I cut down and found the plate was almost embedded in new bone; the top screw was loose. I removed the plate and screws and put the patient in a new plaster cast; he returned in a month and had good firm union. This was a case where apparently the mobility, as suggested by Lucas Championnière, had finally resulted in union.
In the treatment of compound fractures I have found that the use of a plate or wrapping the bone in wires is of great value, but when such a proceeding is carried out the plate is only put in for the first few weeks to control the parts and must invariably be removed before the wound will, or is allowed to close. I have made it a practice in all cases of carrying out Lane's suggestion of covering the plate with muscle, fascia, or fat, and in one or two cases where this was not completely done, or where the parts tore away later, I found that I was obliged to remove the plate; in short the plate should never be allowed to lie exposed immediately below the subcutaneous tissue.

The Committee of the American Surgical Association, in considering the British report, points out that all methods of non-operative treatment have been grouped together in a comparison, and considers that a true estimate of the value of the non-operative method should include a classification to the end that the best non-operative treatment could be laid before the profession. In this view I am in hearty accord, as I take it that the object of both reports is to place in the hands of the average man the most desirable method of treating non-operative cases.

The American report further points out that, on this continent, the usual treatment is not limited definitely to a fixed plan, but is a combination of several methods. The committee, therefore, in its primary report, believes that prolonged immobility with continued fixation by means of external splints, or apparatus, should be abandoned, and recommends that the treatment should depend upon three classes of practitioners:

1. The average general practitioner, unskilled in surgery as a specialty.
2. Surgeons with the usual facilities of small or cottage hospitals.
3. Surgical experts with adequate hospital facilities.

For the first they recommend the mixed method which is practically in use with most of us, laying stress on the importance of a general anaesthesia for diagnosis as well as reduction, combined with the use of an x-ray. For the second class the report suggests that the operative treatment be restricted to especially rebellious fractures after the case has been watched for a few days. For the third group, early operation in all cases which cannot be properly reduced and maintained in good position.

Dr. Roberts has associated with him men of wide experience in the care of fractures and the final report will undoubtedly be a guide of great value.
In doing my first open operation for fracture of the patella many years ago, I was surprised to find the amount of haemorrhage and damage to the neighbouring soft parts. Since doing the open method on apparently simple fractures of long bones, I have marvelled at the good results obtained in non-operative treatment in view of the extensive laceration of the soft parts, and the inter-position of muscles and other tissues.

*Radiography.*

The value of the discovery of the x-rays in the diagnosis of fractures was early recognized, and it is hardly necessary at this date to refer to the great aid that has been given, not only in the diagnosis of the fracture, but as a guide to satisfactory treatment. It should be remembered, however, that many factors enter into the consideration of a given case. Two plates, one antero-posterior and one lateral, should invariably be used. The diagnosis should not be limited to an examination of the plates but a careful examination of the injured limb should always be made. A second fracture in the same bone or a fracture of a neighbouring long bone at a higher level may be present although not shown in the plate.

The possibilities for distortion in a given case depend upon the position of the fracture and the experience of the x-ray operator. The importance of this has not been properly appreciated, more particularly by general practitioners. Distortion of displacement is always present in fractures of the long bones and in fractures of the pelvis.

The public has much to learn in regard to x-ray distortion and it is difficult to know what our position should be in regard to showing plates to patients and their friends. These persons expect to see the plate and yet are not sufficiently experienced to appreciate the various conditions which exist in a given case. The impression is therefore left that the fractured bones may not be in good position, when in reality they are.

While it is quite possible to continue the treatment of fractures as in the past without the aid of x-rays, the general practitioner should not undertake the care of obscure fractures, more particularly those involving joints, without at least giving his patient the opportunity of going to some neighbouring point where the use of an x-ray plate may be obtained. I, in common with others, have had a number of instances where acute synovitis has masked the presence of an important fracture. Only recently a case came under my observation, where the patient was unable to walk or to straighten out his limb some months after a fall which produced a
severe synovitis of the knee joint. X-ray demonstrated the presence of an impacted fracture involving the articular surface of the tibia. I opened the joint and found a knob of callus in the centre of the joint displacing the semi-lunar cartilage, the knob was chiselled off and the cartilage removed.

Medico-Legal Aspects.

It is unfortunate that fractures have always been the source of much medico-legal anxiety to our profession. This has been made greater with the introduction of the use of x-rays. The time has come, I think, when this Association could quite properly investigate our position in regard to the courts and our patients, to the end that some definite legal method, fair to all parties, could be introduced into our court procedures. The situation could hardly be worse than at the present time where x-ray plates of fractures are passed about the court and interpretations taken therefrom, not only by the court, but by lawyers, jurymen, and others; this without any effort being made to have the meaning of the plate explained by medical men competent to offer such information. As long ago as May, 1900, a report of the American Surgical Association stated that, "Skiagraphs alone without expert surgical interpretation are generally useless and frequently misleading."

Dr. J. B. Murphy recently reported a dislocation of the shoulder joint where the head of the humerus was behind the glenoid fossae, yet the x-ray showed normal position. In a United States court recently a medical man was held responsible in damages to a large amount, not because the deformity resulting from a fracture was due to lack of skill, but because there was deformity, and the medical man had not recommended the use of an x-ray, although there was no x-ray apparatus in the town.

There is also the question of ethics to be solved. How far a medical man engaged in the practice of radiography is within his rights in selling plates showing fractures which have been under the care of other medical men without these medical men being consulted.

The development of workmen's compensation acts in our own, and other countries, where employers are responsible for the payment of compensation for injuries, makes the whole subject of fractures of greater interest than at any time in our history, and if the time has not yet come for defining our responsibilities it must be close at hand, and I trust this Association will not be behind other organizations in laying before the profession and the public the best means available for the treatment of fractures.
CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

By Robert E. McKechnie, M.D., C.M.

Vancouver, B.C.

I hardly think an excuse is needed for presenting this subject before this meeting, for although the condition is well recognised, and the majority of those present may think that nothing new will be offered, yet I affirm that in general practice it is too often lost sight of. And losing sight of the subject causes a yearly loss of many infant lives, which could be readily saved, with appropriate treatment.

To refresh your memory, I will briefly recapitulate our knowledge. It was not until 1888 that Hirschspring published an article which definitely described the disease. Not that it was a new disease, any more than appendicitis, whose history is also only too recent, but the condition had been overlooked. And, following Hirschspring's paper, the condition has gradually become more widely known and recognised, till now it is an established entity. That much having been attained, it has had to run the sequence of medical treatment with an appalling mortality, and more recently, surgical treatment, with daily more gratifying results.

The patients are in about 80 per cent. of cases males, and about 50 per cent. firstborn. The symptoms rarely begin at birth, the picture being that of a healthy, well developed male child, who probably takes his nourishment well for from two to four weeks, when symptoms of obstruction begin.

Vomiting is the first thing complained of, and with that there is a lessening of the excreta. Later on the vomitus will measure about what has been taken in, while the faces will be represented by a meconium-like mass, perhaps not over a dram at a time. The vomiting does not suggest a gastritis. Sometimes the food is ejected shortly after a feeding, but sometimes it may accumulate until quite a quantity has collected. The stomach becomes dilated and visible peristalsis will be noted. In one of my cases, careful measurements made of the liquids given and ejected during some three days, showed only a dram or so difference during each day.

Read at the Annual Meeting of the Canadian Medical Association, London, June, 1913.
between the food and the vomitus. As the stools were dark green from bile and no bile showed in the vomitus, it was at once evident that the obstruction was above the point of entrance of the bile.

Progressive loss of weight must of necessity set in, not accompanied by cachexia. The child simply looks starved and, until in extremis, remains quite bright.

While inspecting the abdomen, and noting the peristalsis, one can readily note the effects of the obstruction, the full stomach and the empty bowels. The bulging of the upper abdomen and the flattening of the lower half cannot be missed.

In addition to the foregoing, the picture is completed by the finding of a small tumour in the region of the pylorus. This feels like a small gland, is hard and movable, is smooth, of cartilaginous hardness, and about the size and shape of a very small olive, although some are slightly curved and may be larger at one end than the other. As before noted it is freely movable, there being no adhesions. Microscopically, the tumour is caused mainly by an increase in number of the circular muscle fibres, the individual fibres also showing an increase in diameter. In addition there is a slight increase in the longitudinal muscle fibres and the submucous and mucous layers.

As to what causes this development there are two theories, each of which has its advocates. One theory is that it is a congenital malformation; the other, that it is a hypertrophy due to overwork, the consequence of long-continued spastic contractions. The long-continued spastic contractions are also theoretical. Some claimed that they were due to hyperacidity of the gastric contents, but Cameron, in an article in 1907 in the American Journal of Physiology, shows that acid on the gastric side of the pylorus causes it to relax; and other observers claim that the gastric contents in these cases are not hyperacid. One of my cases was undoubtedly born with this condition, which makes me believe the condition a malformation. This would do away with the theory that the chemical constituents of the functionating stomach provoke the hypertrophy in the first instance. But as the great majority of cases develop their symptoms from the second to the fourth week, one can readily imagine that the infant was born with a hypertrophied pylorus, whose lumen was sufficiently large in the early weeks to permit the passage of the food, but that some irritating agent so provoked the tissues, through causing excessive contractions, as to augment the growth and lead to closure.

However, these are only theories. What we do know is that
we have a definite hypertrophy of the pyloric muscle, progressive in character, which in the majority of cases causes complete obstruction and results fatally unless relieved.

This statement may seem too sweeping, in the light of the statistics published by those who have employed the medical treatment. In the Schorstein Lecture, 1910, by Robert Hutchison, published in the British Medical Journal, are quoted nineteen recoveries out of twenty-one cases, eleven out of twelve, and thirty out of thirty-two, with medical treatment, but I do not think we can find similarly favorable results furnished by the American practitioners. And even among the English writers we find the adoption of medical treatment discouraged. Thus at a meeting of the Royal Society of Medicine, Section for Study of the Diseases of Children, a specimen was shown from a case which had died from the condition we are discussing. Dr. Cantley, the chairman, remarked that it was a good illustration of one of the usual results of attempting to cure the condition by medical means; and that there were still many people who supported the view that a cure could be obtained by that means. And Mr. Lockhart Mummy said that these cases must be operated upon at the earliest opportunity if there was to be any chance of saving the child’s life; delay was fatal.

Turning to a great American authority, we find Scudder, of Boston, in an article in Surgery, Gynaecology and Obstetrics in September, 1910, stating, “The prognosis in the case of pyloric tumour is bad, unless surgical measures for the relief of the obstruction are employed . . . . Certain cases of pyloric spasm, without tumour formation, recover under medical treatment. If the diagnosis can be made of a pyloric tumour causing obstruction, the earlier operation is performed the safer it will be for the baby concerned.” In another article in the same journal in April, 1912, he states that the mortality of the expectant medical treatment is between 80 and 90 per cent., while he quotes a series with one death in ten cases, Richter’s series with one in nine, and his own with one in fourteen, when surgical treatment was adopted. He ends by saying, “Gentlemen, in view of the evidence, I believe that surgical measures should be instituted as soon as the diagnosis of congenital pyloric stenosis is made. Delay is dangerous, etc.”

My own cases, which are six in number, I will but briefly review.

Case 1 was a male, firstborn, and breast fed at first, changing at three and a half weeks, when symptoms developed, to artificial
feeding. I was called in at the seventh week, when the child was almost in extremis. The consulting physician still wished a few days longer feeding by the usual methods of lavage and feeding. However, after two days delay I operated, finding a well developed tumour of the pylorus. Although examined for before the operation, we could not be sure that we felt it, but as I have found them since, I think it was palpable, but that lack of previous experience prevented us making a positive diagnosis. All the other classic symptoms were present. A posterior gastro-jejunostomy was performed, as in all the other cases. The patient lived but a few hours, dying in convulsions.

Case 2, a male and firstborn, was normal until four weeks old, when symptoms of obstruction gradually developed, vomiting, lessening of the amount of faeces, etc., until the obstruction became complete. A tumour was palpable, the stomach was dilated and peristalsis was marked. I was called in by Dr. Martin, of North Vancouver, who had the case diagnosed for me, and I operated, the child being within two days of two months old. He made a good recovery and is now a larger and stronger child than his twin sister.

Case 3 was a breast-fed male, firstborn, also in the practice of Dr. Martin, and occurred about eight months after the other. Dr. Martin has this case very clearly worked up, showing that symptoms began two weeks after birth, that weight steadily diminished, that by the third week vomitus about equalled ingesta, that the stomach was dilated and a tumour palpable. I operated when the child was three and a half weeks old. It made an uninterrupted recovery and began to gain in weight at once.

Case 4, a male, firstborn, occurred in the practice of Dr. Casselman, of Vancouver, and its recognition was the direct result of a case reported by Dr. Dier, of North Vancouver, a patient in his practice. Within a week Dr. Casselman ran across this case and diagnosed it, which makes me believe that the result of the reading of this paper will be that there will be an increase among you in the cases discovered. This case had the classic symptoms, including the tumour. But the most interesting point is that this was a true congenital case. The mother said that there had not been a sign of food in the stools and the vomiting had begun at birth. When I saw it, the napkins shown me had little better than smears of meconium-like material on them. The mother had not sent for medical assistance on account of the vomiting, which she seemed to think was regurgitation from over-nursing, but because she could not get
its bowels to move. I operated when the child was four weeks and two days old. It made a good recovery.

Case 5 was also a male and firstborn. It was in the practice of Dr. Carder, of Vancouver, who had diagnosed it before calling me in, in consultation. This case also presented the classic picture including the tumour, was breast-fed, and a few days after the operation resumed nursing. It made a good recovery.

Case 6 was also a male and firstborn. Symptoms began to develop about the end of the third week and slowly became aggravated. Although the case was diagnosed by the attending physician, Dr. W. C. McKechnie, medical treatment was persisted in, as consent to the operation could not be obtained. Remissions of the symptoms of obstruction occurred, sufficient to give hope that the operation would not be necessary, but at the end of seven weeks I operated by the usual method. The child stood the operation very well and progressed favourably for three days, and then died rather suddenly. Not having obtained an autopsy, I cannot give the cause. In this case no tumour could be palpable, not even under an anaesthetic, but it was found at the operation, hidden under rather a large liver. This bears out Scudder's advice, to operate in cases where no tumour can be felt, if the symptoms of obstruction persist and the child is losing weight, for the tumour may be there although not palpable.

To recapitulate, all six cases were males and firstborn children. The latest date for the commencement of the symptoms was the fourth week. The tumour was present in all, readily felt in four cases, doubtful in one, and not to be felt in the last on account of its position under a large liver. Four cases were successful, two failures. But the failures, as failures often do, can teach us a lesson. These were the only cases whose vitality had been excessively exhausted by prolonged attempts at medical treatment, and merely emphasize the dictum of Scudder, "the earlier the operation is performed, the safer it will be for the baby concerned."

As we are all greatly influenced by something tangible, anything which will tend to make the tumour more palpable, will tend to hasten the operation. The doctor himself will feel more confident to recommend operation, and the parents will more readily consent, if they know a tumour is present. Hence, in cases where it cannot be felt, an anaesthetic should be given. A still simpler method is to put the baby in a warm bath. This will cause muscular relaxation and the tumour can then readily be palpated.

In the after-treatment, I place the patient in a semi-Fowler's
position, not so much for drainage of the stomach as to prevent the jejunum being bunched under the stomach, and adhesions forming due to the handling the bowel has received, and these adhesions interfering with function. In addition I follow another rule which I practise with adults, not to give milk early. Curds are apt to form and block the anastomotic opening. Hence I start with whey in babies, increasing to whey and barley water and later on to milk.

The sum of $500,000 has been given by Mr. John D. Rockefeller to the Rockefeller Institute for medical research, for the purpose of providing pensions for members and association members of the Institute. Members who retire at the age of sixty after fifteen or more years of service, will receive pensions of from one-half to three-quarters of full pay, according to the length of service; those who retire at the age of sixty-five will receive three-quarters-pay pensions. Members who are totally disabled after ten years of service, and widows and orphaned children, will receive pensions of one-half of these amounts.
SOME REMARKS ON ENDOCARDITIS IN INFLUENZA: REPORT OF A CASE

By J. H. McPhedran, M.B., Toronto

Demonstrator in Medicine, University of Toronto

Looking over the literature of the past on this subject one is struck with the scarcity of information available. It seems rather strange that a disease so prevalent, which attacks not infrequently the pericardium and myocardium, should be found to attack so seldom the endocardium.

Reports of cases are not wanting, but they are few. Jehler reports two cases in which he recovered influenza bacilli from growths on the valves—once in pure culture, the other time in company with the staphylococcus. Flexner reports two cases in which he recovered the bacilli from the valves post mortem—both being cases of acute endocarditis developing on a chronic endocarditis, rheumatic in origin, of the aortic and mitral valves. In his cases, influenza was not suspected during life and was only discovered by the routine examination at autopsy. Both ran a rapidly fatal course; both, one aged thirty-six and the other an old man, had previous aortic and mitral involvement, in the former case following an attack of acute rheumatism at twenty, in the latter, three attacks at different intervals. The endocardium shewed sclerotic changes involving both the aortic and mitral valves and also recent changes, vegetations being particularly noticeable at the valve edges, with some on the surfaces of the valves, some on the wall of the auricle, the ventricle, and chordae tendineae. Horder reports two cases in which, during the attack, he recovered influenza bacilli from the blood.

There is, up to the present, the report of two investigators, Porrini and De Vecchi, only, of experimental work in regard to the effect of the influenza bacillus on the endocardium. Porrini experimented with rabbits, injecting into the blood stream either living bacilli in sterile salt solution, or dead bacilli, and their toxins produced after several days, growth on bouillon, making the valves more susceptible to the action of the bacilli or their toxins by adding to the solution in either case, before inoculation, either adrenalin or charcoal powder. As a result he obtained a true endocarditis

Read at the Annual Meeting of the Canadian Medical Association, London, June, 1913.
with valve changes, vegetations being particularly prominent at the valve edges.

Another investigator, Perez, produced with living cultures of influenza bacilli, surgical complications, purulent pericarditis, myocarditis and peritonitis, but makes no mention of endocarditis. Porrini saw none of these latter results, giving as a reason the fact that he used smaller doses of the bacilli and accompanied the dose in each case with adrenalin or charcoal powder.

Attention was directed to the possibility of an endocarditis, influenzal in origin, through a case which occurred in practice during the past winter.

Case: D. T., æt. 11.

Previous illness: None.

Present illness: A younger sister, the father and a younger brother each had grippe in succession, the attack in each case lasting about three days, with complete recovery in a week. This patient developed grippe after the younger brother, on February 3rd, just as the latter was getting over his attack, was ill on February 3rd, 4th and 5th with fever, headache, prostration and all the symptoms of grippe. She recovered slowly and was out of school until the February 10th, returned to school on the 14th, but did not feel well; on the 15th, after skating, felt chilly, continued "not well, just tired out," as she said, on the 16th, 17th and 18th; tried school again on the 19th, but went only the half day, she felt so ill. On the 20th, 21st and 22nd, she was feverish and prostrated. I saw her on the February 23rd, when her only complaint was that she was "very sick."

On the 16th the baby, and on the 20th the younger brother mentioned above, developed otitis media.

Examination.—Temperature, 102.4 F., pulse 120 and regular, face flushed and tongue coated and swollen, speech thick, mouth ulcerated. Heart slightly dilated, faint systolic mitral murmur. Leukocytes, 16,000 per c.mm. The other systems shewed nothing abnormal on examination.

February 24th, 1913. Temperature 104, pulse 130. Murmur very distinct, heart still slightly dilated. No other change in condition.

February 25th. Temperature normal in the evening, pulse 84. Murmur rougher and louder; patient brighter, speech more distinct, tongue not so thick, mouth in better condition.

The treatment employed was as follows: absolute rest in bed, restricted diet, abundance of water to drink, free purgation at the
outset and an occasional cathartic thereafter; aspirin and quinine, hydrobromate in suitable doses till the temperature reached normal, which occurred in two days. Progress,—the heart gradually returned to normal size by March 5th, the pulse slowed down to 65, but the rough, harsh systolic murmur at the mitral persisted.

Recovery was uneventful, but the heart continued irritable and weak, the patient getting short of breath and the pulse rapid on the slightest exertion, and she was allowed out of bed only at the end of six weeks. The rough murmur at the apex persisted and still remains, leaving no doubt as to the existence of an endocarditis, and also no doubt as to considerable injury to the myocardium, as indicated by the condition of the pulse and respiration on the slightest exertion.

(Lord)—"Influenza is so seldom followed by permanent cardiac disturbances that it is not usually held responsible for cardiac disease. It seems, however, that it is not as blameless as is commonly believed. More recent observations on the bacteriology of the disease shew that influenza bacilli not infrequently invade the blood stream, especially in severe attacks."

Whether in the case reported the influenza bacilli or their toxins, or both, directly affected the valve, or whether they injured the valve, producing a good soil for the growth of any other organisms that might be floating in the blood, cannot be said. On what day between the onset of the disease on February 3rd and February 23rd, when the patient was first seen, the endocarditis began is not certain. The case seemed unusual and of interest, hence the report thereof, and this brief review of the information available on this subject.

References:—

4. PORRINI, Virchow's Archiv.
6. LORD, Osler's System, "Influenza."
THE RESPONSIBILITY FOR THE ADVANCED CASE OF TUBERCULOSIS

By C. H. Vrooman, M.D., C.M.

Medical Superintendent, Tranquille Sanatorium, Kamloops, B.C.

It is only during the past ten years that in Canada there has been an active anti-tuberculosis campaign. At a recent meeting of the Canadian Anti-Tuberculosis Association, it was pointed out with well deserved pride, that whereas ten years ago there was in Canada only one special institution for the treatment of tuberculosis, with accommodation for less than one hundred cases, there are now over twenty institutions, with accommodation for over one thousand. Ten years ago there were no dispensaries or visiting nurses, now there are over a dozen dispensaries, and visiting nurses in many of the towns and cities throughout the Dominion. The melancholy fact still remains that last year there died in Canada from tuberculosis approximately eight thousand persons: and taking the usual proportion of five living cases to every death, there are at present in Canada about forty thousand cases of tuberculosis. It is quite true that our death rate is no higher than that of most other civilised countries, in fact is lower than some, yet why should Canada, a prosperous and growing country, with practically no pauperism, with new and modern cities, in which all the latest sanitary building laws should be observed, show this appalling death rate from a preventable disease? Statistics of the province of Quebec show that during the eleven years, 1896 to 1906, the deaths from tuberculosis numbered 33,190, while the deaths from the other infectious diseases, diphtheria, typhoid, measles, scarlet fever, and small-pox, combined, totalled 24,615. Here is a preventable disease killing more than all other diseases of a common and infectious nature combined, and yet we have provided a paltry accommodation of one thousand beds for forty thousand cases, and except in a few of our larger cities, there is no well organised attempt to prevent it.

Before discussing the general problem further I would like to draw attention to some facts that have come under my observation at Tranquille Sanatorium during the last year and a half.
I do not think that my experience has been exceptional, in fact I am sure it could be duplicated in any province in Canada.

Table 1.—Classification of 200 Consecutive Cases.

<table>
<thead>
<tr>
<th>Type of Disease</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-tuberculous</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Incipient</td>
<td>37</td>
<td>18.5%</td>
</tr>
<tr>
<td>Moderately advanced</td>
<td>45</td>
<td>22.5%</td>
</tr>
<tr>
<td>Far advanced</td>
<td>114</td>
<td>57%</td>
</tr>
</tbody>
</table>

Table 1 shows a classification of two hundred consecutive cases. During the greater part of the period represented, we did not refuse any case of tuberculosis that applied, as it was decided by our board somewhat over a year ago to accept advanced cases, and accommodate them at a separate building. The proportion of advanced cases would have been still larger if our accommodation had been adequate, as during part of the time we had as many as twenty on our waiting list, practically all advanced.

Who then is responsible for this large proportion of advanced cases: so advanced that there is little probability of cure when they first apply for relief? After discounting all causes such as neglect to apply for advice, or inattention to proper advice, or acute onset of the disease, I should estimate that at least fifty per cent. of these cases became advanced because some general practitioner who saw them in the early stages failed to make the diagnosis, or even if suspecting the proper diagnosis, failed to recognise the serious significance of the symptoms, and gave most improper advice.

Let me give some illustrative cases:—Case 1. Patient had haemoptysis in March, 1909, and was in bed six weeks under the care of a medical man. He was advised to go to California but told that his lungs were perfectly sound. He lived an open air life for eight months but not under medical supervision, and as he felt no better returned to consult his doctor, who then examined his sputum, and told him he had consumption and had better come to the sanatorium. He was recommended as an early case, but on examination at the sanatorium was found to have extensive disease of both lungs and laryngeal involvement. This was fourteen months after the onset of symptoms. He died eight months afterwards.

Case 2. Tubercle bacilli were discovered in this patient’s sputum when he was in the hospital being treated for ischiorectal abscess. Advised by his doctor to live an open air life, given no instructions as regards exercise or any suggestion as to sanatorium treatment, he walked about until he brought on a profuse haemop-
tysis. He then came to the sanatorium, but the disease was found far advanced, and he died in a few months.

CASE 3. A young clerk in a large eastern city in the spring of 1910 developed a slight hacking cough and consulted one doctor who told him to be careful and gave him some cough mixture. The cough still continued, and as he felt considerable loss of strength, he consulted a second doctor who examined the sputum and told him he had bronchitis and that he had better come west. He came west to Saskatoon and worked in an hotel. As he felt no better, he consulted a third doctor who said he had weak lungs and told him he had better go to Arizona or British Columbia. He had not enough money to go to Arizona, so came to Kamloops and went to work on a ranch. He now himself suspected what he had, but no one of the three doctors had mentioned tuberculosis or sanatorium treatment. He worked on a ranch until March, 1912, two years after the onset of the first symptoms, when a friend advised him to come to the sanatorium. He was admitted to the sanatorium as a far advanced case with very little possibility of a cure.

These illustrative cases could be multiplied many times, and they all go to prove one thing, that in spite of all that has been written and spoken of late years about tuberculosis the first line of defence of the public health, viz., the general practitioner, is negligent in his duty. It is not in most cases want of knowledge but rather carelessness in examination of the patient; trouble is not taken to strip the patient's chest and give him a thorough examination, the sputum is not examined often enough, and when the diagnosis of tuberculosis is suspected the doctor is not honest with his patient. A diagnosis of "weak lungs," "general debility," "chronic bronchitis," is often given when, if the doctor was honest, he would tell his patient at once that he strongly suspected tuberculosis and proper steps should be taken to clear up the diagnosis. Dr. E. S. Bullock, of Silver City, N. Mex., in a recent address says, "For God's sake do be truthful to your tuberculous patients. If a patient comes to you in an advanced stage of the disease, don't hesitate to tell him his case is serious. And if a patient comes to you in the incipient stages, don't hesitate to tell him he has a chance for recovery right here in his own state. You doctors can do as much harm to a tuberculosis patient by wrongfully telling him that he can be cured in three months as by telling him he will be a dead man within a year."

Nor is the Canadian physician any worse in this respect than
his confrere on the other side of the water. I would draw attention to Tables 2, 3 and 4, which I would especially commend to the consideration of the immigration authorities. Ten per cent of our two hundred cases were resident in Canada less than a year, and practically all of these had been broken in health before leaving the mother land.

Table 2.—Classification as to Nationality of 214 Consecutive Cases

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian</td>
<td>97</td>
<td>45.6%</td>
</tr>
<tr>
<td>English</td>
<td>47</td>
<td>22%</td>
</tr>
<tr>
<td>Scotch</td>
<td>25</td>
<td>12.6%</td>
</tr>
<tr>
<td>Irish</td>
<td>9</td>
<td>4.2%</td>
</tr>
<tr>
<td>Others</td>
<td>36</td>
<td>16.6%</td>
</tr>
</tbody>
</table>

Table 3.—Length of Residence in Canada of 200 Consecutive Cases

<table>
<thead>
<tr>
<th>Residence</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year or less</td>
<td>21</td>
<td>10.5%</td>
</tr>
<tr>
<td>1 to 2 years</td>
<td>15</td>
<td>7.5%</td>
</tr>
<tr>
<td>2 to 3 years</td>
<td>4</td>
<td>2%</td>
</tr>
<tr>
<td>Over 3 years</td>
<td>68</td>
<td>34%</td>
</tr>
<tr>
<td>Canadian born</td>
<td>92</td>
<td>46%</td>
</tr>
</tbody>
</table>

Table 4.—Analysis of 42 Cases, None of whom Had been in Canada More than 3 Years Prior to Date of Admission to Sanatorium

<table>
<thead>
<tr>
<th>Stage of Disease</th>
<th>1 year or less</th>
<th>1 to 2 years</th>
<th>2 to 3 years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Far advanced</td>
<td>16</td>
<td>8</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Moderately advanced</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Incipient</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>

It is not within the scope of this paper to go into immigration matters, but something should be done to prevent these people starting for Canada. Most of them unfortunately had been recommended by some doctor to come to Canada for their health; with the inevitable result that they broke down under the strain of work soon after coming here.

Another fact that has been impressed on me with regard to patients coming to the sanatorium is that out of over two hundred admissions, I remember only one case that came provided with a sputum cup, and not more than ten per cent. had been properly instructed as to the disposal of sputum. This is notwithstanding the fact that practically all the advanced cases were very infectious and had been so for many months previous to admission. In many cases they had been under the supervision of a physician for some time. It is then, I hold, the general practitioner in the first instance that we have to hold responsible in some measure at least
for so many cases becoming advanced. Not until the general practitioner becomes more alert in reference to tuberculosis can we hope to conduct this campaign to a successful issue. There will be more hope when we find more non-tuberculous patients being sent to the sanatorium for diagnosis.

Dr. R. W. Philp, of Edinburgh, in discussing the problem before the International Congress at Rome in April, 1912, says:—"Assuming that it is the intention of a community or a nation to de-tuberculize itself, the first requisite is a clear conception of the issues. The larger facts of tuberculosis must be grasped. There must be a dropping of mere sentimentality regarding particular cases; an effective opposition must be offered to an infective disease which involves a people and is dependent on conditions which they themselves have created." The problem then for us is how are we as a nation going to detuberculize ourselves. It is plain that the measures we have adopted up to the present, while good as far as they go, are not effective in the control of this disease. The first question that naturally arises is how is the disease most generally spread? Dr Arthur Newsholme, after considering all the causes for the spread of tuberculosis, comes to this conclusion, and one I think which is generally agreed to by all who have studied the subject. He says, "In view of the evidence already given, there can, I think, be little difficulty in agreeing that the home treatment of consumptives in crowded dwellings, in which necessary precautions cannot be taken, is a predominant cause of the continued spread of tuberculosis." Accepting this statement our problem is obviously to segregate the advanced cases; yet in no province in Canada and in not more than two or three cities, is any attempt made adequately to handle these cases and segregate them.

In the first years of the campaign the cry was to build sanatoriums and care for the early case. This was good, and the sanatoriums built throughout Canada have done a great work in both curing the disease and educating the people. The advanced cases, though, were refused admission, or were sent home to die among their friends and family, and in their death left a whole crop of cases for the sanatorium to treat, or other charitable institutions to provide for. We have in the last few years awakened to the fact that something must be done with the advanced case, and a few of our larger cities, notably Toronto and Winnipeg, have provided splendid accommodation for this class. In several of the provinces all hospitals receiving government aid are required now to provide
for cases of tuberculosis from the territory they serve; yet scarcely anywhere is there any adequate provision made.

Health officers outside of a few cities are generally apathetic on the subject, and publish in the local papers items showing how free their cities are from tuberculosis because, forsooth, no cases have been reported. In one of the large cities in Canada from which I obtained statistics, the reported cases of tuberculosis were only equal to the number of deaths. It is surely time that some of the cities and rural communities take stock of the number of tuberculous cases they have. This can only be done by an active campaign, headed by the local health officer and backed by the local practitioners.

In this campaign we cannot do better than follow the scheme evolved by Dr. R. W. Philp, of Edinburgh. This city, under Dr. Philp's organization, has from 1897 to 1906 shown a reduction in the mortality from tuberculosis of 42 per cent. Most of you are doubtless familiar with his plan, which is simply common sense organized. The anti-tuberculosis dispensary is made the central office for all anti-tubercular work. To it all indigents suspected of having tuberculosis are referred; from it go out visiting nurses in active search of tubercular cases, which when found are referred to the proper institution for treatment. The early case is sent to the sanatorium for cure, the advanced case is sent to the hospital, the recovered cases to the farm colony, the anæmic and susceptible children are placed in proper preventoriums and open air schools, the dependent families are given necessary assistance, and all cases are reported to the Board of Health so that proper measures for the disinfection of buildings and condemning of insanitary ones may be carried out. This is of course only a brief outline of the main features of Dr. Philp's scheme, but it has been endorsed by authorities the world over.

Recently the Tuberculosis Committee appointed by Mr. Lloyd George to report as to a general policy in respect to tuberculosis in the United Kingdom, recommended as the first unit of that policy at least one tuberculosis dispensary to every 150,000 to 300,000 of population, the second unit to be institutions such as sanatoria, hospitals, &c. There is no reason to my mind why this scheme should not be followed in some modified form in every municipality of Canada. In some of our larger cities dispensaries have been in operation for several years, and the result of their work is always good. Why should not every city or municipality of 20,000 inhabitants or over support a small dispensary with a visiting nurse.
Under the direction of the health officer she would actively seek cases of tuberculosis, and I am sure many health officers would be surprised at the number that could be found. The objection is immediately raised, what is the use of finding these cases if there is no place to put them? That is only too true throughout Canada, but I would guarantee if you were to announce in any city of Canada that there were a dozen cases of leprosy requiring segregation, accommodation would be provided in twenty-four hours; yet we all know that many advanced cases of tuberculosis are more infectious than the ordinary case of leprosy. Our business, then, is to sufficiently arouse the public conscience, and show the public the need.

While not in favor of any methods that would start an unreasonable phthisiophobia among the people, yet I think the facts of the situation should be put squarely to the public in every community. To do this each health officer must make himself acquainted with these facts: people will listen with interest to general facts, but the interest becomes personal when you tell them that there are a dozen cases in their streets spitting germs of tuberculosis carelessly about; they will then not simply give sympathy and a small contribution to the funds of the anti-tuberculosis association, but they will actively demand that steps be taken to control this disease.

It is a mistake that causes much suffering and hardship to send advanced cases of tuberculosis far from their own home and friends. These cases often live for many months, and it is impossible to keep them in an institution so far away that their family and friends cannot come and see them. They are also always hopeful of cure, and unless they can hope for some benefit from their surroundings they soon become discontented. There is no reason to my mind why small and inexpensive hospitals for consumptives should not be built in every community which is large enough to support a hospital. In it let sanatorium methods be followed strictly, and patients treated as if curable. This will be an education both to local practitioners and to the people of the community.

In every province there should be at least one large hospital for advanced cases, to accommodate the large number of homeless people we have in this new country. These hospitals could very well be built in connexion with the provincial sanatoriums. These institutions are continually swamped with applications from advanced cases. Let arrangements be made to accommodate them at a separate building from the early cases. It is true that not many
of them will be cured, but many will be benefitted and it assuredly works for the public welfare to have these cases in an institution. They will be better educated as to care of themselves and others at sanatoriums than anywhere else. The sanatorium statistics will not look as well, but the public would be protected from many highly infectious cases if this policy were adopted.

To summarize: the responsibility for advanced cases rests first with the general practitioner. He is not yet sufficiently awake to the importance of early diagnosis and the proper treatment of pulmonary tuberculosis. If all our final medical students spent at least a month in residence at a sanatorium, it would help to educate them on this important question.

Secondly, the public health officer in every community should take stock of his tubercular cases and keep track of them. This can be done only by having a competent visiting nurse in every community of 20,000 or over.

Thirdly, accommodation sufficient to the needs of the community should be supplied in connexion with every general hospital to accommodate advanced cases.

Fourthly, sanatoria, while primarily for the treatment of early cases, should be prepared to accept all patients applying, as it is often the case that patients can be persuaded to go to a sanatorium when they will refuse to go to hospitals for advanced cases of consumption.

Our motto should be, "Trace out, educate, isolate, make healthy."
ANEURISM OF THE POSTERIOR TIBIAL ARTERY,
RUPTURE OF THE SAC: OPERATION BY
THE MATAS METHOD
(Endo-aneurysmorrhaphy)

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We are indebted to Dr. Matas, of New Orleans, for introducing a method of dealing with aneurism which has proved most efficient in the treatment of such cases. The operation was devised by Dr. Matas for the purpose of effecting a radical cure by taking advantage of a well recognized principle in arteriorrhaphy, namely that surfaces of intima brought together by suture will heal firmly. It is the reverse of the method adopted in intestinal anastomosis—in the latter we invert the cut edges of intestine so as to bring the endothelium of the serous coat into accurate apposition, while in arteriorrhaphy we evert the cut edges of the blood vessels and introduce sutures in such fashion as to oppose the endothelial surfaces of the intima. Matas splits the aneurismal sac, after temporary control of the circulation through it, and, by a series of sutures, he brings broad surfaces of intima together and, when healing takes place, the aneurismal sac is permanently obliterated. It is unnecessary to describe the technique in full as this may be found in papers published by Matas or in any recent text-books of operative surgery.

The principles of this method of operating upon aneurism have been applied by Matas in a variety of ways. First, there is the obliterate suture in which the sac of the aneurism is entirely obliterated and the circulation through the affected vessel is completely and permanently cut off. Secondly, there is the restorative suture which is applicable where a single aperture connects the aneurismal

Read at the meeting of the Canadian Medical Association, London, Ont., June 24th, 1913.
sac with the affected artery. Here the sutures are applied in such fashion as to close the opening and to obliterate the sac while the circulation through the artery continues in the continuity of the vessel. Thirdly, there is the reconstructive suture which is applicable to certain types of fusiform aneurism; this is accomplished by introducing a drainage tube of suitable size into the open mouths of the vessel within the sac and introducing sutures over the tube in such a manner as to reconstruct a lumen for the vessel on the deep wall of the sac. The tube is pulled out before the last few sutures are tied. The remaining part of the aneurismal sac is then sutured as in the obliterative method.

In the case reported in the present paper the obliterative suture was employed. The clinical history is as follows:

G. T., æt. forty-four, was under treatment in July, 1911, for nephritis and arteriosclerosis, with a slight cardiac hypertrophy; the urine at that time had a specific gravity of 1014 and contained many hyaline and a few granular casts, with 2.8 per cent. of albumin. The blood pressure was about 190 mm. Under treatment the albumin diminished to 1 per cent. and the blood pressure dropped to 170 mm. In November, 1911, he suffered from what he thought to be sciatica. During a visit to Texas, on February 8th, 1912, about eleven o'clock in the morning, he experienced pain and swelling, suddenly produced, in the calf of the right leg. The pain continued of varying intensity for a fortnight and then gradually ceased. About the middle of April, 1912, he had another attack of pain which lasted for a short time. At this time also he had an attack of a cerebral nature when he suffered from a peculiar numbness of the left side of the face, accompanied by thickness in speech which still persisted to some extent when he came under observation in June. The size of the tumour remained stationary; it had not appreciably altered when he was examined on June 12th, 1912, —four months after its first appearance. The patient had been an alcoholic for some years, at one time taking as much as a bottle of whiskey in twenty-four hours.

Condition immediately prior to operation. The patient had marked exophthalmos, and on inquiry this appeared to have been of comparatively recent development, probably within the past six months. There was no enlargement of the thyroid. He had marked arterio-sclerosis. The radial arteries were, like those of a man of seventy, hard and tortuous. The blood pressure was from 190 to 220 mm. The heart's action was regular and there was no murmur.
He had a marked tumour of the calf of the right leg. This tumour was not tender on pressure; it was firm and did not pulsate as a whole. The pulsation of the posterior tibial artery could be felt above it and was also found of good quality at the inner ankle, almost if not quite as good as in the left leg. The pulsation of the anterior tibial and of the dorsalis pedis arteries was excellent. There was no œdema about the ankle. There was a well marked bruit, heard on auscultation, over the tumour. This bruit was systolic, loud, rough and blowing. There was also a remarkable musical note which apparently preceded the blowing sound. The circumference around the calf at its most prominent portion was nineteen and a half inches, while the vertical extent of the tumour was seven inches. He suffered no pain in the tumour, but was considerably crippled by its presence in walking. The urine contained 1·6 per cent. of albumin and some hyaline casts. An x-ray picture showed the tumour, but nothing more.

On June 15th, 1912, an operation was performed. An Esmarch broad tourniquet was applied after five minutes elevation of the limb. After the tourniquet was applied, the leg having previously been depleted of blood by elevation, the tumour seemed softer and fluctuating in parts. An incision along the line of the posterior tibial artery was made. One cut through the gastrocnemius and proceeded to incise the soleus, but one found the latter markedly œdematous and its substance presented a ground-glass appearance on section; the normal red muscle colour was markedly faint and the tissues had a grey colour. One cut through the soleus and immediately came upon adherent laminated clot. This was readily separated from the wall of the cyst and was about the size of a hen’s egg in bulk. Beyond this a large cavity contained very dark, almost black, blood clot which lay in a cavity beneath the soleus and having the deeper muscles of the calf in its floor. This blood cyst or ñæmatoma lay in a cavity of fascia no doubt forming its superficial boundary. It was limited above by the attachment of the soleus to the oblique line of the tibia. The dark blood clot appeared to be of recent origin. The laminated clot was much lighter in colour, in fact it was in places grey. The clot was scooped out with the hand and the cavity washed out with hot saline solution. The interior was now carefully inspected; it was difficult to find any large blood vessel opening into it. On closer inspection, however, one found a patch of the cyst wall which presented a very different appearance from the remaining portion. This proved to be a ruptured aneurismatical sac with two openings on its posterior
surface into which a probe could be passed, upwards from one opening and downwards from the other. Obviously this ruptured sac was covered by endothelium of the arterial wall. The floor of the larger part of the cyst beyond this small patch, was thrown into longitudinal folds and was formed by the deep muscles. Its surface was roughened irregularly over the greater part of its extent.

The ruptured aneurismal sac was closed by the Matas method. No. 1 chromic catgut was used for the purpose. At first one inserted a row of interrupted sutures to close off the arterial openings, using about eight sutures to the inch and employing a full-curved intestinal needle. This was followed by a continuous suture of the same material running longitudinally over the line of the deeper interrupted stitches. A third row was introduced in similar fashion until the aneurismal sac was completely obliterated.

The tourniquet was released after packing the cavity with hot gauze sponges, when slight bleeding occurred from numerous points, apparently of venous origin. Hot sponges and pressure caused this to cease almost entirely, but as one feared a hæmatoma one placed a drainage tube in the lower angle of the wound, then interrupted silk-worm gut stitches through the divided muscles and skin. More accurate approximation of muscle was secured by No. 2 sterile catgut. The silk-worm gut stitches were tied and the skin brought together by horse-hair. A double splint of plaster of Paris was applied over a suitable dressing.

The blood pressure during operation went up to 260 mm. and it is interesting to observe that there was some oozing of blood into the cavity when this high degree of pressure was reached—the tourniquet being still in place and undisturbed. Immediately before this occurrence the wound was almost absolutely dry.

It was quite obvious that an aneurism of the posterior tibial artery had ruptured. The aneurism was of the fusiform type and about the size of a pigeon's egg. It had ruptured no doubt when the patient experienced the sudden pain and swelling, with the production of a large hæmatoma beneath the soleus. The laminated blood clot was found in the region of the aneurismal sac only, but its formation must have extended partly beyond the limitations of the arterial portion of the cyst.

A piece of the laminated clot was preserved and, when cut across, its centre was found to contain a soft, dark, blood clot. It appears that either this clot really occupied the aneurism and that a portion of the aneurismal wall was torn away with the clot, leaving only the patch behind already referred to, or that part of
the aneurismal wall was completely destroyed, or destroyed to such an extent as not to be recognizable.

The patient made a good recovery from operation and left the hospital. He was living in a cottage on Toronto Island during the month of August. He was placed on a special diet, the albumin in the urine diminished to one-third of one per cent., the blood pressure remained from 170 to 180 mm., and he was enjoying fair health, when he was unfortunate enough to contract pneumonia. At that time his leg was getting strong, his speech was almost normal and he appeared to be remarkably well. He passed his crisis successfully but was suddenly seized with coma of uræmic origin and died in a few hours on September 6th, 1912, having lived about three months after operation. Unfortunately we were not able to obtain a postmortem examination.

The case reported in this paper is perhaps worthy of record because the aneurism was situated in a region in which the operation of Matas has rarely been performed. In only one instance out of eighty-five in the published statistics of Matas was the posterior tibial the artery affected. Our case is also of interest because the operation was successfully carried out four months after the aneurism had ruptured. Further, the patient was severely handicapped for operative procedure by reason of the existence of nephritis along with arteriosclerosis and an unusually high blood pressure.
Case Reports

NOTES ON TWO CASES OF INTESTINAL OBSTRUCTION

Case 1. Traumatic rupture of the jejunum; fourteen hours later operation with repair of the tear, followed by peritonitis with gradually progressing obstruction, becoming complete thirteen days after operation.

Mr. D., aged forty-six, blacksmith, at 10 a.m. July 22nd, 1912, was kicked by a horse in the abdomen over the left rectus muscle, one and a half inches above the umbilicus. Patient was prostrated, complained of severe pain, and vomited. Dr. Walker, of Glencoe, was called and advised the patient's immediate removal to hospital, which he declined until near midnight. He complained of severe abdominal pain, continuously during the day, notwithstanding large doses of morphia. On admission to Victoria Hospital at midnight, patient presented some shock, thoracic breathing, and general abdominal rigidity, but more marked over the site of the injury. The skin of the abdomen was not broken, and beyond a slight redness there was nothing superficial to be seen. The left thigh was flexed on the abdomen. Patient was nauseated and vomited a little. He did not complain of much pain, but was well under the influence of morphia. The catheter drew off normal urine. A provisional diagnosis of ruptured intestine was made, especially on account of the marked abdominal rigidity, and operation was begun under ether narcosis at 2 a.m. July 23rd, i.e., fourteen hours after injury. A left rectus incision disclosed free fluid in the peritoneal cavity with the omentum adherent under the transverse colon to the small intestine. This adhesion led down to a rent in the first part of the jejunum, admitting the tip of the index finger. The intestinal mucosa was prolapsed and almost closed the opening. The rent was closed with two linen sutures and invaginated by two purse string sutures. No stenosis resulted from closing the tear. The rupture taking place at the very beginning of the jejunum and the tense abdominal muscles, which did not relax well during anaesthesia, made the operation difficult. Beyond a slight tearing away of the transverse mesocolon from the colon, no other injuries were discovered. The abdomen was closed around a rubber tissue, gauze-
covered, tube which extended down to the damaged intestine. The patient was put in Fowler’s position and continuous saline administered per rectum. He reacted well but developed some peritonitis, as evidenced by abdominal rigidity with elevated pulse and temperature. The wound suppurated deeply. His pulse and temperature were normal a week after operation and he appeared to be doing nicely, except that he was gradually becoming distended. His bowels were acting daily. He complained of slight pain at times and frequently gulped up a mouthful of stomach contents. His condition during the next few days remained very much the same, except for the increasing distension, until August 5th, when he had not passed faeces or gas for twenty-four hours, notwithstanding large doses of eserine and enemas. His pulse and temperature were going up, and we decided to explore the abdomen. A median incision below the navel was made, anaesthesia being perfect with ¼ per cent. cocaine in normal salt solution. On opening the peritoneum a loop of small bowel, non-distended, shoved itself into incision. This was held back while the peritoneum was opened more fully, when a larger loop of small intestine worked up into incision. It was very much distended, bluish, and thinned to the thinness of tissue paper, the intestinal contents being easily seen through the wall. The omentum was adherent to it. The obstruction seemed to be the result of adhesions in the pelvis, but the distended loop was so thin and rupture so imminent that a satisfactory diagnosis could not be safely made. We contented ourselves with stitching the distended loop to the peritoneum on all sides, thus shutting off the general cavity, and putting a purse-string suture in the exposed bowel and invaginating a Paul tube, tying the purse-string over it. Fully a quart of intestinal contents drained out in a few minutes. It might be wise in the majority of cases to wait some time before opening the bowel, but in this case the intestine was so distended that waiting seemed hazardous. Continuous saline was administered after operation, with nothing by the mouth for two days. A good faecal movement took place from the rectum on the third day after operation, and the distended abdomen quickly receded. After the Paul tube became loose and was removed, the intestine was afferently and efferently irrigated daily by means of a long rectal tube. Most of the washings after being retained for a few minutes would be expelled from the rectum. In three months from the operation, the fistula was completely closed and the bowels were acting daily, only at times requiring an enema. I examined the patient in March, 1913, and
beyond two ventral hernias at the site of the incisions, he is quite well. He has no obstruction, and weighs more than he ever did.

This case taught us first, that it is not necessary to have marked pain and vomiting with obstruction.

Secondly, that infiltration of cocaine solution is very efficient in opening an abdomen.

Thirdly, that the mode of procedure to relieve the obstruction, although only a crude makeshift may at times be useful where further exploration would cause rupture, or where the obstruction, when found, cannot be relieved with a safer method.

**CASE 2. Lateral anastomosis in an inoperable carcinoma of the cæcum, with obstruction.**

Mrs. P., aged sixty-one, presented herself December 16th, 1912, complaining of cramp-like pain in the abdomen, at times nausea, belching of gas, borborygmi, diarrhoea with watery stools, anorexia, and abdominal distension. Patient informs us that last June she had an attack of pain in the upper abdomen that kept her in bed three days, following which she was quite well until two weeks ago, when the present trouble started. Examination shows a distended abdomen with no points of tenderness or rigidity, but with an ill-defined mass on the right side, which seems to extend down into the pelvis. Every few minutes, and especially on manipulation, three distinct coils harden, lower themselves in the abdomen, and then immediately rise up fully two or three inches above the umbilicus. In a second or so she complains of pain, and gas can be heard under pressure. Patient was informed of a diagnosis of intestinal obstruction, but she thought she was no worse than she had been at times during the past two weeks. Late the next night I was asked to see the patient. The pain was more severe, no gas or stool had passed that day, although an enema I ordered brought away traces of stool. She was vomiting and straining every few minutes. The vomitus had a marked fæcal odor. Abdominal examination showed more distension than on the previous day. Patient was moved to Victoria Hospital and Dr. John A. McGregor saw the case with me in consultation. He corroborated, and added that probably the obstruction was cæcal or in small intestine, as the colon was not distended. While making preparations for operation, morphia gr. $\frac{1}{4}$ and hyoscine gr. 1-100 were given hypodermically; $\frac{1}{4}$ per cent. cocaine infiltration anesthesia was used as in preceding case. Median incision beneath the navel showed free fluid in the peritoneal cavity, with a generally distended small intestine. A mass, the size of an egg, implicating the ileo-cæcal junction was
partially delivered; and carcinoma was diagnosed. Enlarged glands were present in the mesentery fully two or three feet on either side of growth. The growth was fairly adherent to the posterior parietes. The colon was very much contracted. The mass was considered inoperable owing to the free fluid and the wide extension of the growth in the glands, and a lateral anastomosis was decided upon to relieve the obstruction. A loop of ileum three feet from the growth was anastomosed to the transverse colon, using Moynihan's technique. No drainage was used, and the abdomen was closed in layers. One pint of salt solution was injected under the breasts. Patient convalesced rapidly. She never vomited after the operation, the pulse and temperature remained normal, and the bowels moved well on the third day, and daily since. She has no nausea or pain, and passes gas freely. The wound healed by first intention. Ether was required to finish the operation as the tugging on the mesentery caused pain. I examined the patient April 29th, 1913, and except for some diarrhoea, she is comfortable.

London, Ont. J. J. Mason

At the half-yearly meeting of the Summit County Medical Society, which took place at Akron, Ohio, on June 3rd, Dr. McCallum, the president of the Canadian Medical Association, was made an honorary member of the society. Dr. McCallum enjoys the distinction of being the first recipient of such a mark of esteem on the part of the society since it was organized in 1842.
THE CANADIAN MEDICAL

Editorial

THE ANNUAL MEETING

THE forty-sixth annual meeting of the Canadian Medical Association will have been held before this number of the JOURNAL reaches the members. As the meeting was held in the latter days of June the exigencies of publication do not permit of an extended report. Of necessity that must remain until August. At the moment of writing everything is of good augury for a successful event. The vigour of the local committee in London is unabated, and the officers are working in harmony which is altogether admirable. The members to a gratifying number have signified their intention to attend, and the formal addresses are in good hands. The programme stands with few amendments as published in June, and there is every indication that it will be carried out in its entirety.

From an advance copy of the president's address with which we have been favoured, it would appear that Dr. McCallum has dealt trenchantly with the defects in the organization of the profession. We cannot, however, refrain from expressing the opinion that he sets too high a numerical standard for the Association, at least for immediate attainment. It is a remarkable feat to have achieved so large a permanent membership in so short a time. As the value of association becomes more apparent and the need more pressing the body will increase and the organization become more secure.

Another theme which Dr. McCallum took for his own is the relation which exists between the manufacturer of medical preparations and the profession. On the face of it, there is an appearance of the profession being "exploited," but in
reality there is no remedy. We cannot have it both ways. We cannot be disinterested and at the same time share in pecuniary profit. That is the heresy into which Dr. Friedmann fell. The most we can ask is that the manufacturers supply an honest article; and there is every evidence that they comply with this demand. With their pecuniary success we have nothing to do. If their profits are too great, other "business men" may be trusted to look to that. However it may be in England there is no sign in Canada of any legislative interference with the freedom of the profession. The relation of the physician to the patient is unimpaired. The control of medical education rests where it belongs, namely, with those who know most about it. The confidence of the public in the universities and in the profession is rising; and the Association itself is regarded as an institution which is concerned most with the public welfare and not with professional aggrandizement.

For the address in surgery Dr. Hutchison chose as his subject, "Fractures and their treatment." No subject could have been more timely. Since the introduction of radiography this branch of surgery has become one of especial interest, and many radical changes have taken place in the knowledge of bone regeneration and repair. Two important associations have made this subject their own, namely, the British Medical Association, and the American Surgical Association, and their reports deserve the most weighty consideration. Fractures have always been a source of medico-legal anxiety to the profession, and the employment of radiography has not made it less. Patients and their friends expect to see the plates, although they are too inexperienced to read them correctly. It happens frequently in law-suits that these plates are brought into court where laymen feel qualified to interpret what they see, and this in face of the dictum of the American Surgical Association, uttered as long ago as 1900, that "skiographs alone without expert surgical interpretation are generally useless and frequently mis-
leading.” The ownership of these plates is yet in dispute, and it has not been settled in how far an operator is justified in disposing of plates which he had made for a surgeon in the treatment of a case.

THE FRIEDMANN AFFAIR

Dr. Friedman has come and gone. The high hopes which were so assiduously, and not quite disingenuously, encouraged, have vanished; and sufferers from tuberculosis are left to bear as well as they can a fresh disappointment. The attitude of the profession in America was upon the whole correct. The situation was a delicate one. The visitor did not choose to proceed by the usual channel, and it was difficult for the profession to hold a middle course. On the one hand, there was danger lest the public should be imposed upon. On the other there was danger lest a method of treatment, which upon the face of it did not appear absurd, might be unduly disparaged. There is a large and noisy section of the public which cannot get into its thick head that the safety of the patient is the supreme law with the profession, and is too ready to ascribe to it the motives which actuated Demetrius and his fellow craftsman. Even in the United States no unusual difficulties were placed in Dr. Friedmann’s way. He was merely asked to observe the law which in process of time had grown up for the protection of the people. It was well understood that he had come to America without those credentials which a visitor usually exhibits. Indeed he was preceded by information which made caution a necessity. In Canada the state of mind was one of curiosity, a desire to know, and a willingness to be convinced. Accordingly, the adventurer was invited to Montreal, not by the profession, it is true, but by an institution in which the public and the profession has confidence, to demonstrate his theories and to apply his method of treatment. It is only fair to Dr. Friedmann to say that he came willingly and without any demand
or suggestion of pecuniary reward. He was offered every facility, and patients at their own formal request were placed at his disposal. He made a second visit, and all his requirements for a thorough test were fulfilled. The results were observed closely, and although a report has not yet been issued it is a matter of common knowledge that nothing of good has happened. In New York a report upon eighteen cases was published in The Medical Record on June 8th. "In not a single one of them," declares Dr. Mannheimer, "was there definite improvement to date attributed to the vaccine. In some, the disease has progressed unchecked. In no instance did the temperature return to normal. Five of the eighteen developed abscesses, four of them small and one large. I cannot determine whether the vaccine hastened the progress of the disease where it occurred." Following is a summary of the cases:

Case 1, married woman, forty years of age, sick fourteen years. There has been no change either way in this case.

Case 2, man, thirty-four years of age, had pulmonary tuberculosis twelve years; result, no change.

Case 3, married woman, age thirty-seven, no improvement, but troublesome sinuses.

Case 4, girl, twenty-one years old, had pulmonary tuberculosis twelve years, patient is worse. I would not advise a second injection by Friedmann method.

Case 5, man, forty years old, bookkeeper, pulmonary tuberculosis for four years; result absolutely negative.

Case 6, farmer, thirty-eight years old, a man who had so much confidence in injection that he married; local infiltrate disappeared and patient is getting worse.

Case 7, showman, twenty-eight years old, when re-examined on May 10th had lost seven pounds, but felt fairly well.

Case 8, man, thirty years old, ten days after treatment said he was greatly improved; when re-examined subjective conditions fair, but disease had advanced and is still spreading.

Case 9, man, twenty-six years old, four weeks after injection old perirectal abscess opened again. Coughed a little blood on the 22nd.
Case 10, man, twenty-eight years old, teacher, sick four and a half years, put to bed in hospital. The result in these last four cases is so far unfavourable.

Case 11, physician, forty-six years old, sick two years. The result of injection is that he coughs and expectorates more and does not look as well. As the result of this case particularly, I am disgusted with Friedmann's methods.

Case 12, lawyer, twenty-seven years old, laid up in bed since end of March with broncho-pneumonia, fever, hæmorrhages, and appearance of bacilli. Disease not checked by vaccine.

Case 13, collector, thirty years old, result no improvement, infiltrate broke down and discharged pus.

Case 14, hospital orderly, twenty-six years old, tuberculosis of kidneys and bladder, no improvement, tubercle-bacilli still present.

Case 15, boy, four and a half years old, a case of tuberculous lymphnodes, which Friedmann did not consider suitable for his vaccine.

Case 16, a boy nine years of age, tuberculosis of hip for three years; result, no change in joint condition.

Case 17, butcher, twenty-seven years old, so far improvement neither in his affected lungs nor knee.

Case 18, boy, sixteen years old, typical case of tuberculosis of ankle; injection followed by sharp general reaction, followed by less pain and freer motion; but soon old condition returned; second injection May 26th, no improvement since.

However it may be with the individual patient, there is in the mind of the profession no ground for despair. Twenty-five years ago Koch's tuberculin was acclaimed nearly as loudly. During a whole winter it was tried in the Montreal General Hospital. The results were closely observed, and in the end the late R. L. Macdonell summed up the whole matter in the memorable words, "the more we looked, the less we saw." And yet the steps which led to the discovery of tuberculin form a stage in the advance of knowledge. Although Dr. Friedmann's venture has ended in fiasco, it may at some future time be considered a mark at least upon the path by which victory will have been attained.
DOMINION REGISTRATION

DOMINION medical registration is now an accomplished fact. The adjourned meeting of the Medical Council of Canada—better known as the Dominion Medical Council—was held in Ottawa during the week ending June 21st. With one exception, through illness, all the members, thirty-two in number, were present. The utmost harmony prevailed, and much work was accomplished including the passing of regulations requiring the approval of the Governor-in-Council. The subjects of examination were decided upon, being practically anatomy and physiology of the primaries and all the final branches—written, oral, and clinical. A staff of twenty examiners, both French and English, was selected for the work. The city of Montreal was chosen as the centre for all the examinations for this year, and the date decided upon was October 7th. At the first meeting of the Council in November last, it was thought advisable to hold the examinations in four places simultaneously, namely, Halifax, Montreal, Toronto, and Winnipeg; but the scheme had to be abandoned owing to the enormous expense involved and the feeling that the examinations would lack uniformity. While Montreal has been chosen as the centre for the present year only, it is not unlikely that the idea of selecting one town in place of four will prevail in the future; and while there are seven teaching centres in the Dominion, at any one of which the examinations could be held, those having the greater clinical facilities may reasonably be preferred and a system of rotation established. It is probable that the examination of Laval university students will always take place in Montreal or Quebec.

The register of the Medical Council of Canada will be opened on July 1st of this year. This was considered a propitious date, being the anniversary of the confederation of the provinces; and thus the anniversary of the confederation of the provinces and that of the medical profession in Canada
would run concurrently. Those who have been ten years in practice may register, therefore, on July 1st. Section 18, sub-section 2 of the Act reads: "Any person who has received a licence or certificate of registration in any province previous to the date when the Council has been first duly constituted under this Act and who has been engaged in the active practice of medicine in any one or more provinces of Canada, shall after ten years from the date of such license or certificate be entitled to be registered under this Act as a medical practitioner without examination, upon payment of the fees and upon compliance with the other conditions and regulations for such cases prescribed by the Council: provided that, if the medical council of any province is not satisfied with the period of years prescribed by this sub-section, such medical council may, as a condition to provincial registration, exact an examination in the final subjects from practitioners registered under this sub-section and the said examination shall be held according to the provisions of the by-laws or rules of the respective provincial council."

Under this section, any medical practitioner who has been licensed, or has received a certificate, in any province prior to the date of the constitution of the Council, and has been engaged in the active practice of medicine, after ten years—part of which may elapse before the Council was constituted and the remainder after the Council was constituted—may become entitled to apply for and receive a licence. Consequently, the candidate who has been in active practice and has been licensed for nine years and six months at the date when the Council was constituted will have to wait for six months, and may then apply for registration without examination. Concerning the proviso, it was distinctly understood at the meeting that this would be exacted by one province only, namely British Columbia.

With reference to the other class of candidates for the license, namely those of whom an examination is exacted, clause 12 of the Act provides for them. It reads thus: "No
candidate shall be eligible for any examination prescribed by the Council unless he is the holder of a provincial licence, or unless he presents a certificate from the registrar of his own provincial medical council, that he holds a medical degree accepted and approved of by the medical council of the said province." The phrase in this clause which has given rise to a great deal of discussion, namely, "his own provincial medical council" has been interpreted by the solicitor of the Council as follows: "The provincial medical council referred to by this clause would be the council by which the candidate has been matriculated or entered as a student. Where no matriculation or entrance examination is required by the provincial medical council, a candidate is entitled to apply to the provincial medical council in which he has his domicile and to obtain a certificate from the registrar of such provincial medical council stating in the language of the amended section that he is the holder of a medical degree accepted and approved of by the medical council of the province."

Thus, after nearly twenty years of struggle, arrangements have been made at last to remove the absurd condition of affairs affecting the medical profession in Canada, whereby a medical man in the exercise of his calling was unable to cross an imaginary line, or a narrow river between two provinces without running the risk of fine and possibly imprisonment. In order to secure the right now obtained to practice in all the provinces of Canada, it would have been necessary to pass the examinations exacted by nine provincial boards. Moreover, this has been accomplished without disturbing the autonomy of the provinces in any way. Provincial boards or councils will continue to exist for many years for the purposes of taxation and discipline and for the examination of those desiring to practise in one province only. Doubtless, in time, the majority of the provincial boards, one by one, will relegate their authority to the Dominon body, until there shall be one door only of entrance to the practice of medicine in Canada.
A special course of post graduate work for the benefit of British medical men is to be given in Paris next autumn under the direction of Professor Widal. The course will include clinical work and clinical teaching, practical bacteriology as regards diagnosis, and the practical teaching of bacteriological methods applied to clinical researches, more especially the practical demonstration of Professor Widal's original methods. The exact dates of the course have not yet been determined, but it is probable that the lectures will be commenced in October.

The Union Médicale Franco-Ibéro-Américaine—or "Umbia" as it is called from the initial letters of the full title of the Association—was formed in Paris a few months ago. The purpose of the Association is to unite physicians of Central and South America with those of Spain and France, the membership being open to any doctor who speaks Spanish and Portuguese. It is proposed to establish a Hispano-American hospital, to arrange scientific tours, and to make available to members summaries of all medical papers written in Spanish. It is the intention also to establish an information bureau in Paris for Spanish or Portuguese doctors and to assist them in case of need.

Some adverse comment upon the Hamilton civic hospital was made by Dr. Bruce Smith on the occasion of a recent inspection; in fact the recommendation was made that the government grant of $10,000 should be discontinued unless the conditions at the hospital were improved. A meeting of the board of governors was called to consider the matter and the charges made by Dr. Bruce Smith to a great extent were denied. It was stated that the hospital is overcrowded and in need of improvements, but that the estimates had been cut down by the board of control and, consequently, it has been impossible to make the alterations. It was denied that the hospital was in a "dishonorably dirty" condition. The reports are conflicting and the question awaits solution by those in a position to judge of it.
Book Reviews


Comparing this edition with previous ones we note, according to the preface, that twenty pages have been added, and several old cuts have been replaced by new ones. There are plates showing the movements of the stomach and intestines made by the use of the x-rays. Possibly, as the author says, these cuts have not appeared in any other English text-book of physiology, but they are not uncommon in periodical literature, and some excellent ones have been reproduced on these pages. The chapter upon Internal Secretion has been rewritten, and the pineal gland comes in for fresh consideration. All of the newer physiology receives adequate treatment. As examples we may note the correlation of the ductless glands, Abderhalden's new test for pregnancy, and the increase of cholesterol in that condition. A particularly interesting section is that which deals with milk secretion. There are nearly five hundred illustrations many of which are new in drawing and in design. Words are used with reserve. The amount of material in the book is enormous, and there is a singular lack of profitless discussion of rival explanations of phenomena. Dr. Ott continually exercises his own judgment, and he has produced a book which is replete with sound learning.


This book is familiar to all who are especially concerned with the treatment of nervous diseases, and they will be glad to have the latest results of the author's experience in this, the fourth edition. It has grown to nearly one thousand pages, and is a well considered
presentation of this most perplexing subject. During the past thirty years Dr. Starr has accumulated much material, and he has drawn upon these with a lavish hand. He has not been content with recording the various theories of disease, and due attention has been given to differential diagnosis and treatment. Nor does he neglect the description of the surgical measures which at times produce such brilliant results. We may well believe that the author's desire will be gratified, that in this new form the work will add to its practical service as a text-book for students and as a guide for physicians.


A book on midwifery of which 20,000 copies have already been printed, and is now in its sixth edition, requires slight comment, especially when it comes from the Master of the Rotunda Hospital, and is issued by the Macmillan Company of Canada, which has done so much to disseminate good literature from the European schools. The introduction from the hand of Sir W. J. Smyly, formerly the Master of the Rotunda Hospital, which appeared in the first edition, still stands, and the statistics have been analyzed again. The cases now number 36,227. During the past year there has been a remarkable outpouring of books upon this subject, and yet Dr. Jellett's still holds its own.


This series consists of short monographs, translations, and minor text-books, on subjects related to the specialty of nervous and mental diseases. This monograph is the seventeenth in a long and useful series. The translation from the German is made by Dr. C. R. Payne, and for it we have nothing but praise. The task was a heavy one as English equivalents had to be found for the new terms that accompany new ideas, and as much of Freud's thought
is new and strange, it must have been difficult to make the translation so lucid, accurate, and unambiguous as it is. The book is intended to serve as an introduction to the application of the psychoanalytical method in the study of the neuroses. The book does not make exactly easy reading, but no book which is worth while does. The translator and publishers have rendered a useful service to the profession. As we are informed by Dr. Jones, by way of introduction, the volume is "a synthetic presentation of the Freudian theory," which, after all, is not a fixed philosophic doctrine but a growing body of science.


The new features which one notices in this edition of Dr. Potts' well-known book, are a reconsideration of tic, myotonia atrophica, progressive lenticular degeneration, and disbasia lordotica deformans. The symptoms and methods of examination have been amplified. Dementia paralytica finds its proper place amongst the diseases of the brain and cord, and the latest views of the Wassermann reaction have been stated. The book continues to be, as it has been from the first, a standard for students and practitioners who wish to inform themselves upon nervous and mental diseases.


This work of Dr. Pottenger is based upon the treatment of two thousand cases of tuberculosis, and is a succinct account of the use of this substance, especially for purposes of diagnosis. Upon the whole, the author is inclined to think that tuberculin when administered properly is of great value in promoting the healing of tuberculosis. He gives evidence to show that its employment is increasing in favour. Although he is an ardent supporter of tuberculin, he has always reinforced it with measures which improve the physical and mental condition of the patient. He thinks the time is near at hand when many of the simpler cases will be treated by the general practitioner by this method. The book is a strong plea for more general recognition of its value. The writer gives one the impression of entire sincerity.

This small book of one hundred pages bears the imprint of the Macmillan Company of Canada, although it must not be assumed on that account that it was printed in this country. The excellence of the text and illustrations would disprove the assumption. The author does not go to the extreme of laying down as a dogma, that all practitioners should be trained to record the movements of the several heart chambers by machinery. He entertains the belief that most disturbances can be identified by simpler means, but he points out that the use of the sphygmograph encourages accuracy, although much can be accomplished without it.

Solidified Carbon Dioxide in the Successful Treatment of Cutaneous Neoplasms and Other Skin Diseases, with Special Reference to Angioma, Epithelioma and Lupus Erythematosus. By Ralph Bernstein, M.D. Illustrated. Hammond, Indiana: Frank S. Betz Company, 1912.

This little book of less than one hundred pages is a plea for the use of solidified carbon-dioxide in the treatment of cutaneous neoplasms. The author expresses the belief that this substance will eventually take the place of the x-rays in their treatment. He has brought to bear upon the theme, a great deal of clinical experience drawn from a wide range of practice. It would appear that Dr. A. Campbell White, in 1899, was the first to use liquid air in the treatment of cutaneous diseases, and it was Dr. Pusey who first suggested the use of carbondioxide as a substitute. The illustrations of cases before and after treatment, would appear to be quite convincing.


The difficult subject of the nature, use, and equivalents of prisms is set forth in this little book of 144 pages with extraordinary clearness, that is, as clearly as can be done, by means of text and figures.
Vaccine and Serum Therapy, including also a Study of Infections, Theories of Immunity, Specific Diagnosis and Chemotherapy. By Edwin Henry Schorer, B.S., M.D., Dr.P.H. Second revised edition; price, $3.00. St. Louis: C. V. Mosby Company, 1913.

Since the first edition of this book was published in 1909, there has been a large increase in the knowledge of vaccine and serum therapy. Since that time this method of treatment has gained increased recognition. Four years is a long time in these days, and the second edition of this book is issued none too soon. It contains all that is necessary for physicians to know about this new and fascinating method of treatment. The text is well done and the illustrations are adequate. Dr. Schorer has had a large and varied experience, and is the master of the technique of the laboratory.


Upon five previous occasions we have called attention to Dr. Lewis Jones' "Medical Electricity" and always with commendation. The present edition is the sixth, and in it is to be found evidence of the marked change which has in recent years taken place in our conception of electro-therapeutics. As the author says in the preface, there was in the past, much uncertainty as to the modes of action of electricity on the body, but we may now take our stand upon a firmer foundation. He begins with the understanding that electrical applications act either by the chemical effects which they produce, or by their thermal effects. The book has long been, and continues to be, a sure guide to the employment of electricity in medicine.


A new book on the surgery of the eye has an especial interest even to persons who are not immediately concerned with ophthalmology. This book, by two New York surgeons, is thoroughly workmanlike, and is upon rather a new plan. Preceding a descrip-
tion of each group of operations, there is a consideration of the
diseases for the relief of which they are intended. Indications are
given for the selection of the proper procedure, and a detailed
description of the operation follows, with a list of the instruments
required. Next, possible complications are considered, along with
the after care of the patient. All the usual operations are described,
and certain others that have been found of value in the experience of
the writer. The illustrations are all fresh, and they have been used
without restraint; possibly too freely when one considers the accessi-
bility of instrument-makers' catalogues. This book does all that
any book can do for a student or practitioner. The rest must be
left to experience at the bed-side and in the operating-room.

FIBROIDS OF THE UTERUS: THEIR PATHOLOGY, DIAGNOSIS, AND
TREATMENT. By Sir John Bland-Sutton. Illustrated; price, cloth, 4s. 6d. net. London: Science Reviews Limited, 1913.

In this little book an attempt is made to set down in narrative
form a summary of our knowledge of the extremely common tu-
mours, known as Uterine Fibroids. These are the words of the
preface, and the author adds,—Hysterectomy for fibroids is un-
rivalled amongst surgical procedures for its ability to amend invalid
women by thousands. The book is a development of this thesis.
Sir John Bland-Sutton brings to bear upon the subject an enormous
experience, and an acute mind.

ACUTE POLIOMYELITIS (Heine-Medin's Disease). By Dr. Ivan
Wickman, Stockholm. Translated by Dr. J. Wm. J. A. M.
Maloney, F.R.S. Ed. Illustrated; price, $3.00. New York:
Journal of Nervous and Mental Disease Publishing Company,
1913.

This disease is of perennial interest, and scarcely a month
passes without an important monograph or book being issued upon
it. The present monograph which is issued in the Nervous and
Mental Disease Monograph Series is by Ivan Wickman, a leading
authority in Sweden, where the disease has a reputation of being
especially rife. It was Wickman who reported the great Swedish
epidemic of 1905, and demonstrated that the disease was a general
infection with specific localization in the nervous system. In spite
of the enormous amount of work which has been done upon the sub-
ject in recent years, it must not be taken for granted that the causes
are yet understood. Indeed, it is not settled that epidemic and acute poliomyelitis are one and the same thing. The monograph will be found of extraordinary interest, not only in the facts which it represents, but in the admirable manner in which they are presented.


This is a solemn book, and yet a hopeful one. Most books upon narcotic drug addiction are written in a spirit of utter pessimism or of open charlatantry; and the pessimism seems to be most marked in the case of those who have had the largest experience in the treatment of the condition. The opening of this book is not encouraging. It describes itself as "intensely practical," and in the dedication as a "Ground for Hope, a Rift in the Clouds, a Helping Hand." We seem to have heard this before. But the author wins approval when he demonstrates that the habitual user of narcotic drugs is suffering from a disease and not a vice, and that his condition is due to a toxæmia, which in turn is due to defective elimination induced by the drugs. Also, one shares with the author his indignation at the barbarities which in asylums and prisons are inflicted upon victims of drugs, where these unfortunate creatures are deprived suddenly of their support without any compensatory measures being taken for their relief. Dr. Pettey puts forward a method of treatment which is quite rational and, according to his testimony, successful. It is based upon thorough purgation, not at random, but by a well studied system by which all parts of the intestinal tract are induced to return to activity in due order. As an adjunct scopolamine is used, not as an antidote, for antidote there is none. The experience of Dr. Pettey will give fresh hope to many a discouraged practitioner.


So far as we are aware this is the only book in the English language, with the possible exception of Logan Turner's, which deals adequately with the diseases of the accessory sinuses of the
nose. It is in the first place intended for specialists, and they will find in its 400 pages, beautifully printed and illustrated with a lavish hand, everything which pertains to that department of their work. The illustrations are 247 in number, and there are besides six coloured plates. The references to the literature are extraordinarily copious. The work is entirely creditable to American surgery and is likely to form a standard for many years to come.

**THE DIFFICULTIES AND EMERGENCIES OF OBSTETRIC PRACTICE.**

The object of this book is quite definite, namely, as set forth in the preface, to afford practical guidance to the practitioner when he is called upon to deal with the difficulties and emergencies that attend obstetrical practice. The physiology and the management of the normal condition is omitted from the pages as not being germane to the purpose of the authors, and as there are already so many excellent text-books treating of those subjects. The book has arisen out of the experience of the authors, and it is only on rare instances they have cited other authorities. All the illustrations are fresh. In a book of nearly eight hundred pages these two accomplished practitioners have dealt with every possible difficulty or emergency which is liable to occur. The printing is clear, and the headings are bold. The text is compressed, and the book will be found a sure guide in all of those emergencies which arise with such startling suddenness in this branch of practice.

**THE MODERN TREATMENT OF NERVOUS AND MENTAL DISEASES.**

During the past year the number of books dealing with the nervous system has been remarkable. From a reference to these
pages, it would appear that nine books either new or in revised editions have appeared. Now comes a new work done in a new way. It is to appear in two volumes of which the first has been issued. It is a volume of nearly nine hundred pages, and its successor promises to be equally comprehensive. What then is the justification for so voluminous a work in so crowded a field? In the first place, the authors know how to write. Next, they know the subject, and they have gathered together a remarkable list of contributors. To this volume there are nineteen. The authors consider the nervous system to include the mind, and maintain that disturbances of any and all of its functions, mental as well as physical, are the proper subjects for therapeutics. They have not confined themselves to details, important as these are, but have laid most stress upon "the larger human problem of the individual, the man, the biological unit and his social relations." They are less concerned, as they mention in the preface, to patch up broken machinery, but rather to give directions for avoiding the wrecks. They lay emphasis upon the psychical side of life as being worth quite as much consideration as the physical. In the face of much "pessimistic nihilism" they affirm that "neurology and psychiatry offer the widest possible opportunities for preventive medicine, as well as for therapeutic optimism." Accordingly the work is not addressed to the medical practitioner alone. It is written for him principally, but the authors appeal to a wider audience: the educator, the legislator, the judge, the lawyer, the student of the problems of criminology, of immigration, of dangerous trades, the hospital superintendent, the social worker, the military man, even the intelligent laymen, all will find this work within their comprehension. They have produced a work in philosophy rather than a text-book in medicine; and they have faced boldly the problem of race amalgamation which is now going on in the United States, which is indeed, "a prodigious biological experiment." They are quite logical and have taken the position that the work "insanity" should be eliminated from medicine, as a relic of that time when all brain disorders with predominant mental systems were considered as one disease. Certain of the chapter headings will indicate the general nature of the treatise, namely, Heredity, Education, Delinquency and Crime, Immigration and the Mixture of Races, Prison Psychoses, Nervous and Mental Disorders in their Military Relations. With nineteen contributors it is obvious that the contributions will not be of equal value, and we would select the chapter on Alcoholism and the Alcoholic Psychoses as being the least satisfactory. As a
tract for distribution in a lodge of "Good Templars" it would serve admirably, but a writer falls short in scientific detachment who puts forward the following dogma: "The arguments that may be presented in an attempt to justify the uses of alcohol as a beverage are unworthy of serious consideration when properly contrasted with the medical and sociological reasons for abstinence." The chapter which deals with "Immigration and the Mixture of Races in Relation to the Mental Health of the Nation" is one of grave significance, and the problem concerns Canada just as urgently as it concerns the United States. The book is a most important one, and is suggestive of the wide extension that medicine has had in recent years in the fields which were previously considered closed to it.

**Books Received**

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

**Fibroids of the Uterus: Their Pathology, Diagnosis, and Treatment.** By Sir John Bland-Sutton. Illustrated; price, cloth, 4s. 6d. net. London: Science Reviews Limited, 1913.

**Acute Poliomyelitis (Heine-Medin's Disease).** By Dr. Ivan Wickman, Stockholm. Translated by Dr. J. Wm. J. A. M. Maloney, F.R.S. Ed. Illustrated; price, $3.00. New York: Journal of Nervous and Mental Disease Publishing Company, 1913.


Vaccine and Serum Therapy, including also a Study of Infections, Theories of Immunity, Specific Diagnosis and Chemotherapy. By Edwin Henry Schorer, B.S., M.D., Dr.P.H. Second revised edition; price, $3.00. St. Louis: C. V. Mosby Company, 1913.


XXII. Dr. Slop. At last some one has done justice to John Burton the man-midwife of York, so cruelly held up to ridicule by Sterne in "Tristram Shandy" as "Dr. Slop"; and it has been well done by Alban Doran in the current number (January, February), of the British Journal of Obstetrics and Gynaecology.

It is surprising that Dr. Ferriar, the distinguished Manchester physician, who exposed so pitilessly the plagiarisms of "Tristram Shandy" in the "Illustrations of Sterne," (1798), did not devote a chapter to his contemporary, Dr. Burton. The only man I know who speaks a good word for him is his townsman, James Atkinson, the author of the "Medical Bibliography, A and B," (1834), the most fascinating book on the subject ever written. In a characteristically anecdotal sketch, he comes out bravely in Burton's defence. Certainly he was a man of parts, not only a distinguished physician, but the author of a celebrated work, still an authority, on the antiquities of Yorkshire.

Burton was born in 1710, studied first at St. John's College, Cambridge, and afterwards at Leyden, under Boerhaave. He began practice in York, where he seems early to have acquired the nickname of "Dr. Slop." He practised as a physician and a midwife. As a strong Tory, Burton quarrelled with Archdeacon Sterne, uncle of Laurence, and in 1745, at the time of the Jacobean rising, was arrested. Sympathy with Prince Charlie cost him two years in prison, and a libellous portrait in "Tristram Shandy." Shandy Senior had read much, and was full of fads, one of which was the terrible danger to the delicate structure of the brain in the process of delivery. When his son and heir was ready to appear, the father would very much rather have had a Cæsarean section made so as to spare the child's brain. For safety Dr. Slop was sent for. (Burton had already written his best known medical work—"Essay towards a complete new system of Midwifery," 1751.) How Dr. Slop forgot his obstetrical bag, and how Obadiah, who was sent for it, knotted it so that Slop cut his thumb in solving the knot with a pen-knife, how he curses Obadiah with the famous curse of Bishop Ernulphus, may be laughed over in Sterne's memorable story.
Mr. Alban Doran, discussing the type of forceps used by Burton, brings out a number of new points, the most interesting of which is that the forceps at present preserved in York, which was in Burton’s possession, is not the forceps which he invented and which goes by his name. It is, however, the one which he actually used, and the one with which, we may suppose, he broke the bridge of Tristram’s nose, to the unutterable grief of Shandy Senior.

Doran gives an account of the quarrel between Burton and Smellie, the well-known obstetrical author, whom Burton convicted of a curious mistake. He thought the Latin name of a calcified foetus was an author. In “Tristram Shandy” (Bk. 2, Chap. xix.), Sterne refers to this mistake in which Smellie regards Lithopadus as author of a book “De Partu Difficili,” but in a foot-note a correction is made, as Sterne had seen the published letter of Burton to Smellie.

Burton’s “Midwifery” was popular and was translated into French. He wrote also a treatise on the “Non-Naturals” and minor essays. Of his work on the Antiquities of Yorkshire, only one volume appeared.

Through Burton’s influence and energy, the York Infirmary was founded, and this is perhaps his best memorial.

Doran’s estimate of him may be quoted: “Dr. John Burton was an able scientific obstetrician, and his ‘Essay’ shows that he was a man of practical experience. He was also a prominent citizen of York, the founder of its hospital, a noble philanthropic work, the benefits of which are continued to this day. Besides, this famous obstetrician was a highly distinguished antiquary, author of a standard work still much prized by librarians. Doctors and archæologists quoted above have alike testified to his merits. In days when the mad-midwife was looked down upon, Burton lived, a gentleman and a scholar.” And I may add he was a worthy student of the great Boerhaave, whose, “Life” (London, 1743), I believe is from his pen.

XXIII. JOHN SHAW BILLINGS. Among the men of our profession made distinguished by the American Civil War, Dr. Billings takes an unusual position. One hears sometimes that the career of the Army Surgeon offers small scope to a man of capability and energy, but to this the life of Dr. Billings is a strong contradiction. Without special advantages in early life, and without special opportunities during the war itself, he showed such capacity for work and for organization that when peace was declared he was one of
the fortunate ones to be selected to utilize the enormous materials 
that had accumulated during the war. Plenty of opportunities 
now came to him, and a great one in connection with the Surgeon-
General's Library. There have been great bibliographers in medi-
cine since the famous Conrad Gesner wrote his "Bibliotheca Universalis" in 1545, but no one hase ver undertaken and carried to com-
pletion so monumental a work of this character as the Index Cata-
logue.

Dr. Billings was born in 1839, and graduated from the Medical 
College of Ohio in 1860; after a session as demonstrator of anatomy 
he joined the Northern army and served throughout the Civil War, 
at the conclusion of which he was Medical Inspector of the army 
of the Potomac. He then became attached to the Surgeon-Gener-
ral's Office in Washington. In utilizing the enormous clinical and 
statistical material of the war, a serious difficulty arose owing to 
lack of the necessary works of reference. Surgeon-General Ham-
mond had already started a library in connexion with his office 
and this formed the beginning of the now famous collection. Dr. 
Billings was put in charge of the few hundred volumes and given 
a free hand. With a large annual appropriation, Europe was ran-
sacked for books and files of journals, and the library grew with 
extraordinary rapidity. In this bibliographical work, the late Dr. 
Windsor of Manchester acted as his friend and adviser. In the 
last report, October, 1912, the library is said to contain 178,741 
bound volumes and 317,740 pamphlets. The collection is extra-
ordinarily rich in old fifteenth century works, and particularly in 
the journal literature of the world. Owing to the liberality and 
freedom with which successive Surgeons-General have allowed its 
treasures to be utilized, the library has had an important influence 
upon the medical profession in the United States.

In 1876, as the library began to grow, the question of a printed 
catalogue was discussed, and a specimen fasciculus was distributed 
for purposes of criticism. The work progressed slowly, but in 1880 
Volume I of an Index Catalogue was printed, containing nearly a 
thousand pages. As subject and author catalogue it was immediate-
ly recognized that such a publication would be of the greatest help, 
but few at a time thought that a work on so vast a scale should be 
kept up. The literature of every subject was given with extraor-
dinary fullness, though representing only the material available in 
the library; thus in Volume I under Aneurysm there were some 70 
pages of references. Year by year the work progressed, and the 
first series of sixteen volumes was completed in 1895. Dr. Billings
had a happy faculty for choosing able assistants, and he early had the good fortune to associate with him Dr. Robert Fletcher, whose death was noticed in the Journal a couple of months ago. The first volume of the second series was published in 1896, and Volume XVII of Series II has just been issued. The remarkable growth of medical literature is well illustrated by comparing the references on Syphilis in Volume XIV of the first series and Volume XVII of the second; in the one there were 109 pages, and in the other 207.

It was always a marvel to Dr. Billings' friends how year by year he kept up the publication of the Index Catalogue, but he used laughingly to say that it was only a matter of organization. He read every page of the proofs, and the singular accuracy which characterizes the work is due to Dr. Fletcher and himself. As an outgrowth of this library work the Index Medicus of current literature was started by Dr. Billings, and continued, after his death, by Dr. Fletcher.

Early in his career Dr. Billings became interested in public health and in hospital organization, and was in charge of the preparation of the vital statistics for both the tenth and the eleventh census of the United States. Of the Johns Hopkins Hospital Trust Dr. Billings was appointed adviser; he drew up the plans for the hospital and was active in getting it organized. An important interview I had with him illustrates the man and his methods. Early in the spring of 1889 he came to my rooms in Walnut Street Philadelphia. We had heard a great deal about the Johns Hopkins Hospital, and, knowing that he was virtually in charge, it flashed across my mind that he had come in connexion with it. Without sitting down, he asked me abruptly, "Will you take charge of the Medical Department of the Johns Hopkins Hospital?" Without a moment's hesitation I answered "Yes." "See Welch about the details; we are to open very soon. I am very busy today; good morning"; and he was off, having been in my room not more than a couple of minutes. In the early days of the hospital, Dr. Billings' counsel was always sought, and the growth of the school was a matter of pride to him. For many years he was lecturer on the history of medicine. In 1891 he accepted the professorship of hygiene at the University of Pennsylvania, and became director of its new laboratory of hygiene. In 1896 he became director of the New York Public Library under the Astor, Lenox and Tilden foundations, and the crowning work of his life has been to consolidate these collections, and to see them housed in the magnificent building that was opened two years ago. The extent of
the library may be gathered from the fact that it has more than 2,000,000 volumes and upwards of fifty branch libraries, with a staff of 1,002 persons.

In the foundation of the Carnegie Institution in Washington, Dr. Billings took an active share, and for years he was chairman of its board.

Dr. Billings was the author of many works on vital and social statistics, on bibliography and on hygiene. Honorary degrees were conferred on him by Edinburgh, Oxford, Dublin, Munich, Harvard, Yale, and other universities. His two strong qualities were a capacity for work and for organization. He worked easily without fuss or effort, but incessantly. He had an equable temperament, and took the accidents and worries of life in a philosophic spirit. Of late years he was often in the hands of the surgeons, on several occasions for very serious operations, which he bore with his characteristic equanimity.

SASKATCHEWAN

ARRANGEMENTS have been made by the government whereby all the medical officers of health in the province—some two hundred in number—will attend the meeting of the Canadian Public Health Association, which will take place in Regina on September 18th 19th and 20th.

In connexion with the Dominion Waterways Act and the work that is being done by the Commission of Conservation to prevent the pollution of streams and consequent outbreaks of typhoid, it is of interest that during the last few years efficient filtration plants have been installed at Saskatoon and at Prince Albert, while Moose Jaw now obtains its water supply from springs at Caron and Regina from underground sources. At present there are eight sewage disposal plants in the province and the plans for ten additional ones have been submitted to the provincial bureau of public health. Thus it is hoped that in future years the prevalence of typhoid will be greatly diminished.
Res Judicatæ

QUESTION DRAWER.—ONTARIO HEALTH OFFICERS' ASSOCIATION

1. Should the sanitary inspector attend quarterly meeting, and if he does, should he get paid extra in a municipality only paying $15 to sanitary inspector?

Answer: There is no provision for sanitary inspector attending meetings. He should get sufficient salary. He is not obliged to attend meetings unless instructed by the board.

2. In case of disposal of sewage according to your regulations re septic tank, what course do you advise where there is not sufficient ground for system?

Answer: If there is not sufficient land area, the effluent from the septic tank should be otherwise provided for. If the soil is unsuitable (clay), twelve or eighteen inches of sand might be deposited over the clay and the subsoil pipes laid in this, as described in a pamphlet on Sewage Disposal issued by the provincial board.

3. What should be considered a reasonable minimum salary for an M.O.H. in villages, towns and townships?

Answer: In towns a reasonable salary might be based on the population, say $100 for the first thousand, and $25 or $50 for each additional thousand or portion thereof.

In townships it is difficult to say what is a reasonable salary. Some townships pay $100, some $5 or $10. As soon as the M.O.H. demonstrates to the public that he is worth it, he will usually obtain a better salary. It would be a good plan for the M.O.H. to call public meetings in the various schools in his municipality and give an address to the ratepayers, children, and teachers upon sanitary matters. If he desires it, the district officer of health will help him in any way possible.

4. Explain intentions of the Act in the case of payment for time in addition to hotel and railway fare, (a) Where the M.O.H. has a special amount as salary, (b) Where the M.O.H. has no salary specified.
5. What are the duties of district officers of health in relation to township local boards?

*Answer:* To advise and assist the M.O.H. in improving sanitary conditions of the municipality.

6. Can the municipal local board of health compel the trustees to give a report as to the sanitary condition of a school and if they do not, and our inspector is sent, can we compel the trustees to pay for the expense of sanitary inspection?

*Answer:* No, it is the duty of the M.O.H. to inspect the schools and disinfect at the expense of the municipality if necessary.

7. Can a man whose lot does not run 100 feet from his house in a small country village keep a pig?

*Answer:* No. See paragraph 20, Schedule B, Public Health Act.

8. What should be given as *immediate* cause of death in this case: A man had paralysis agitans for three years and epithelioma of the face for two years. He refused operation for the latter, and gradually becoming weaker, died at the age of seventy-nine. The disease which caused death was epithelioma, but what would you put down for immediate cause, and how could you determine its duration?

*Answer:* Cause of death—carcinoma of face, because it is of shorter duration. Immediate cause—none.

9. I visited a house suspected of having had scarlatina, and found a girl eight years old who, they said, had "grippe" six weeks previously. They stated positively that there had been no rash and no vomiting, but a sore throat lasting for two or three days. There was no sign of desquamation but a pronounced cervical adenitis, the glands on one side being as large as a hen's egg, and the child was very anaemic looking; but no physician had seen her. Should I have ordered the house and the child's person and clothing
to be disinfected? Should I have placarded the house till this was done?

Answer: If scarlet fever in neighborhood, this was probably a case of it. Best to have had house and child disinfected. No need to placard after six weeks.

10. I visited a house in which I found a young lady who had been sick three weeks previously. She had had a slight rash, sore throat and vomiting. There was slight desquamation on the face, especially the forehead at the roots of the hair. I placarded the house, but allowed the girl's father to continue gathering cream upon the mother agreeing to keep the girl isolated. Should I have done so? No physician had been called.

Answer: This is a case of scarlet fever. Should have stopped the father collecting cream. See regulation 4.

11. I have heard that these people are going out in spite of quarantine, but no complaint has been sent in, and they live ten miles from here. Should I go and investigate?

Answer: If the M.O.H. has quarantined, he should be satisfied that his orders are carried out.

12. Does a certificate have to be signed before the M.O.H. can collect his expenses from the municipality?

Answer: The members ticket will be sufficient voucher. If any difficulty, write the chief officer of health.

13. We are supplied with a very inefficient sanitary inspector who will not follow instructions, nor try to make himself efficient. The city council have been notified of the condition and asked to supply a competent inspector, which so far they have failed to do. What do you advise the local board of health to do to remedy the condition?

Answer: The local board of health may employ and pay any sanitary inspector they wish. Payment may be made under authority of Section 22 of the Public Health Act.

14. Description of suitable box for manure at stables, as to size, &c.

Answer: Size about 4' x 4' x 4' with screen top. As flies require fourteen days in which to breed and grow to full size, there will be no necessity for screening if the manure is removed and spread on the fields once a week.
15. We find that some householders put old tins and broken china, &c., in the privy vault, and this creates an objection on part of farmers to receive the night soil or give dumping ground. How may this be prevented?

*Answer:* Educate and prohibit by by-law. The greater portion of household garbage should be dried as well as possible and burned in the stove or furnace.

16. Appointment of M.O.H.

This officer should be appointed by by-law at a stated salary which the Act says must be a reasonable salary, Sections 37 to 39. He cannot be dismissed except for cause and with the approval of the provincial board.

By a decision of Mr. Justice Lennox, the M.O.H. of 1912, unless appointed by the council of 1913, does not retain office, but the properly appointed officer of 1913 continues in office subject to the terms of Section 37.

17. The cost of disinfection is borne by the local board of health (Section 29), except as covered by Section 62, 1 and 2.

The expenses of persons with communicable diseases are supplied in the first instance by the M.O.H. or local board of health, but the corporation of the municipality may recover from the person the amount spent in providing medicine, nurses and other assistance and necessaries for him, but not for the expenditure incurred in providing a separate house or in otherwise isolating him. Section 58, 1 and 2.

18. In a garnishee action now pending between the local board of health, plaintiff, and one Reid, a lumberman, defendant, where payment is demanded by the local board for cleaning up the nuisance perpetrated by Reid in his lumber camp, counsel for defendant claims that in such an action the local board of health *non esse:* that action must be taken by the municipality. Kindly rule.

*Answer:* Council must take action. Section 58, (1) and (2).

19. Is it advisable to compel all farmers in back-country townships to clean out wells annually, where the townships are not very wealthy and find it hard to carry out the Act?

*Answer:* Advise that all wells be cleaned out. Don’t attempt too arbitrary measures. Educate the public and they will soon see the benefit.
THE ONTARIO HEALTH OFFICERS' ASSOCIATION

The Ontario Health Officers' Association which met on the 29th and 30th day of May, under the presidency of Dr. Adam Wright, was a decided success. The meeting was held in the Parliament Buildings and the only fault to be found was in the fact that the place of meeting was rather small, as it was scarcely expected that the number in attendance, some three hundred, would be so great. This Association, the first meeting of which was held last year in connexion with the Canadian Public Health Association, is composed of members of the Provincial Board of Health, the district officers of health, and the medical officers of health of the various municipalities in the province. There are about 770 medical officers of health in Ontario, and by law they are required to attend this meeting. Their expenses are paid by the local municipalities.

Papers were presented under various headings such as: "The duties of the modern medical officer of health in cities and towns," by Drs. Hastings and Dickinson. "Communicable diseases," including smallpox and cross-infection in isolation hospitals. A feature of the meeting was the paper of Professor Whipple of Harvard, "The value of vital statistics in relation to public health." This was discussed by R. E. Mills of the City Health Department.

Dr. Hodgetts' paper on home hygiene provoked considerable discussion. He contended that medical inspection of schools, being part of public health work, should be placed under the health department and not under the Board of Education, as is the case in Toronto. He claimed that the present system caused duplication of work and a waste of public money. He also objected to nurses making a diagnosis of cases. The Association evidently agreed with his views, as the members passed a resolution to be sent to the Minister of Education, asking that medical inspection of schools be transferred to the control of the Provincial Board of Health.

The City of Toronto tendered a luncheon to the members on the first day of the meeting. Mayor Hocken presided and welcomed the visitors. Short addresses were given by Dr. Adam Wright, Dr. Hodgetts, Professor Whipple, Dr. Hastings, Dr. McCullough and Alderman Rowland, chairman of the City Board of Health.

In the afternoon session Dr. Adam Wright gave an address, and Controller McCarthy on behalf of the Mayor gave an address
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of welcome. Dr. J. A. Amyot gave a public address to a large audience in the evening on the subject of "The transmission of communicable disease." Motion pictures illustrating various phases of sanitary work were provided by the provincial board.

On the second day the question "Should the medical practitioner be paid for reporting communicable diseases, births and deaths?" started a lively discussion. The general opinion seemed to be that the medical man was entitled to some remuneration for this work, and a resolution was passed asking that the local municipalities be required to pay a fee of 50 cents for each birth, and death, and for each case of communicable disease reported.

Dr. Parfitt and Miss Eunice Dyke read papers on subjects relating to tuberculosis. There was a free discussion. The milk question was taken up by Drs. G. G. Nasmith and A. W. Macpherson. The "Question Drawer" was most interesting. Drs. Amyot and McCullough gave answers to a large number of practical questions.

After a luncheon in the Parliament Buildings short addresses were given by Reverend Dr. Cody and Hon. W. J. Hanna. The last session was taken up with papers on "Sanitary work amongst foreign population," by Dr. C. N. Laurie. "Disposal of waste and garbage," by Dr. Hall, and "Disposal of domestic sewage," by Dr. R. E. Wodehouse. All of these were freely discussed.

Dr. C. J. Hastings, medical officer of health for the City of Toronto, was elected president. The Association meets annually.

MANITOBA MEDICAL ASSOCIATION

The sixth annual meeting of the Manitoba Medical Association was held in Brandon on June 5th and 6th, about sixty doctors being in attendance.

The first session was devoted to the reading of the president's address and to a symposium on obstetrics. The president, Dr. J. S. Matheson, of Brandon, after welcoming the visitors to the Wheat City, referred to the value of meetings held elsewhere than in Winnipeg, in stimulating the attendance of the country doctors. He suggested that branches of the medical library should be established in various centres in the province. The following papers were then read:
“Management of normal pregnancy, labour, and puerperism,” by Dr. A. W. Moody.

“Diagnosis of abnormal presentations and positions,” by Dr. O. Bjornson.

“Treatment of abnormal presentations and positions,” by Dr. Ross Mitchell.

“The application of forceps,” by Dr. C. C. Field, paper read by Dr. Bjornson.

“Eclampsia,” by Dr. H. W. Wadge.

A vigorous discussion followed, in which Drs. R. P. Crookshank, Wright, M. S. Fraser, P. H. Miller and the readers of the papers took part.

At the close of this session the visiting members and their wives were entertained by a thirty mile auto ride through the wheat fields of the district. In the evening a banquet was tendered to the visiting members at the Prince Edward Hotel. Mayor Fleming welcomed the members of the association and Dr. Halpenny responded.

Friday morning was devoted to an exhibition of clinical cases by the profession of Brandon and vicinity. The following cases were shown: Aleopecia areata, by Dr. Beer; splenic anæmia, by Dr. Bigelow; pernicious anæmia, by Dr. Carter; double cataract, by Dr. Latimer; cases for diagnosis, by Dr. Beer; Dr. Ferguson, of Souris, and Dr. Bigelow; early phthisis, by Dr. D. A. Stewart, superintendent of Ninette Sanatorium; group of kidney and ureteral cases with radiographs, by Dr. Bigelow.

At the conclusion of the clinic automobiles were in waiting to convey the party to the Asylum for the Insane. This magnificent new building, recently erected to replace the former structure destroyed by fire, was shown to the visitors by Dr. McFadden, the superintendent, after which lunch was served. Following this a short business session was held. It was decided that the next place of meeting should be Winnipeg, the date of the meeting to be fixed later. The election of officers resulted as follows: president, Dr. J. Halpenny, Winnipeg; vice-presidents, Dr. O. Bjornson, Winnipeg, and Dr. M. S. Fraser, Brandon; honorary secretary, Dr. Ross Mitchell, Winnipeg; honorary treasurer, Dr. J. A. Gunn, Winnipeg; executive, Drs. D. G. Ross, Selkirk; R. P. Crookshank, Rapid City; P. H. Miller, Morden; F. C. St. John, Virden; W. J. Harrington, Dauphin.

Dr. C. Eugene Riggs, of St. Paul, Minn., then gave an excellent clinic on syphilis of the nervous system, illustrated by five cases presented by Dr. H. E. Hicks, the assistant superintendent of the
asylum. Dr. Riggs emphasized the essentially specific nature of tabes dorsalis and general paresis and the value of salvarsan or neosalvarsan in such cases.

The visiting members at the close expressed themselves as delighted with the hospitality shown by their Brandon brethren. The largely clinical nature of the meeting made it a particularly interesting one and the Brandon convention may be considered one of the most successful that has yet been held.

Obituary

DR. HUTCHINSON J. NASH, of Forest, Ontario, died May 17th, in the sixty-eighth year of his age. Dr. Nash was medical officer of health for Forest and was the oldest physician in Lambton.

DR. JUSTUS SAMUEL WRIGHT WILLIAMS, of Oakville, Ontario, died June 4th, in the seventy-third year of his age. Dr. Williams had practised in Oakville for many years. He leaves a widow.

DR. JAMES P. McEVOY died on June 10th at Stamford, Connecticut. Dr. McEvoys was a graduate of Toronto University. The greater part of his professional career was spent in New York, where he practised as a throat and nose specialist.

DR. THOMAS H. STARK, of Toronto, died from heart failure on June 9th, in the fifty-eighth year of his age. He was born in the province of Quebec and graduated from Trinity Medical College. In 1881, he was appointed house surgeon to the Toronto General Hospital, and later he joined the staff of the Grace and of the Western Hospitals. He had a large general practice and was well known. He leaves a widow, a son and two daughters.

DR. J. D. A. MACDONALD, of Montreal, died at the Montreal General Hospital, on Saturday, May 31st, after an illness of four months. Dr. MacDonald was fifty-seven years of age; he graduated from McGill in 1873. He was a member of the Unitarian Church. The greater part of his professional work was done
amongst the poor, and he was much beloved by his patients for his sympathy and unselfish generosity. He leaves a widow and two sons.

Dr. Nathaniel Henry Alcock died at Montreal on June 12th. For the past two years, Dr. Alcock had held the position of Joseph Morley Drake professor of physiology at McGill University, in succession to Professor Wesley Mills. He was educated at Dublin University where he obtained his M.D. degree, and afterwards studied at Marburg and at London; he was senior moderator and gold medallist in natural science of Trinity College, Dublin, in 1896. In the same year, he was appointed demonstrator of anatomy at Victoria University, Manchester; in 1897 he was appointed assistant professor of medicine at Trinity College, Dublin; and in 1903 he became demonstrator of physiology in the University of London, and in 1904 lecturer in physiology at St. Mary’s Hospital, London, of which institution he was also vice-dean. In 1911 he came to McGill University. He leaves a wife and four children.

News

Maritime Provinces

Certain changes have been made in the plans for the hospital which is to be built at Wolfville, and the estimated cost has been reduced to $450,000. It is expected that the building will be commenced very shortly.

Some recent investigations into the prevalence of bovine tuberculosis in Nova Scotia show that, throughout the province, some fifteen or twenty per cent. of cattle are affected; and, at the government experimental farm at Truro, seventy-five out of eighty-three head of cattle were found to be suffering from tuberculosis.

During the year ending June 1st, 1913, about seven hundred patients were treated in the Moncton Hospital, and about five hundred received attention in the outdoor department. The hospital
now can accommodate thirty-eight patients; it contains two public wards of eleven beds each, and sixteen private rooms.

Three hundred and twenty-three patients were admitted to the Prince Edward Island Hospital at Charlottetown during the past year, and 202 operations were performed. The endowment fund now amounts to $25,589.46, a legacy of $5,000 having been bequeathed for this purpose by the late Rev. Dr. Brecken. The financial statement for the year shows a balance of $641.46 in favour of the hospital.

It is proposed to enlarge the Fredericton Hospital. No definite plan has been decided upon as yet but the matter is under consideration.

ONTARIO

During the month of May, 529 cases of measles were reported in Toronto. There were also 56 cases of diphtheria, 93 of scarlet fever, 23 of typhoid, 8 of smallpox, 43 of tuberculosis, 48 of chicken-pox, and 7 of whooping cough.

It has been decided to sell the isolation hospital at Dundas for $4,000, and to build instead of it two cottages. The hospital has never been completed.

May 31st was chosen as a tag-day for the Berlin-Waterloo Hospital; the money collected amounted to $2,462.08.

Cases of smallpox have been reported from St. Thomas, Meaford, and Wallace township.

There was a high percentage of deaths from diphtheria in Toronto during the month of May. Of thirty-six cases admitted to hospital, six died.

At a recent meeting of the Toronto Board of Health, it was decided to repair the isolation hospital at Riverdale Park at a cost of from twenty-five to thirty thousand dollars.

Dr. T. A. Lomer will enter upon his duties as medical officer of health for Ottawa on July 1st.
Since the Ingersoll Hospital was opened three years ago, four hundred and sixty-one patients have been treated there, and thirty deaths have occurred.

The plans are being prepared for additions which are to be made to the Wingham Hospital. They include a maternity ward, isolation rooms, and a new operating room.

The Canadian Society of Superintendents of Training Schools for Nurses held its seventh annual meeting in Berlin, May 19th and 22nd.

The sixty-ninth annual meeting of the American Medico-Psychological Association was held at Niagara Falls from June 10th to 13th. The meetings took place at the Clifton Hotel under the presidency of Dr. James T. Searcy, of Tuscaloosa, Alabama. A feature of the meeting which was of particular interest was the display of the work accomplished by patients receiving industrial training in various institutions in Canada and the United States.

There has been considerable discussion as to the establishment of a hospital in the eastern part of Toronto, now that the General Hospital has been removed to College Street. It is possible that a hospital, which when completed will contain four hundred beds, will be built at a cost of about $400,000. At first, however, it is proposed to provide for one hundred beds only and the hospital, ultimately, will comprise four such units.

A successful campaign was conducted by the Cobourg Hospital board in May, with the result that $17,000 was collected in one day towards the new hospital which is to be commenced at once.

The Eastern Hospital at Brockville is to be enlarged. The extension will contain the executive offices and the admission building of the hospital and will cost about $100,000.

A new smallpox hospital is to be built at St. Thomas.

An effort is being made to collect $25,000 with which to build a general hospital at Leamington. A suitable site has been offered
by a resident of the town and, if the necessary funds can be collected, the intention is to build a hospital which shall provide accommodation for twenty-five patients. At present there is no hospital between Windsor and Chatham.

At a meeting which took place May 30th, it was decided that a hospital should be established in the western part of Toronto. It is to be called the "Howard Park Hospital," and it is proposed to adopt the unit plan of construction and to enlarge the hospital as the need for extension arises. It will be supported by the city, and it is possible that, for this purpose, a by-law for $100,000 may be submitted to the ratepayers at the beginning of next year. It is probable that, when the hospital is established, an arrangement will be made whereby physicians will be permitted to treat their own patients in the hospital.

QUEBEC

During the week ending June 7th, there were reported in Montreal 9 cases of diphtheria with one death, 26 cases of scarlet fever with two deaths, 4 cases of typhoid with three deaths, 31 cases of measles, 28 cases of tuberculosis with fifteen deaths, and one fatal case of grippe. The number of deaths from all causes was 169, and of these 73 were of children under five years of age.

The fourth annual meeting of the Lake Edward Sanatorium was held on Monday, April 3rd, 1913. Since the hospital was founded in October, 1909, 114 patients have been admitted, 98 of whom have been discharged. Information concerning the health of these patients since they left the sanatorium is being collected and will be published in a later report. During the year ending March 1st, 1913, 53 patients were admitted and 37 were discharged, 6 of whom on admission were classified as "advanced" cases.

The following is the list of honours and of those who have been awarded degrees in medicine by McGill University:

Holmes’ gold medal for highest aggregate in all subjects forming the medical curriculum: R. H. Malone, Antigua, B.W.I.

Final prize for highest aggregate in the fifth year subjects: W. C. Gowdey, Bridgetown, Barbados, B.W.I.

Wood gold medal for best examination in all the clinical branches: W. T. Purdy, Amherst, N.S.
McGill Medical Society senior prize: R. H. Malone, Antigua, B.W.I.


The open air classes for tubercular children, which have been carried on during the winter at the King Edward Institute, at Montreal, have been so successful that a day camp has been opened, which accommodates about fifty children, where they can be kept out of doors all through the summer. The children are under the care of a physician, and records are kept of the progress of each child. The estimated cost of the camp, if continued for three months as is the intention, is about $1,500.

The report for 1912 of the Montreal Children's Memorial Hospital shows that the past year has been a successful one. 241 patients received treatment; 48 were discharged "cured," 105 "improved," and 5 "not improved"; 15 were not treated and 16 died, while 52 are still receiving treatment. The number of hospital days was 17,553, and the average daily cost of treatment for each patient was $1.25. It is hoped next spring to commence a new building for the school for cripples. An outdoor department is needed and the services of a district nurse would be very helpful. The present endowment fund only amounts to one thousand dollars and among all the worthy institutions in need of financial
assistance, there is none perhaps more deserving than this hospital.

**Dr. L. A. Chabot** has been appointed medical officer of health for the city of Verdun.

**Dr. J. Alex. Hutchison**, of Montreal, was elected a Fellow of the American Surgical Association, at the recent meeting of the association in Washington.

The following is the list of those who have graduated in medicine from Laval University, Quebec: J. C. Bedard, W. A. W. A. Blagdon, J. A. Belanger, A. B. Cote, M. Dolbec, F. R. S. Gervais, Rod Hebert, A. Lapointe, P. H. Lafreniere, Eug. R. Rioux, F. X. Trepanier, Rob. Veilleux, Chs. Vezina, J. B. Trudel and Villeneuve.

A Chair of Phthisiotherapy has been established at Laval University, Montreal. For this purpose the sum of $10,000 was given by Mr. Auguste Richard, president of the Fashion Craft Manufacturers. Dr. J. E. Dubé has been appointed to the professorship. For the past fifteen years, Dr. Dubé has been particularly interested in the prevention of tuberculosis and has worked unremittingly in this direction. He was the founder of the Bruchesi Institute at Montreal and of the preventorium at Beloeil.

During the month of May seven patients were admitted, and three were readmitted to the Protestant Hospital for the Insane at Montreal. Four patients were discharged and three deaths occurred.

During April 8,436 visits were made by the Victorian Order of Nurses in Montreal; the cases attended numbered 1,095.

An effort is being made in Montreal to establish a floating hospital for poor children. It probably will be impossible this year to obtain a cruising vessel but it is hoped to procure a houseboat which could be moored at some suitable place in the river.

**The Mount Sinai Sanatorium** at Ste. Agathe was opened officially on June 29th. The erection of an administration build-
ing is under consideration, so that the whole of the present building may be devoted to hospital work. Up to May 30th, sixty-five patients had been admitted to the sanatorium and thirty-five of these had been discharged and were able to resume their work.

MANITOBA

The medical inspection department of the public schools at Winnipeg is preparing an exhibit to show what is being done to preserve the health of the school children. The exhibit consists in large part of photographs, which will be shown at the next Winnipeg and Brandon Industrial Exhibition.

It is proposed to build a permanent residence for the medical superintendent of the civic hospitals in Riverview, Winnipeg. The cost is estimated at ten thousand dollars.

SASKATCHEWAN

At the next annual elections a by-law will be submitted to the ratepayers of Rosthern, with a view to establishing a hospital there.

ALBERTA

At a meeting of the Calgary joint hospital committee which took place April 25th, it was resolved that, in view of the urgent demand for increased hospital accommodation, a portion—about two acres—of the hospital property should be transferred to the city and that additional buildings should be erected on this property with money to be granted by by-law; and that, in return, the city should grant the sum of $20,000 to the hospital board to pay off the cost of past and present improvements to the old building.

It is expected that the hospital which is being built at Strathcona will be completed next November.

Several cases of smallpox have occurred in Calgary. In one instance, the fact that a child was suffering from the disease was concealed by the parents for several days and no doctor called in, because they feared that the father's business would suffer.

It is the intention to build a new isolation hospital at Medicine Hat. It has been suggested that three separate cottage hospitals
should be built, one for scarlet fever, one for diphtheria, and one for smallpox. The site has not yet been chosen.

BRITISH COLUMBIA

At a meeting of the board of directors of the Vancouver General Hospital, which took place May 28th, it was resolved that the executive head of the hospital should be the medical superintendent. It was considered desirable that the position should be held by a medical man rather than by a layman and a previous resolution to the effect that a layman should be appointed was rescinded. It was decided that the applications for the post should be considered and reported upon at the next meeting. During the month, 789 patients were treated in the hospital and the number of hospital days was nine thousand, eight hundred and forty-four.

Fifty-two patients were admitted to the Kootenay Lake General Hospital during April. These were 847 days of treatment and the average daily cost per patient was $1.73. It has been decided to increase the charge made for private rooms to $3.00 a day. The charge in the general wards is $12 a week.

A general hospital has been established at Stewart.

The second annual meeting of the Convalescent Home and Emergency Hospital at Duncan was held May 7th. Although the hospital has only been established for two years, it is now necessary to enlarge it, and a building is to be added which will be devoted entirely to maternity cases. It will have a frontage of ninety-one feet and will cost about $6,500, of which $4,000 has been granted by the provincial government. It is hoped that the building will be completed in September. During the year 158 patients were treated in the hospital, the number of hospital days being 2,966. The average daily cost for each patient was $2.48 and the per capita grant received from the government amounted to seventy-seven cents.

At the end of April there were in the provincial mental hospital 580 male and 222 female patients.

The plans for the new Kootenay Lake General Hospital at Nelson have been approved by the provincial government and the construction of the building is to be commenced at once.
The question of enlarging the general public hospital at St. Johns, Newfoundland, has been under discussion for some time. However, nothing is to be done just now, but a committee has been authorized to secure additional land with a view to the erection of new buildings thereon. The present building is old and it is considered wiser not to enlarge it but rather to wait until new buildings can be built.

An outbreak of diphtheria is reported from Norris' Arm, Newfoundland.

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**Canadian Literature**

**Original Contributions**

*The University of Toronto Medical Bulletin, April, 1913:*

- A case of traumatic amnesia
- The result of treatment of syphilis as shown by the Wassermann reaction
- The systematic diagnosis of progressive atrophy of muscles with the report of an unusual case of disseminated sclerosis
- Report of a case of specific cerebro-spinal meningitis successfully treated by intra-spinal injections of antimeningocoeic serum
- Notes on a case of acute primary pyelitis with remarks upon acute bacterial invasion of the kidneys
- The diuretic action of theobromine and of theophylline
- Nervous hypochylia with recovery—cardiac arrhythmia due to the administration of digitalis

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G. F. Boyer
Gordon Bates and G. S. Strathy
G. W. Holland.
W. B. Thistle
J. T. Fortheringham.
R. D. Rudolf.
G. Chambers.
Reflex irregular contraction of the stomach simulating hour-glass contraction—rupture of duodenum with complete duodenal fistula: recovery.

G. Bingham.

Tendon fixation, a new operation for the prevention of paralytic deformities.

W. E. Gallie.

Fracture of the wrist: analysis of the x-ray plates of a series of ninety-four cases.

E. Stanley Ryerson.

A case of hæmatocolpos, with reference to the theories of causation, and the arsenic content of the fluid.

A. C. Hendrick and H. S. Raper.

Caesarean section repeated on the same patient.

K. C. McIlwraith.

A case of abscess of the temporo sphenoidal lobe following acute otitis media.

G. Royce.

Upon the reliability of the ordinary signs of acute cystitis.

G. E. Wilson.

Report of a case of fracture of the pelvis with rupture of the urethra.

E. Stanley Ryerson.

The Canadian Practitioner and Review, May, 1913:

Radium in dermatology.

W. H. B. Aikens and F. C. Harrison.

Individualization in the treatment of pulmonary tuberculosis.

C. D. Parfitt.

Mental diseases and their early recognition.

A. T. Hobbs.

The office treatment of diseases of the rectum.

C. F. Durand.

The Canadian Journal of Medicine and Surgery, June, 1913:

Sir William Tennant Gairdner, the ideal physician.

J. Ferguson.

The early diagnosis of cancer of the uterus with report of an hysterectomy in an early case.

A. C. Hendrick.
Dominion Medical Monthly, June, 1913:

Some aspects of renal surgery . . . . R. Guiteras.
Dr. Lord’s undertaking . . . . A. C. E.

L’Union Médicale du Canada, May, 1913:

Le traitement de la fièvre typhoïde par le phylacogène ou sérum-vaccin de Schafer . . . . E. P. Benoit.

Le Journal Chirurgical de l’Hôtel-Dieu, April, 1913:

Les fractures de la rotule; pourquoi, quand, et comment faut-il opérer . E. Saint-Jacque.

Le Bulletin Médical de Québec, May, 1913:

Une mère éclamptique ou néphritique, peut-elle nourrir sans danger pour son nourrisson? . . . . . . A. Jobin.
L’hôpital des tuberculeux . . . . A. Rousseau.
A propos des ulcérations aigues de l’estomac . . . . . . J. P. Frémont.

The Canadian Practitioner and Review, June, 1913:

The physiology and pathology of the internal secretory organs . . . . J. Ferguson.
Abscess beneath the deep cervical fascia . . . . N. A. Powell
Tuberculosis of the kidney . . . . R. Guiteras.
The following officers have been elected by the Swift Current Medical Association: honorary member, Dr. T. G. Roddick, Montreal; honorary president, Dr. Low, Regina; president, Dr. Graham; first vice-president, Dr. Moore, Webb; second vice-president, Dr. Denovan, Morse; secretary-treasurer, Dr. Hughes; executive committee, Dr. McArthur, Dr. Kelly, and Dr. Cairns.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The twelfth regular meeting of the society was held Friday, March 28th, 1913, Dr. D. J. Evans, president, in the chair.

LIVING CASE: Tuberculous disease of the appendix, by Dr. J. Alex. Hutchison.

DISCUSSION. Dr. W. G. Reilly: I would like to ask if there was anything in the bowels showing evidence of tuberculosis there, or in the mesenteric glands—enlarged glands, etc.

Dr. Hutchison: There was no evidence whatever, the disease was practically limited to the lesion in the cæcum itself; no suspicious glands anywhere.

Dr. Wilson: It is a pity that in view of the rarity of the condition and the desirability of finding out if there were lesions elsewhere, that a picture could not have been procured of the man’s chest. This would show if there were any healed tubercular foci in the lungs.

PATHOLOGICAL SPECIMENS: Exhibited by Dr. O. C. Gruner.

A series of specimens of uteri showing different forms of endometritis; two are cases of tubercle and a third a septic endometritis. They are of interest owing to the typical form of the lesions and because we have had several cases of the same kind within a few months.

The first was obtained from a girl aged eighteen who was suffering chiefly from tuberculous peritonitis. The abdomen pre-
sent a curious appearance on opening it, owing to the conversion of the omentum into an opaque glassy membrane through which one could not see the intestines. On lifting up the omentum, the intestines were found bound down and simply covered with miliary tubercles. The lungs were full of large tuberculous nodules bearing the clover-leaf form characteristic of tubercular broncho-pneumonia. The genitalia were all matted together and on dissection the following condition was found: though each tube contained pus of an opaque cheesy character, they were not so extensively diseased as the uterus. The uterus shows a granular surface which was quite yellow when fresh. Microscopically, it shows the characteristic caseous tuberculous masses. The tubes also show caseous tubercles under the microscope. They are not much dilated; the mucous membrane has become thickened.

The other specimen is from a woman of about twenty-six. In this case the condition was supposed to be appendicitis. There was a long history of pain in the uterine region and a mass was felt. The appendix was removed: it was tuberculous, the tubercles being extra-muscular. The wound never healed and a fistula was established which occasionally discharged faeces and pus. It turned out that the caecum was perforated, the aperture being large enough to admit the little finger. This would get blocked up by solid faeces which became dislodged at intervals and then allowed fluid faeces to escape. The change in the right tube consists in an increase in the size of the fimbriae which appear as finger-like masses of tissue enveloping a solid inflammatory focus. On the left side the tube is very tortuous and not much dilated, but the mucous membrane is greatly thickened. The uterus showed commencing tuberculous endometritis; tuberculous ulcers were also found in the intestine.

The third specimen exemplifies the difference between the preceding conditions and a septic endometritis. The lumen of the mucous membrane here is replaced by a false membrane which has the same colour when fresh as the tuberculous membrane, the difference being that the small nodules are not present, and that there is fissuring of the surface and no tubercles. When fresh the walls were flabby in this septic case, while the walls of the tubercular specimens were hard.


Discussion: In the dissecting room in ten years a certain number of cardiac defects have been found of which one of the most common is the ordinary patent foramen ovale. Most of these oc-
curred in adults and in none of the cases were there other marked defects coexisting with them. In one case the ordinary lead pencil could be readily passed through the wall. Hearts such as the one here shown, with such defects, have not been seen in the dissecting room. In the series in the anatomical museum the main variations are those in which there are defects in the position of the vessels of the heart. The patent foramen ovale is not a very uncommon defect found in the dissecting room. Dr. Maude E. Abbott in connexion with this case exhibited her chart on congenital cardiac disease showing statistics of 400 cases.

Dr. A. T. Bazin: In this specimen mention is made of two auricles and two ventricles with an additional chamber at the top of the right ventricle. I would like an explanation of the embryological development of that third chamber on the right side.

Dr. D. J. Evans: I had a rather unusual experience some years ago with a "blue" mother who gave birth to a "blue" baby. She had the usual experience of recurrent attacks of cyanosis, was always more or less blue in colour, used to get almost black at times, and yet she had reached mature life and had no trouble during pregnancy or labour and neither in mother or child could I detect any evident cardiac murmur; there was some enlargement of the heart in the mother but nothing abnormal was noted on examination of the heart in the child at all.

Dr. A. R. Pennoyer: I remember a case of patent foramen ovale some five years ago. An eminent European surgeon was operating on the thyroid and during the course of the operation he opened a large vein; there was immediately a bubbling sound of the entrance of air into the vein and at once the patient became hemiplegic, and died in a few hours. It was found that the air had gone through the patent foramen ovale to the left side of the heart and into the general circulation producing a cerebral air embolism.

Dr. Maude E. Abbott: We have a specimen in the museum of the two-chambered heart of a shark which shows very well this conus chamber, and which may be taken to represent the stage of development of the heart at which growth has been arrested in this specimen. Before the development of the septa, the conus of the common ventricle is a separate muscular chamber. In the shark it is a muscular chamber with a distinct constriction below which disappears later. Greil, in Germany, and others, have studied this question of the conus as a separate chamber and working on the basis of comparative anatomy found the stage at which it disappears in the human heart. In this heart there is a special point
of interest which may be regarded either as a compensatory process or as a persistence of a stage of arrested development. Just below the conus we see a distinct cusp into which you can insert a match. Now this might possibly be an embryonic cusp showing an arrest of development, or what is much more likely a compensatory cusp such as may develop below an insufficient valve. Thus in aortic insufficiency (as figured by Aschoff) you see little pouches which develop to prevent regurgitation of the blood, and this small cusp on the wall of the conus looks like such a compensatory cusp rather than a persistence of one of the embryonic cusps.

**PAPER:** The paper of the evening was read by Dr. A. T. Bazin on "Tuberculous appendicitis."

**DISCUSSION:** Dr. F. R. England: I would like to ask Dr. Bazin if he has any opinion as to the source of infection in these cases. Two years ago I had a case which we considered at the time a tuberculous appendix. Certainly there were tuberculous mesenteric glands along the ascending colon nearly up to the hepatic flexure; several of these glands were caseous; iodoform gauze for drainage was employed and pus escaped for some time. It was thought at the time, owing to the temperature, that the patient had a widespread, probably miliary tuberculosis, nevertheless the temperature subsided and she made a very excellent recovery.

Dr. Howard Pirie: I am surprised to find, from the statistics given by Dr. Bazin, how rare it is to get tuberculosis of the appendix. As far as I remember he mentioned 2,000 cases of post mortem examinations and only 17 cases of tuberculosis of the appendix, and in the General Hospital only three. One explanation is that those cases which get tuberculosis in the appendix are cases of constipation in the appendix. By means of the bismuth meal we occasionally come across this; in the majority of cases the appendix does not fill up after the meal, in other cases it remains full for two or three days, and I have seen bismuth remain in the appendix as long as forty-three days. If the patient had swallowed tuberculous matter and it had remained there for that length of time, the result might have been tuberculosis. There are cases in which, after a bismuth meal, the appendix normally fills up, so that it can be demonstrated by x-rays.

Dr. A. T. Bazin: In reply to Dr. England I might say that I mentioned that, in the hyperplastic type, the lesions are mainly in the submucosa; they may be in the mucosa but not in such large numbers. In the ulcerative type the lesions are chiefly in the mucosa. The bacilli, being swallowed with the sputum, attack the lymphoid
follicles and these break down. The appendix being rich in lymphoid tissue, you would expect to find considerable tuberculous infection there. As for the gauze I would say that it was not used as a drain but simply as a packing to keep the cæcum back into the abdomen. Dr. Pirie's remarks in regard to bismuth in x-rays of the appendix are very interesting. I should judge that an appendix which rapidly filled with bismuth would show that the valve between the appendix and the cæcum was not patent and would not be likely to develop a stenosis. Van Swalenberg in the Annals of Surgery some years ago dealt with the etiology of appendicitis as being entirely due to intra-appendical pressure, and considered that appendicitis would occur only when there was a stenosis of some part of the lumen of the appendix and the fluid contents developed pressure. There is filling up of the appendix in any case of acute appendicitis and we know that relief of symptoms is very often due to this pressure being removed, either by escape of the contained fluid into the cæcum with recovery from that attack or by rupture of the appendix with but temporary amelioration of pain and the subsequent development of peritoneal symptoms.

Case Report with Specimens: Clinical points in some unusual surgical cases, by Dr. F. R. England.

1. Young man with sarcoma of the femur. Nothing in family or personal history bearing on disease. Suffered pain for six months in left leg beginning just above the knee. For this pain the patient had received treatment for rheumatism—salicylates, etc., and finally a swelling appeared about the upper third of the femur. A fusiform swelling could be made out just below the lesser trochanter. Von Pirquet was negative. The clinical diagnosis was that of sarcoma. An X-ray was taken. Amputation at the hip-joint; convalescence satisfactory.

2. Fracture dislocation of the cervical vertebrae. Young Pole, powerfully built, about twenty-two, employed in rolling mills. A belt driving some machinery broke, and swung around hitting him on the head, neck and shoulder. Laminectomy was performed twelve hours after admission; death twenty-four hours after operation, respiration failing from an ascending paralysis. One can hardly hope for any satisfactory results from laminectomy in the cervical region for recent fracture dislocation.

3. Solitary or so-called horse-shoe kidney and renal calculus. The young man had all the symptoms of stone in the kidney, blood in the urine and severe reflected pain. At operation on attempting to detach the fatty capsule I found the kidney healthy looking
but lower than normal. Suddenly a pretty sharp haemorrhage occurred, the bleeding was difficult to control and I soon realised that an anomalous artery had been severed. After stopping the bleeding I continued to detach the capsule and found a much enlarged kidney with a large calculus in the pelvis.

4. Renal calculus. The patient was a French Canadian, aged fifty-eight, weighing 220 lbs. For fifteen years he had suffered pain over the left loin and had much rheumatic treatment. A peculiar thing in the symptoms was that he was able to incite pain by certain body movements. The x-ray picture shows the shadow of this stone very clearly. Nephrolithotomy was performed with good recovery.

In the case of the fractured vertebrae, it is generally considered that if the cord is destroyed the reflexes are abolished; but if they are present, there may be only pressure on the cord. It is supposed in these cases that at the moment of impact the cord is crushed between the body of the lower vertebrae and the lamina of the upper vertebrae. About two-thirds of the cases recoil and the pressure is relieved without laminectomy; in these cases the damage done to the cord has been inflicted at the moment of impact, the cord is crushed and the pressure at once relieved.
THE CLINICAL SIGNIFICANCE OF THE AUTONOMIC NERVES SUPPLYING THE VISCERA, AND THEIR RELATIONS TO THE GLANDS OF INTERNAL SECRETION

By Lewellys F. Barker, M.D.

Professor of Medicine, Johns Hopkins University; and Physician-in-Chief, Johns Hopkins Hospital

When we consider how carefully the cerebrospinal nerves have been studied, and how important each small twig is for the clinical pathology of disturbances of sensation on the one hand or of motility on the other, and then turn to the paucity of studies bearing upon the nerves which supply the viscera, we cannot help being impressed with the contrast. The lack of knowledge in the latter domain is all the more striking when we recall that it is precisely with the viscera that we, as workers in internal medicine, are predominantly occupied; except for scattered and non-systematic observations, the field of visceral neurology has, clinically, until recently, remained practically unexplored. The nerves going to the internal organs have, however, during the past two decades, strongly attracted the activities of anatomists, physiologists and pharmacologists, and their researches have thrown a brilliant light into regions hitherto obscure. They have revealed a series of mechanisms which, though of considerable complexity, are proving to be of the greatest importance, not only for the functions of the viscera themselves, but also for those of the body as a whole. It turns out that the nerves supplying the viscera stand in a position intermediate between the cerebrospinal nervous sys-
tem and the internal organs; both the central nervous functions
and the visceral functions are to a large extent dependent upon the
mode of functioning of the visceral nerves. The state of tonus
in the visceral nerves is in turn apparently dependent first, upon
nerve impulses transmitted to them from the brain and spinal
cord and secondly, upon the action of chemical substances, in-
cluding the so-called hormones, produced in various organs in the
body and especially in the glands of internal secretion. In the
third place, the amounts of certain ions (Ca, Mg, Na, etc.) present
in the medium through which the nerve-terminals act upon the
end-organ (smooth muscle; secreting gland) seem profoundly to
influence the activities of the system concerned.

Architecture of the Visceral Nervous system

It has been common to designate as the "animal," "somatic"
or "cerebrospinal" nervous system the nerve paths related to the
sense organs on the one hand and to the voluntary muscles on the
other, and as the "sympathetic," "vegetative" or "visceral"
nervous system the nerve paths which innervate the more auto-
matic internal organs, especially all those organs containing in-
voluntary muscle or secreting glands, or both. Thus the smooth
muscle of the bronchi, of the stomach and intestine, of the blood
vessels, of the skin, of the genital apparatus and of the eye, are all
so innervated, as are the secreting glands of the whole body—sweat
glands, salivary glands, lacrimal glands, mucous glands, gastric
and intestinal glands, liver, pancreas, kidneys, and the glands
of internal secretion.

The centripetal paths in the domain of the sympathetic ner-
vous system are as yet but poorly understood, but the centrifugal
paths, thanks to the researches of the histologists on the one hand,
and the studies of physiologists like Gaskell, Langley, and
their co-workers on the other, are now fairly well known to us.
The centrifugal paths of the sympathetic system differ from those
of the cerebrospinal system fundamentally in one point. In the
cerebrospinal system the spinal cord is connected with a voluntary
muscle fibre by means of a single neurone, the axis cylinder of which
goes all the way from the anterior horn to the muscle without
interruption. In the sympathetic system at least two neurones
make up the path from the cerebrospinal axis to the smooth muscle
or the secreting gland. Take, for example, the neurones con-
necting the spinal cord with a viscus. Of these two neurones, the
first has a cell-body in the spinal cord, and its medullated axone (so-called preganglionic fibre) runs through the anterior root of a spinal nerve and through the white ramus communicans into the sympathetic system, there to pursue a course of variable length, sometimes passing through several sympathetic ganglia, in order finally to terminate in an end-arborization (or synapse) upon the cell-body of the second neurone of the path, situated in some sympathetic ganglion. The axis cylinder of this second neurone is non-medullated and is known as a post-ganglionic fibre; it extends from the ganglion to the smooth muscle fibres, or to the secreting gland, which it innervates. Between the nerve terminal and the muscle or gland there seems to be an intervening substance (myoneural, or adenoneural); and in this medium the ions of calcium, sodium, etc., seem to exercise important functions.

It has long been known that many of the viscera receive nerve-impulses not only from the sympathetic system, but also through other nerve paths. Thus, though the heart receives impulses through the sympathetic which increase the rate of its beat, it also receives impulses through the N. vagus by which the rate of its beat is decreased. Similarly, the smooth-muscle of the gastrointestinal tract has long been known to be doubly innervated, contraction being stimulated through the N. vagus, and inhibited through the N. sympathicus. The smooth muscle which controls the size of the pupil is also doubly supplied; the pupil dilates when the cervical sympathetic is stimulated, and it contracts when the N. oculomotorius is excited. It remained, however, for later studies to demonstrate, (1) that such a double and reciprocally antagonistic innervation holds throughout the whole body as regards smooth muscle and secreting glands, (2) that each of the two innervating systems has a similar architecture, the centrifugal path in each system between the cerebrospinal axis and the periphery consisting of at least two sets of superimposed neurones. The two antagonistic systems taken together have been called by Langley the "autonomic nervous system." What was formerly called the sympathetic system is that part of the autonomic system which is connected chiefly with the cerebral, thoracic, and lumbar portions of the spinal cord; while those parts of the autonomic system connected chiefly with the mid-brain (fibres running in the N. oculomotorius), with the medulla oblongata (fibres running in the N. vagus and N. glossopharyngeus) and with the sacral portion of the spinal cord (fibres running in the N. pelvicus) are known as the
“autonomic proper” or, better, as the “craniosacral autonomic system.”

In addition to these two sets of nerve fibres going to each viscus, some organs have an intrinsic nervous mechanism, partly subordinate to the two autonomic systems, partly independent of them; the plexuses of Auerbach and Meissner of the intestinal wall may be cited as an example.

The Effects of Electrical Stimulation of the opposing Autonomic Systems

In the region of the eye, electrical stimulation of the sympathetic causes dilatation of the pupil (M. dilatator iridis) and contraction of the orbital muscle, while electrical stimulation of the midbrain autonomic (N. III) contracts the pupil (M. sphincter iridis) and causes accommodation spasm (M. ciliaris).

In the salivary glands, stimulation of the sympathetic arrests salivary secretion, while stimulation of the hind-brain autonomic (chorda tympani) causes profuse salivation.

In the cardiac area, electrical stimulation of the sympathetic (N. accelerator) causes tachycardia, while electrical stimulation of the hind-brain autonomic (N. vagus) causes bradycardia.

In the digestive system electrical stimulation (N. vagus) causes increased secretion and hypermotility, while excitation of the sympathetic diminishes secretion and leads to relaxation of the smooth muscle.

In the pelvic domain electrical stimulation of the N. pelvicus causes contraction of the detrusor of the bladder, while electrical stimulation of the sympathetic relaxes this.

Chemical Stimulation of the opposing Autonomic Systems

The effects of chemical substances upon the autonomic nervous system as a whole and upon its various parts have been studied especially by the pharmacologists and experimental physiologists.

Nicotin acts upon each of the two antagonistic autonomic systems, interrupting conduction at the junction (synapse) of the pre-ganglionic fibres with the cell bodies of the neurones which give rise to the post-ganglionic fibres in the ganglia.

*The anatomy and physiology are still further complicated by the fact that each of these two systems contains two sets of fibres—one "favouring" the main function subserved, the other "inhibiting" it. For simplicity of presentation, this point is not extensively elaborated in my paper.
Certain chemical substances, however, show an elective affinity for one or the other of the two autonomic systems. For the sake of brevity the cranio-sacral autonomic system is usually referred to as the "vagal system," since it includes the autonomic fibres of the N. vagus, while the cervico-thoraco-lumbar autonomic system is usually referred to briefly as the "sympathetic system."

Epinephrin, or adrenalin, heightens the activity of the organs innervated by the sympathetic proper, but does not directly affect the functions depending upon innervation by the vagal system. The administration of epinephrin, therefore, is followed by symptoms similar to those yielded by electrical stimulation of the sympathetic (vaso-constriction, tachycardia, mydriasis, dry mouth, glycosuria, gastro-intestinal hypomotility); those who believe that adrenalin acts upon the sympathetic nerve speak of it as a definitely sympathicotropic drug; others believing that it may act on the myoneural or adenoneural junction rather than on the nerve itself, prefer the term "sympathomimetic" to the term "sympathicotropic" or "sympathicotonic."

Certain other drugs act almost as electively toward the vagal system as does epinephrin toward the sympathetic. They are the so-called vagotropic drugs, and include two groups. The members of the first group, including pilocarpin, muscarin, physostigmin, cholin and digitalis, stimulate the vagal system; they are "vagomimetic," producing effects identical with those which follow electrical excitation of this system (miosis, salivation, bradycardia, gastric hyperacidity and hypermotility, pollakiuria). The members of the second or "vagoparalytic" group, including atropin, hyoscin and euphthalmin, seem to paralyze the terminals of the vagal system and lead therefore to effects similar to those resulting from electrical excitation of the antagonistic sympathetic system (mydriasis, dry mouth, tachycardia, etc).

As yet no drug has been discovered which paralyses the whole sympathetic system comparable with the general exciting effect of epinephrin. A drug known as ergotoxin, which has been studied by Dale, seems to paralyze especially the so-called favouring sympathetic fibres, but not the so-called inhibiting fibres.

The vagotropic drugs also act somewhat less generally throughout the whole cranio-sacral autonomic system than does epinephrin on the sympathetic proper; thus atropin acts more vigorously on the autonomic fibres innervating the head and the heart than upon the fibres situated more caudalward; it has relatively little effect upon the sacral autonomic fibres innervating the pelvic
viscera. Again, pilocarpin exerts its maximal effect upon secretory fibres, having relatively little effect upon cardio-inhibitory fibres. Muscarin, on the contrary, inhibits the heart vigorously and may cause standstill through vagus irritation.

From what has been said, it is obvious that in studying clinically a phenomenon in autonomic domains, we have to try to find out whether, in the doubly innervated organ, the effect is due to excitation of one system or to paralysis of the other system. A tachycardia, for example, might be due to stimulation of the N. accelerans, say by coffee, or to paralysis of the N. vagus. Again, a dilated pupil may be the result either of sympathetic irritation or of oculomotor (autonomic) paralysis.

In addition to chemical stimulation by substances of exogenous origin, the antagonistic autonomic nervous systems are constantly being influenced by substances of endogenous origin originating in the body metabolism. Among the sympatheticotropie substances of endocrine origin may be mentioned (1) epinephrin, (2) iodothyrin and (3) pituitrin. Many believe that the epinephrin (adrenalin), which is being constantly formed in the medulla of the adrenals and in the chromaffine system generally, is responsible for a continuous excitation (or perhaps sensibilization) of the sympathetic system proper. At any rate, epinephrin produces effects in the body similar to the effects of electrical stimulation of the sympathetic; it is thus a "sympatho-mimetic" substance, in the sense of Barger and Dale. The exact place of action is still in dispute, though the evidence favours the view of Elliott that it is neither in the nerve itself nor in the end-organ but in a special structure intercalated between the two—in the case of smooth muscle at the "myoneural junction." Less general in their effects, but also, apparently, sympatheticotonic in nature, are the substances iodothyron and pituitrin. Iodothyrin, a hormone originating in the thyroid gland, has an especial effect upon the thoracic and cervical sympathetic and leads, when present in excess, to tachycardia, widened lid slits, exophthalmos and hypersusceptibility of the pupils to epinephrin. Pituitrin, arising in the posterior lobe of the hypophysis, causes vaso-constriction (other than renal), polyuria, and vigorous contraction of the bladder and uterus.

Among the vagotonic drugs of endogenous (or endocrine) origin may be mentioned cholin, which is formed in the cortex of the adrenals. Experiments with cholin show that it possesses an action very similar to pilocarpin. It is certainly interesting that one small organ like the adrenal gland manufactures in its medulla
the substance epinephrin (adrenalin) which is sympathicotonic (sympathomimetic) in its effects, and in its cortex another substance, cholin, which is vagotonic (vagomimetic) in its effects. Extracts of the whole adrenal would, therefore, contain two substances which, as far as the two autonomic systems are concerned, tend to neutralize one another.

There are probably other vagotropic hormones formed in the body, but our knowledge of them is as yet very meagre. We know, for example, that the internal secretion of the pancreas antagonizes epinephrin (or the formation of epinephrin), a fact doubtless of importance in connexion with the pathology of some forms of diabetes mellitus. Again, in congenital insufficiency of the chromaffine system (status thymico-lymphaticus), or in acquired insufficiency of this system (Addison's disease), the cranio-sacral autonomic innervations are in excess of the sympathetic innervations, many think because of deficiency in the supply of the sympathicotonic hormone, epinephrin.

In how far those sudden and violent excitations of the autonomic nervous system which accompany strong emotions are due to the intervention of the glands of internal secretion, and in how far they depend upon direct neural conduction from the brain, we are as yet but ill-informed. I need only remind you of the vasodilatation of the face in the blush of shame, of the stimulation of the lacrimal glands which yields the tears of sorrow, of the palpitation of the heart in joy, of the stimulation of the sudoriparous glands which precedes the sweat of anxiety, of the stimulation of the vaso-constrictors, the pupil dilators and the pilomotors in the pallor, mydriasis and goose-skin of fright, to illustrate some of these violent autonomic excitations. While we do not yet understand the exact mechanisms of association among the activities of the cerebrum, the endocrine glands and the reciprocally antagonistic autonomic domains and their end-organs, we can begin to see the paths which must be followed in order that more exact knowledge may be gained.

In the following table, compiled from the papers of several authors (Langley, Brodie and Dixon, Elliott, Dale, Meyer and Gottlieb, Eppinger and Hess, Fröhlich and Loewi, Biedl, Higier) the effects of electrical and chemical stimulation of the two autonomic systems are epitomized:
<table>
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<th>Effect of sympathetic stimulation.</th>
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<th>Effect of Epinephrin</th>
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<td>Sphincter</td>
<td>Stimulates</td>
<td>N. III.</td>
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<td>Stimulates (Th. I-III)</td>
<td>Paralyzes</td>
<td>Stimulates</td>
<td>Dilator</td>
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<td>N. III.</td>
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<td>(Stimulates?)</td>
<td>M. orbitalis (Mueller's)</td>
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<td>Stimulates chorda tympani.</td>
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<td>(Stimulates?)</td>
<td>Cerebral bloodvessels</td>
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<td>Dilates</td>
<td>Oral bloodvessels</td>
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<td>Stimulates</td>
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<td>Dilates (N. pelvicus).</td>
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<td>Tonus of Stomach</td>
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<td>Cardia</td>
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<td>Peristalsism of stomach</td>
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<td>Secretion of stomach</td>
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<td>Motility of intestine</td>
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<td>Colon</td>
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<td>Pancreas secretion</td>
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<td>Bronchial musculature</td>
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<td>M. detrusor vesice</td>
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<td>Contracts</td>
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<td>Uterus (gravid)</td>
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<td>Contracts</td>
<td>Sugar tonus</td>
<td>Relax</td>
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<td>Contracts</td>
<td>Heat tonus</td>
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<td>Contracts</td>
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THE CANADIAN MEDICAL
The Tonus in the Autonomic Systems, and the Balance Maintained

While the body is alive there is, constantly, a certain amount of activity in each of the antagonistic systems. In other words, a certain "tonus" prevails in each system, maintained (1) by stimuli arriving in the autonomic systems through neural paths, and (2) by direct chemical action (hormones) upon the systems. This matter of tonus* is very complex, since so many factors, neural and chemical, are involved, and since each system can be acted upon at any one of several points between the cerebral cortex and the end-organ (smooth muscle; secreting gland). The balance maintained normally between the two antagonistic systems is one of the most interesting of physiological phenomena. Think, for example, of the rate of the heart beat—how constantly it is maintained at a given level in each individual when the body is at rest; the impulses arriving through the vagal system just balance those arriving through the sympathetic system, so as to maintain a rate of approximately seventy-two beats per minute. And a similar balance is maintained in other autonomic domains (e.g., pupils, bronchial musculature, gastric glands, gastro-intestinal muscle, sweat glands, bladder muscle, etc.).

This equilibrium is all the more remarkable when one considers how frequently it is temporarily upset in the exercise of physiological function. The play of the pupils with varying light, the watering of the mouth at the smell of savory food, the response of the heart to exercise and emotion, the flow of gastric juice on adequate stimulation, the opening of the bile duct at the call of the chyme, the transport of the colonic contents through one-third of the length of the colon through one vehement contraction every eight hours, the sudden relaxation of the sphincter and contraction of the detrusor of the bladder in micturition, the violence of contractions in the domain of the N. pelvis in parturition in the female and in ejaculation in the male, come to mind at once as examples of sudden physiological overthrow of balance.

Autonomic Disturbances Met With Clinically

Since 1910 I have been interested in examining the patients in the medical wards of the Johns Hopkins Hospital with especial reference to pathological disturbances of innervation in autonomic domains. One of my associates, Dr. Frank J. Sladen, the resident

*A distinction must, of course, be made between tonus and excitability.
physician of the hospital, has been my co-worker in this study and we have already published a preliminary report on the subject in the Transactions of the Association of American Physicians.

Among the patients suffering from so-called functional nervous disorders (neurasthenic, hysterical and psychasthenic states) or from disturbances of the glands of internal secretion (the thyreopathies, diseases of the hypophysis, diseases of the chromaffine system, diseases of the genital glands, etc.), we have found a material very suited to our purposes, from which we have obtained a rich yield in "autonomic" symptoms.

On this occasion time will not permit of any extensive analysis of these cases. Suffice it to say that we have been impressed by the possibility of enrichment of the clinical histories in patients of these types by careful attention to the symptoms referable to abnormal autonomic innervation. We have been struck with the fact that when one abnormal autonomic sign is observable, a systematic examination of the viscera with autonomic innervations in mind will almost always reveal a number of other deviations from the normal. The kinds of symptoms and signs observable may readily be deduced from an examination of the table given above, in which the effects of electrical and chemical stimulation are recorded. For clinical purposes the following table of the more common symptoms resulting from pathological innervation of smooth muscle and secreting glands may be convenient.

a. Symptoms and signs in the head and neck

(a) The Eyes. These include (1) myosis and mydriasis; (2) accommodation spasm and accommodation paralysis; (3) widened and narrowed lid slits; (4) von Graefe's sign; (5) Dalrymple's sign; (6) infrequent winking (Stelwag); (7) insufficient maintenance of convergence (Moebius); (8) exophthalmos and enophthalmos; (9) epiphora and dryness of the eyeballs; (10) Loewi's test (positive adrenalin mydriasis); (11) Argyll-Robertson pupil; (12) anisocoria.

(b) In the Nose and Mouth. (1) excess of saliva with constant spitting; (2) dry mouth or xerostomia; (3) coryza vaso-motoria.

(c) In the Skin. (vide infra).

(d) In the Meninges. Pain of vaso-motor origin (cephalalgia; hemierania).

b. Symptoms and signs referable to the respiratory system

(1) Laryngismus and laryngeal crises; (2) asthmatic attacks; (3) pulsus irregularis respiratorius; (4) Aschner's phenomenon
(pressure on the eyeballs stimulating the first, the trigeminus and then, reflexly, the vagus and leading to arrest of respiration in the expiratory phase, with slowing of the pulse).

c. Symptoms and signs in the circulatory system

(1) Tachycardia; (2) bradycardia; (3) changes in conduction time (dromotropic disturbances); (4) pulsus irregularis extrasystolicus; (5) angina vaso-motoria; (6) Aschner’s phenomenon (vide supra); (7) changes in blood pressure; (8) peripheral hyperæmias and anæmias; (9) intermittent claudication; (10) dyspragia intermittens intestinalis; (11) acrocyanosis; (12) urticaria.

d. Symptoms and signs in the digestive apparatus

(1) Esophagismus; (2) cardiospasm; (3) gastric neuroses (hyperacidity, achylia, gastrosuccorrhœa, pylorospasm, gastrospasm, gastric atony); (4) atonic and spastic constipation, diarrhœa nervosa, colica mucosa, anal sphincter spasm.

e. Symptoms and signs in the uro-genital system

(1) Retention and incontinence of urine; (2) pollakiuria and tenesmus; (3) renal colic; (4) disturbances of libido, of erection, of ejaculation and of orgasm; (5) uterine atony and certain menstrual disturbances.

f. Symptoms and signs in the cutaneous system

(1) Goose-flesh; (2) trichopilar crises; (3) contractions of smooth muscle of tunica dartos and of nipple; (4) hyperhidrosis and anhidrosis (unilateral or bilateral); (5) bromidrosis; (6) vaso-constriction (pallor); and vaso-dilatation (erythema); (8) dermographismus.

g. Symptoms and signs referable to the haemopoietic, metabolic, and endocrine organs

(1) Eosinophilia; (2) eosinopenia; (3) lymphocytosis; (4) status thymico-lymphaticus; (5) the pigmentation; (6) increased or diminished glucose tolerance (glycosuria); (7) increased or diminished fat tolerance (steatorrhœa).
Local and General Forms of Abnormal Vagotony and Sympathicotony

Dr. Sladen and I in our studies have tried to find out whether or not the conception of a clinical abnormal vagotony or sympathicotony, as postulated by the Viennese clinicians, Eppinger and Hess, is justifiable. The experimental physiological studies and the pharmacological researches bearing upon the reciprocal control of the two antagonistic subdivisions of the autonomic nervous system to which I have already referred, having yielded such interesting results, an attempt at clinical application was almost certain to follow. For it would seem a priori not improbable that neural and chemical disturbances arising from various natural causes, and resulting in increased or decreased excitability or in too high or too low a tonus in either of the two systems, could be accountable for recognizable clinical symptoms.

While the writings of clinicians contain many instances of disturbance which we can now see belong to the autonomic domain, it is to Eppinger and Hess that we owe the establishment of the clinical conceptions of "vagotonia" and of "sympathicotonia"—conceptions which bring symptoms in widely separated parts of the autonomic domain together. They separate a so-called "vagotonic constitution" from an outspoken clinical "vagotonia," the former being characterized by (1) a hyper-sensitiveness to pilocarpin, (2) a relative insusceptibility to sympathetic stimuli, and (3) various clinical symptoms indicating heightened tonus throughout the cranio-sacral autonomic system. The sympathicotonic constitution, in turn, is characterized by (1) a hypersensitiveness to epinephrin, (2) a relative insusceptibility to pilocarpin and atropin, and (3) various clinical signs of heightened tonus throughout the sympathetic system proper.

Clinically an outspoken case of vagotonia may include a varying number of the following signs (corresponding to stimulations of the cranio-sacral system):—small pupils, accommodation spasm, wide lid slits, salivation, epiphora, profuse sweating, reddened face, cold and moist hands and feet, bradycardia, pulsus irregularis respiratorius, bronchial asthma, eosinophilia, hyperacidity, gastrospasm, cardiospasm, pylorospasm, spastic constipation, biliary colic of nervous origin, anal-sphincter cramp, pollakiuria, and priapism.

In the studies made with Dr. Sladen, we found that in a certain number of cases a fairly general vagotonia or a fairly general sym-
pathicotonia may exist, though local vagotonias and sympathicotonias are common; a large number of cases present vagotonic signs in one domain and sympathicotonic signs in another domain; and in some cases mixed signs in a single domain were met with.

We have used the pharmacodynamic method in the control of our cases. As a stimulant of the cranio-sacral (or "vagal") system we have given pilocarpin hypodermically in doses of 0.01 to 0.003 grams (grs. 1⁄6 to grs. 1⁄20), and as a paralysant of the same system, atropin hypodermically in doses of 0.001 to 0.00065 grams (grs. 1⁄50 to grs. 1⁄100). As a sympathetic stimulant we have used epinephrin (adrenalin) usually in doses of 1 mg. hypodermically. Some use for these tests 1 mg. atropin, 1 cg. pilocarpin and 1 c.c.m. of adrenalin solution (1:1000)*.

We found some patients who reacted in an outspoken way to both pilocarpin and epinephrin, each of the two systems seeming to be hypersensitive. The pilocarpin-sensitive patients react with salivation, sweating, nausea, epiphora, flushing, and a fall in blood pressure. They react to atropin by palpitation, dryness of the mouth and throat, and precordial oppression. The epinephrin-sensitive patients on being given epinephrin react with tremor, sense of cold, rigor, glycosuria and rise in blood pressure.

An analysis of the various pharmacodynamic reactions observed in twenty-one cases in this way will be found in our published paper. In six patients who exhibited marked sensitiveness to pilocarpin, the vagotonia varied somewhat in different domains, though, usually, the vagotonic signs were most marked in that portion of the autonomic domain to which belonged the clinical symptom which had first attracted our attention. Thus, for example, in a patient suffering from bronchial asthma, certain other symptoms in the hind-brain domain were conspicuous. In epinephrin-sensitive cases, also, there was no sure way of prophesying in what domains the sympathicotonic signs would be most conspicuous.

We also studied the correlation between clinical symptoms and pharmacodynamic autonomic reactions in another way. Taking the cases which clinically showed various vagotonic manifestations, we found that in twenty-eight instances the response to vago-

*Higier recommends systematic pharmacodynamic testing as follows: (a) Conjunctival instillation and subcutaneous application of epinephrin; (b) Subcutaneous injection of epinephrin, 0.01 mg. per kg. of body weight three hours after swallowing 100 grams of glucose (to determine glucose tolerance); (c) Subcutaneous injection of atropin sulphate, 0.01 mg. per kg. of body weight; (d) Injection of pilocarpin muriate, 0.1 mg. per kg. of body weight.
tropic drugs was positive in eighteen. Again, in thirty-one cases in which there were marked sympathicotonic signs of one sort or another observable clinically, twenty yielded a positive reaction on subcutaneous injection of epinephrin. We came to the conclusion, therefore, that a conspicuous vagotonic or sympathicotonic sign, as far as the material thus far studied is concerned, may also be a mark of a pilocarpin-sensitive or epinephrin-sensitive individual in about 64 per cent. of the instances.

As to whether an exaggerated tonus (or excitability) in one of the reciprocal antagonistic systems is accompanied by a diminution of tonus (or of excitability) in the other, our results differ somewhat from those of other workers. We found a harmonious agreement between the pharmacodynamic reactions and clinical manifestations in only seven of nineteen cases. In two patients who exhibited pilocarpin-sensitiveness the sympathicotonic signs were nearly as conspicuous as the vagotonic signs, and in three patients sensitive to epinephrin the clinical signs referable to heightened tonus in each of the systems were approximately equal. In five patients sensitive to epinephrin it must be admitted that clinically vagotonic signs predominated.

It is obvious, therefore, that the mere demonstration of pilocarpin-sensitiveness or of epinephrin-sensitiveness does not permit, in every case, of an immediate conclusion regarding heightened tonus in the vagal or in the sympathetic autonomic system. Nevertheless the setting up of a vagotonic type and of a sympathicotonic type as schemata seems to us valuable and stimulating to clinical observation. The whole domain of visceral neurology should from now on be cultivated with more fruitful results, now that we begin to understand the relations of the viscera and their innervations to the central nervous system on the one hand and to the hormones arising in the endocrine glands in the other. In the pharmacodynamic tests we have, to use Januscheke’s fine image, tuning keys by means of which we can operate upon the complicated stringed instrument of the body, and voluntarily make one string tighter to increase its vibrations, or another looser to dampen its function.

Our studies lead us to agree with those who urge that the conception of vagotony be not too rigidly defined; we must be prepared to meet with exceptions as yet difficult to explain, and with deviations from the pharmacodynamical reactions which might be expected. Certain of the hormones may be less elective than the physiologists have taught us to believe; thus the occurrence of vagotonic signs mixed with sympathicotonic signs in the forms of Basedow’s disease accompanied by outspoken psychic distur-
bances (von Noorden, Jr., and others), demand more careful study. As Higier wisely remarks, the new conceptions of vagotony and sympatheticotony will doubtless undergo evolution like the majority of clinical conceptions in neurology. We can, nowadays, make a diagnosis of tabes, Basedow’s disease, Parkinson’s disease, or of multiple sclerosis, even in the absence of one or more of the original pathognomonic signs, or cardinal symptoms, described by their discoverers.

For therapy, as well as for diagnosis, clinical men will do well from now on to give due consideration to disturbances of the visceral nerves. In no part of internal medicine can more be expected from pharmacotherapy; we have at our disposal a host of agents—nicotin, atropin, pilocarpin, physostigmin, colchicin, adrenalin, cocain, ergotoxin, calcium, to mention only some of them—which have already been shown to act more or less electively; may we not hope that our clinics may find out how effectively to use them and others still to be discovered, in regulating the functions of the visceral nerves in at least many of the instances when they are disturbed.

References:

GASKELL—On the structure, distribution and function of the nerves which innervate the visceral and vascular systems. J. Physiol., Lond., 1886, vii, 1.


BRODIE and DIXON—On the innervation of the pulmonary blood vessels; and some observations on the action of suprarenal extract. J. Physiol., Lond., 1904, xxx, 476.


MEYER u. GOTTLIEB—Die experimentelle Pharmakologie, II Aufl., Berl. u. Wien, 1911, 126.


FRÖHlich—Die Pharmakologie des vegetativen Nervensystems, Wien, 1911.


ADDRESS IN GYNAECOLOGY

By Thomas S. Cullen, M.B.

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To visit London is always a pleasure, to come as an invited guest to the Canadian Medical Association in the Forest City an honour which I deeply appreciate.

This evening I want to briefly outline the various methods adopted to educate the public as to the early recognition of cancer, and to impress upon them the fact that in the early stages of the disease many patients can be permanently cured.

For several years the medical profession has been fully cognizant of the fact that the laity has a false idea about cancer, namely the widespread feeling that it is a blood disease and that consequently it cannot be cured. It is our duty to impress upon them the fact that in the beginning it is a strictly local process, a process that is amenable to surgical treatment.

Several earnest campaigns have been waged during the last few years. The various committees have devoted their attention mainly to pointing out to the family physicians what might be accomplished by early operation and urging the physician to send his patient at the earliest possible moment to the surgeon. Notwithstanding the splendid efforts in this direction little has been accomplished, not because the physicians were necessarily negligent, but because the patients did not present themselves until the disease was far advanced. It was finally realized that if satisfactory results were to be accomplished the message must be carried directly to the people. It was pointed out that fifteen or twenty years ago it was exceedingly difficult to prevail upon persons with appendicitis to be operated upon; now with the knowledge they have, after appendicitis has been diagnosed, operation is at once sought, and the only question asked by the patient or his relatives is—to what hospital shall I go? When the laity are made fully aware of the cancer situation they will on the first sign of the disease present themselves for examination and will gladly avail themselves of surgical aid.

At the meeting of the Clinical Congress of Surgeons of North America, held in New York City in November, 1912, a cancer campaign committee was appointed mainly through the efforts of Dr. Franklin H. Martin of Chicago. The committee was instructed to write, or have written, articles on the subject of cancer and was further instructed to have these published in the daily press, the weekly or monthly magazines, as might be deemed most expedient. The committee has gone cautiously, and through the aid of that master organizer and medical editor, George H. Simmons, was able to enlist the cooperation and support of some of the most representative magazines in the country. Mr. Bok, editor of the Ladies' Home Journal and Mr. Harriman, managing editor of the same journal, manifested the deepest interest in the campaign. After much thought they came to the conclusion that a lay writer could better reach the public ear, and they naturally selected Mr. Samuel Hopkins Adams, who was such a dominant factor in the campaign against patent medicines, and who was last week made an associate member of the American Medical Association in recognition of his splendid crusade. Mr. Adams visited various surgical clinics throughout the country and then wrote a most comprehensive article on the subject. His first article was published in the Ladies' Home Journal for May, 1913. It is well worth a thorough perusal not only by every layman, but also by each member of the medical profession. Collier's Weekly for April 26th, 1913, and the May number of McClure's Magazine also contain admirable articles on the same subject from Mr. Adams' pen. The medical profession is under a deep debt of gratitude to Mr. Bok, Mr. Harriman, Mr. Collier and Mr. McClure for so freely opening their pages for the enlightenment of the public on this very important subject.

It has been estimated that these three articles reached a reading public of between eight and ten millions. Harper's Weekly for March 29th, also contained a timely article urging cancer patients to be operated upon without delay. Abstracts from the magazine articles appeared in many of the daily papers throughout the country. The Baltimore Sun contained a full column, the Baltimore News and the Baltimore American each devoted ample space to the subject. The New Orleans News-Item gave a full abstract of Mr. Adams' article from McClure's and the Detroit News-Tribune for Sunday, April 27th, 1913, with the permission of the Ladies' Home Journal, copied Mr. Adams' article in full. I have just mentioned a few of the daily papers that have given this matter
wide publicity. The entire press of the country has been most liberal in its dissemination of our knowledge of cancer. This support was not confined to the papers of the United States. The Canadian papers have also strongly emphasized the necessity of patients suffering with cancer having their ailment attended to promptly. I have splendid clippings from the daily press of London, Toronto, Montreal, St. John, N.B., Winnipeg and Vancouver. Our committee wishes to express our deep sense of appreciation of the hearty support given us by the press of Canada and of that of the United States in the dissemination of this knowledge, and we feel confident that they will gladly continue to publish any new data on the subject, until every one on the continent has a clear idea of just what cancer is, what its early symptoms are, and how they can best be treated.

An advertiser is naturally looking for results, and in like manner the cancer campaign committee was anxious to find out what influence Mr. Adams' article had had on the community at large. It was not long before they were forthcoming. I will relate just a few of them to you. Within a week after the appearance of Mr. Adams' publication a colleague of mine told me that he had just operated upon a patient with cancer of the breast. The nodule was not larger than a pea. When asked why she came so early, she said that she had just read the article in the Ladies' Home Journal and felt that it was unwise for her to delay,—the outlook in this case is excellent. Another colleague had for weeks been urging a patient with cancer to be operated on, but to no purpose. Within three days after the appearance of the article which she had carefully read she entered the hospital and was operated upon. Dr. C. Jeff Miller, of New Orleans, wrote me that, as a result of the Ladies' Home Journal article, a lady soon came to him with an early cancer. Dr. T. C. Kennedy, of Indianapolis, under date of May 13th, 1913, writes. "A lady out in the state noticed a lump in the left breast. Seeing the article in the Ladies' Home Journal she immediately consulted her family physician who referred the case to me. I operated on her at St. Vincent's Hospital last Thursday, doing a Halsted. Here is a case that has a good chance of getting entirely well, as it was taken early."

Dr. Franklin H. Martin, of Chicago, early in May of this year saw a beginning carcinoma of the breast. The husband had just read the article in the Ladies' Home Journal, and insisted on his wife consulting a surgeon. Dr. Martin removed the entire breast and the axillary glands, and feels sure that the outlook for a permanent cure is an excellent one.
My experience as to the strong impression made by Mr. Adams’ article has been similar to those already related. In one morning I saw three patients from widely different points, one from New Orleans with some bleeding due to slight pelvic inflammation, another from Alabama with some bleeding due to a prolapsus, and a third from Maryland, with a small, but benign tumor of the breast. Each had read Mr. Adams’ article, and each hastened her visit as a result of this article. All were afraid of cancer and in each case I was able to relieve the patient’s mind, telling her that no malignancy existed. Two of these three patients required minor operations.

From what you have heard, the knowledge of cancer has already been widely disseminated and it is bound to bear fruit. The more the subject is investigated the clearer it becomes that if the women of the country are made aware of what can be done if cancer patients apply early for treatment, it will be unnecessary to pay much attention to the men. If men are sick, unless very ill they pay no attention to it, and only after they are urged by their mothers, wives, sisters or daughters, do they seek medical aid. As a matter of fact the woman is the health guardian of the household.

Skin cancer. Cancer of the skin is easily and promptly recognized and is usually soon brought to the attention of the physician. Cancer of the lip is also soon discovered by the patient and as a rule the physician’s advice is sought early. While in many instances wide excision of the growth is at once advised, yet it is appalling to find the number of patients that are still treated in a palliative manner. Only a few months ago a friend drew my attention to an ulcerated area on his lower lip. His associates had not noticed it because of his long moustache. On questioning him I was surprised and distressed to learn that a supposedly competent physician had been burning the “ulcer” every few days for fully two months. Very valuable time was lost. Within a few days the growth and the glands of the neck were removed. These glands were on microscopical examination found markedly involved by cancer, and the patient’s ultimate outlook is a very gloomy one.

Cancer of the tongue. Any growth of the tongue naturally calls for immediate intervention. My colleague, Bloodgood, has frequently drawn attention to the small white patches on the lip or tongue of smokers. He looks upon these as precancerous lesions, and if after a week or two they still persist, then he advocates their immediate removal.
Cancer of the stomach is one of the very frequent varieties of cancer. In the late stages, to be sure, it can be diagnosed from blood in the stomach contents, the reaction of the stomach juices, and by the co-existent nodule that can in some cases be detected. In the early stages of the disease, however, most of these signs are wanting, and it is only in the early stages that a reasonable hope of a permanent cure can be thought of. In the right upper abdominal quadrant we most frequently find gall-stones, duodenal ulcer, or cancer of the stomach. Any marked disturbance in this region calls for prompt operative interference. A delay in a case of cancer of the stomach until definite signs are present usually means a delay until the case is advanced too far for operation.

Cancer of the intestine may be detected early if the growth partially or almost completely blocks the lumen of the bowel, or if it be associated with a great deal of bleeding. Sometimes when the patient is thin the nodule can be palpated. In stout individuals, however, the cancer may have extended far before symptoms sufficiently definite to enable one to make a diagnosis, are present. If there be any obscure abdominal condition present, and if this does not yield promptly to treatment, then an exploratory operation should be promptly undertaken, as many valuable lives may in this manner be saved, lives that would be absolutely doomed if delay were advised.

Cancer of the rectum usually gives its tell-tale warning in the form of blood or of pain on defecation, and its recognition is not difficult.

I have referred only to the more common varieties of cancer; time will not permit me to discuss the subject in detail.

If we are successful in our cancer campaign, and of this there is not the shadow of a doubt, then we must be prepared to give these patients the best possible service. We must be able to diagnose accurately the borderline cases, and then when cancer does exist we must do such an extensive and thorough operation that the patient is given the maximum chance for a permanent cure.

In cancer of the skin, lip, tongue and rectum a diagnosis can usually be readily made by the surgeon in his regular examination. Cancer of the stomach can in the early stages be detected, as a rule, only with the possible assistance of the Roentgenologist, and mainly by an exploratory abdominal operation. The two chief classes of cancer that require expert pathological knowledge are cancer of the breast and cancer of the uterus.

Cancer of the breast. All surgeons meet with many nodules
in the breast. Some of these are definitely fibrous in character, others are definitely cancer, while not a few are on the borderline and can only be positively diagnosed on microscopic examination. It is wise to remove all breast nodules, but where malignancy exists it is imperative to do a most thorough and complete removal of the breast, pectoral muscles, axillary glands and fat. Bloodgood, after the most careful and painstaking study of the cases at the Johns Hopkins Hospital, has found that to remove a piece of cancerous breast for microscopical examination and then delay several days or a week for the pathologist’s report is a most dangerous procedure, as nearly all of these patients have a recurrence. The cutting into the growth allows such a widespread dissemination of the cancer that the subsequent operation is of no avail. Consequently, in case of doubt a piece should be cut out and examined immediately, the area of the excision in the meantime being treated as a contaminated area, and if cancer is reported the breast is removed at once, the delay occasioned by the microscopic examination not having taken over ten to fifteen minutes at the outside.

There are many good surgeons through the country, but few good surgical pathologists, except in the teaching centres. The time is speedily coming when every hospital will have a trained and expert surgical pathologist on its staff, a man whose advice can be had at every operation. He will prove to be one of the hospital’s most valuable assets. Some may ask why we have not more such men. The truth is that the young physician must make a livelihood, and as the pathologist receives as a rule a mere pittance for his work, few have the scientific perseverance to enter this field. This field must be made sufficiently remunerative to induce plenty of capable men to enter it. When once they embark upon it, learn what a fascination there is in following an individual case to its very rock bottom, obtain here and there a clue enabling them to forecast with a degree of definiteness and precision whether this or that patient will recover, and even every now and then discover something that has never been known to medical men before, then you will find men that will never give up the study of surgical pathology.

When I started medicine a quarter of a century ago, asepsis was slowly creeping into Ontario, and Lister’s carbolic spray was still in vogue. We examined very little operative material microscopically in those days. The time is rapidly drawing near when every surgeon, before he becomes a real surgeon, must have as thorough a grounding in surgical pathology as he now has in the
principles of bacteriology. Many conditions that are now obscure to him, after months of study of their finer structure in the laboratory are readily recognized with the naked eye. On opening the abdomen, whether in the clinic or in a small country house, he is always thoroughly familiar with whatever panorama the abdomen in the individual case may unfold. In one case he will find a small nodule not larger than a pin-head; this will give him a clue as to some pathological condition tucked off in a remote corner of the abdomen. In another operation he will at first glance think the case inoperable but will notice some small familiar nodule partially buried in adhesions. He knows from past laboratory experiences that this is benign, and will go ahead and finish his operation. A high building requires deep foundations. Few surgeons of the future will attain marked renown unless these foundations consist in a thorough knowledge of surgical pathology, the material that they are daily confronted with.

Cancer of the uterus. Bleeding from the uterus that cannot be satisfactorily accounted for should always excite suspicion. On vaginal examination it is frequently possible to make out a uterine tumour. When the uterus is fairly normal in size and not nodular, and the cervix is normal, then of course the organ should be dilated and curetted. Before undertaking to make a diagnosis from scrapings one should have a thorough knowledge of the appearance of the normal endometrium at or between the periods, during pregnancy, and in old age; each is different and yet perfectly normal.

Hyperplasia of the Endometrium. I want to draw your attention to a common, and yet little mentioned, pathological condition of the endometrium causing exceedingly free bleeding at the period, and often reducing the patient’s haemoglobin to a very low point. The first cases of this kind that were brought to my attention came independently from Dr. F. R. Eccles and Dr. H. Meek, of this city, in 1895. These cases were reported in “Cancer of the Uterus,” page 479, published in 1900. These patients are usually from thirty-five to forty-five years of age, but I have noted the condition in girls in their teens. The flow is excessive and the menstrual periods may be almost continuous, there is usually no intermenstrual discharge, however. The mucosa is much thicker than usual. On microscopic examination the surface epithelium is found intact. Some of the glands are very small, others much enlarged. The large glands may be either circular or tortuous. All are lined by thickened epithelium and the stroma is excessively cellular. Often the nuclei of the stroma cells contain nuclear figures. Scattered
throughout the stroma are frequently found large venous sinuses some of which are thrombosed. Cancer of the body of the uterus is diagnosed from its pattern and, secondly, from the changes in the individual cells. Gland hyperplasia histologically bears absolutely no resemblance to it.

Where carcinoma of the cervix exists the small cauliflower outgrowths from the cervix or the area of ulceration leave little doubt as to the diagnosis. If one is not certain, then a small wedge of cervix is removed and examined, preferably at once.

While speaking of carcinoma of the cervix I wish to draw your attention to a pelvic tumor that has thus far in the main escaped notice. Dr. D. S. D. Jessup, of New York, recently sent me a specimen of two tumours each of which had the same characteristics. In each case the tumour was attached to the cervix and grew into the rectal wall. Both growths were so firmly fixed that while the surgeon was doing a complete abdominal hysterectomy he had to remove at the same time a piece of rectal wall with the cervical growth. In both cases the tumour consisted of myomatous tissue with uterine mucosa scattered throughout it. In the February number of the Proceedings of the Royal Society is a report of two similar cases by Dr. Cuthbert Lockyer, of London.

I have had two cases which belong in this category. In the first case the myoma had not as yet become firmly grafted on to the rectum. In the second case the adenomyoma filled the left broad ligament, and on account of the patient's extreme weakness it could only be removed in part. I feel confident that, when all rectal growths are carefully examined histologically, some supposedly carcinomatous growths will prove to be adenomyomata. These cases are of so much interest that I will give them somewhat in detail.

Case 1. Myomata of the Uterus; Adenomyoma between the Cervix and Rectum and associated with Rectal Adhesions.

Mrs. G. P., seen in consultation with Dr. Samuel T. Earle, March 17th, 1911. This patient had several small polypi in the rectum. The uterus lay back on the bowel and was apparently adherent. On March 22nd, of the same year, Dr. Earle burned off the rectal polypi. These were five or six in number and situated directly behind the cervix. Microscopic examination of these showed that they had been undergoing definite inflammatory changes, as evidenced by the quantities of polymorphonuclear leucocytes on the surface, and by the fact that the underlying stroma contained great numbers of small round cells.
After Dr. Earle had finished his operation I opened the abdomen. The rectum was found adherent to the posterior surface of the uterus low down. On the left side was a corpus luteum cyst. This had evidently ruptured at some previous time, as the surrounding tissues were stained a dark brown. We did a complete hysterectomy removing the uterus and appendages. I then shelled out a small myoma 1 cm. in diameter from the left side of the pelvic floor and another 3 cm. in diameter with a secondary nodule 1 cm. in diameter lying on its surface. This combined nodule was situated between the rectum and vagina on the left. The patient made a perfectly satisfactory recovery. At a later date, however, she had definite renal trouble as evidenced by pus from both kidneys. X-ray examination showed a calculus in the pelvis of each kidney. As the left kidney had apparently given more trouble than the right we removed the stone from that kidney. The stone in the right kidney the patient still has, as it has given her very little trouble.

Pathological report, No. 16079. The uterus itself is little enlarged. Scattered over the outer surface of the organ are several small fibroids. On microscopic examination the endometrium shows definite endometritis. The larger nodule lying between the cervix and rectum is $4 \times 3 \times 2$ cm. and the smaller one 1 cm. in diameter. The larger nodule on histological examination consists in the main of typical myomatous tissue, but at one point in a cleft are islands of typical uterine mucosa and at another point is a miniature uterine cavity. The smaller nodule only contains one or two gland-like spaces. From the history it will be noted that in this case the cervix was adherent to the rectum. We have here a connecting link between the ordinary adenomyoma of the uterus and an adenomyoma involving the rectum. It is the only case that I have ever seen showing this stage.

**Case 2. Adenomyoma in the left broad ligament and intimately blended with the rectum.**

Mrs. G. S., admitted to the Johns Hopkins Hospital, June 4th, 1913. This patient is thirty-seven years of age, and two years ago was operated upon in San Francisco, a myomatous uterus and enlarged ovaries being removed. At that time it was necessary to also remove a small portion of the rectum on account of dense adhesions.

Since operation she had had a great deal of pain in the lower abdomen and has for months had almost continual bleeding from the cervix. On her admission to the hospital I found thickening
posterior to the cervix, also induration in both broad ligaments. Although she was in a very weakened condition from the continuous loss of blood we felt that something must be done. The cervix was dilated, and on curetting we brought away what on microscopic examination proved to be perfectly normal uterine mucosa. The supravaginal hysterectomy had evidently been a high one. The right broad ligament was indurated and board-like, and on the left side there was also thickening.

A few days later we explored the abdomen. When the operation was commenced her pulse was 145. We found the rectum densely adherent to the bladder, and the left broad ligament was filled out by a rather cystic growth. Those assisting at the operation thought that we were dealing with a malignant growth which had spread into the broad ligament. In order to determine definitely I cut the round ligament and separated the folds of the broad ligament, and found we were dealing with a cystic mass 6 cm. in diameter. This was gradually shelled out from its attachment to the rectum, but by this time the patient’s pulse had become almost imperceptible and was between 180 and 190, although she had lost practically no blood. We removed the greater part of the growth but left a portion still attached to the rectum and did not dare explore the right broad ligament. A drain was introduced into the pelvis and brought out into the lower angle of the incision. When the cystic mass that was attached to the rectum and had occupied the left broad ligament was cut across, it was found to contain one large irregular cavity about 2.5 cm. in diameter. This contained chocolate-coloured fluid and was lined by a rather smooth-looking membrane which was brownish tinged. The outer coat looked like ordinary muscle.

On microscopic examination it was found that the wall of the blood-stained cyst was lined by one layer of cylindrical epithelium, and that this rested on a definite stroma consisting of cells having oval vesicular nuclei. The more solid portions of the growth were made up of non-striated muscle fibres arranged in whorls, and of quantities of uterine glands embedded in their characteristic stroma. In some places only two or three glands with the surrounding stroma were visible but at other points miniature uterine cavities were found.

We are here dealing with an adenomyoma which has formed a cystic mass in the left broad ligament and which has become densely adherent to the rectum. If the patient at a later date is in fair condition we will then attempt to shell out the thickening in
the right broad ligament, remove the cervix and then a portion
of the rectum to which the growth is intimately blended.

Since this note was made the patient had gradually become
weaker. She died June 19th. These growths when once removed
do not return.

To do the maximum amount of good for the increased numbers
that will come for operation as a result of our labours, our surgeons
must be thoroughly conversant with the anatomy of the given part
and must have a full knowledge of the paths along which the cancer
travels from its point of origin. In cancer of the lip the operator
must consider the removal of the glands of the neck. In cancer of
the breast he must be familiar with the lymph glands that are
first involved, and in cancer of the rectum must remember that the
liver is frequently secondarily invaded and that if such be the case,
an extensive rectal operation is contra-indicated.

I shall never forget meeting one of my Baltimore colleagues
abroad one morning and saying, "Why, I thought you were going
to Dr. ——'s clinic this morning." The reply was, "I did. He
was to do a breast operation at 8.45, I arrived at 9, and the operation
was over." This was not long ago, and the surgeon has a world-
wide reputation. If our work were to be as superficial and incom-
plete as in this case, then it were better not to undertake any cam-
aign against cancer. But such is not the case, and admirable
work is being done in many clinics, not in all, however, I am sorry
to say.

Some surgeons fearing they will not be able to close the wound
after an extensive breast operation are loath to remove as much
tissue as is necessary. They accordingly make their flaps alarm-
ingly near the cancer area. A recent method devised by my
friend, Dr. Curtis F. Burnam, obviates this. The surgeon makes
as wide a removal as he deems necessary giving no thought to the
raw area left. After removal of the breast the raw area is mea-
sured and a skin area of sufficient size is removed from the abdominal
wall. It does seem remarkable that this method has not been
employed before as a routine procedure, as the abdominal wall is
so lax that a flap of practically any size can be removed and the
resultant space easily approximated.

Every wide-awake business man has his hands on the reins
continually, has careful records of his purchases and of his sales,
and at regular intervals takes stock. Recently I was dining with
the general manager of one of the greatest trunk railroads in the
United States. He was a keen-eyed business man. After dinner
the conversation drifted to methods of keeping track of various data.
On my asking him a question he took me back to the dining room
in his private car and opened the buffet which in former years was
usually stocked with viands, and showed me his card catalogue
dealing with all phases of the road. In other compartments he
had complete data of every piece of work being done on the entire
road, also up-to-date statistics relating to the number and character
of the employees of the road. This was a working office of the en-
tire road where he could transact business no matter whether his
car was lying on a siding or in a city distant to the home office,
where a duplicate set of papers and files were kept. This rail-
road manager, no matter where he happened to be, was always
ready at a moment's notice to satisfactorily transact his company's
business.

Hospital management in years past was notoriously lax, but
in recent times business methods have been introduced into many
of the newer institutions. It would do all medical men good to
visit up-to-date business houses and see the card index systems
and the various short-cut methods employed in every day business.
It would also be admirable for the trustees of the various hospitals
to see to it that the same systematic and business-like methods
are used in the registration of data in the hospitals with which
they are connected, as they employ in their individual business.
I cannot help thinking of the Episcopal clergyman in New York,
who had as his board of trustees several wide-awake business men.
On one occasion it took them several hours to discuss the expendi-
ture of a few hundred dollars. Finally the clergyman in despair
leaned over and whispered to one of the trustees, "How would you
handle such a proposition in your business?" This trustee replied
that such small matters never came to his attention. The ludi-
crous side of the situation suddenly dawned upon him. Here he
and his brother trustees, all millionaires, were spending hours
worrying over trivial matters—that would in their business offices
be attended to by junior clerks. The trustee immediately moved
that the rector be given authority once and for all to order what
was necessary for the church, and to send in the bills to them.
The trustees of the hospital and the various members of the medical
staff are in some measure in a similar position to that board of
trustees. Their time is too valuable to be continually taken up
in routine, but it is their duty to see to it that competent clerks
are employed to keep careful records of all patients entering the
hospital or dispensary. The findings at operation must be recorded with precision and the microscopical examinations of the specimens added to the history.

This is an age of time-saving devices and all business men are keen to see what results have accrued from their endeavours. What applies to business applies equally well to the subject of cancer. What is the use of operating year after year in a routine manner, having but a hazy idea of what has finally become of the patient. At least one tactful clerk in every hospital should be assigned to the task of keeping in constant contact with those who have been operated on. In this manner one can at a glance tell how many patients have been relieved by operation. The results of one operator are compared with those of another—of course in a most friendly way, and there is no doubt that a runner can always make better progress with a pacemaker. The careful analysis of a large number of cases always demonstrates wherein future improvements can be made. This continually keeping track of the patients will in itself strongly impress the former patients with the hospital’s interest in their welfare, and will stimulate them to urge their fellow companions to undergo the same treatment if they be taken ill.

These data to be of use must from time to time be thoroughly analyzed and published. You and I are continually gleaning knowledge from the publications of other men both on this and the other side of the water, but how many of us are doing our share in the dissemination of knowledge? In fact we manifest a remarkable tendency to become sponges instead of springs for the pouring forth of our medical experiences—experiences that other surgeons should know of and profit by. Follow up all your cancer patients, see what has become of them. Many of them will be dead, but some that you have lost track of are still living and well. You will soon become so interested in the return letters that you can hardly wait for the postman to arrive, and when now and then a reply says that the patient is alive and well at the end of ten or thirteen years it will warm the cockles of your heart, it will more than outweigh many of the disappointing results you have had and will make you feel that after all the fight is well worth the undertaking.

A year ago I was asked to write the surgeons of the Southern States to find out what their final results were after operation in cancer of the cervix. The results of my inquiries are given in Surgery, Gynecology and Obstetrics for March, 1913. The vast majority had kept but scant histories, and had finally lost track
of their patients, so that at the present moment few surgeons in the country have any adequate idea of what their labours have accomplished. Do let me urge upon you the systematic recording of every cancer case, the employment of the most thorough operation in these cases, and the tabulation at yearly intervals of the results. You will thus continually improve your methods, will grow more enthusiastic in your campaign against this dread malady, and will at the same time give valuable data to your colleagues in the profession.

The aim of our cancer campaign committee was to stimulate a wide-spread interest in the subject among the laity. Its labours have already borne fruit. Within the last few weeks a most representative body of New York laity, both men and women, have joined forces with the medical profession in the formation of the American Society for the Control of Cancer. This committee is assured of excellent financial backing, and is bound to be a great factor for the dissemination of knowledge concerning cancer.

We must not overlook the pioneers in publicity. Dr. J. H. Carsten, of Detroit, Michigan, has for years been doing yeoman work in his state, Dr. John G. Clark, Dr. F. F. Simpson and Dr. J. M. Wainwright, in Pennsylvania, Dr. S. Leigh in Virginia, Dr. F. H. Jackson in Maine, and there are a host of others whose names I would like to mention. I would also mention the splendid work of the Council of the American Medical Association in publishing instructions under the chairmanship of Dr. H. B. Favill.

I would strongly urge upon the Canadian Medical Association, the most representative body of Canadian physicians, the advisability of at once appointing a cancer campaign committee for Canada. This could work independently or in close co-operation with one of the cancer campaign committees of the United States.

Much money has been given by philanthropic people for the study of the cause of cancer. Whether the aetiology of cancer will soon be discovered or not is problematical, but in any event the people of the country should be made thoroughly cognizant of the early symptoms of cancer and of the fact that many may be cured by early operation. I can imagine no gift that would yield the philanthropist a greater return than the satisfaction of knowing that as a result of his munificence thousands of lives of cancer patients had been saved by prompt operation.

You in the Dominion have the wealth, the broad-spirited men, and the thoroughly competent surgeons, see to it that in the near future the cancer results of Canada are equal to if not better than those of any other country.
THE CANADIAN MEDICAL

THE DIAGNOSIS AND TREATMENT OF ACUTE MASTOIDITIS

BY GEORGE H. MATHEWSON, B.A., M.D.

In the course of my work I have found that a great diversity of opinion still exists among the general practitioners in this locality as to the nature, the gravity, and the treatment of mastoid disease, and I have been forced to the conclusion that some effort should be made to put before them in concrete form the current teaching of the otologists. This is my excuse for introducing so wellworn a subject on the programme of this society.

By way of illustrating the divergent views of the family doctors, let me give you a few data. Not a few physicians were of the opinion, and strongly held to it too, that in cases of recent otitis media where swelling and fluctuation developed behind the auricle, there was no great danger or need for operative interference since there was no marked elevation of temperature. Other men pinned their faith on the presence of swelling of the tissues behind the auricle, holding the belief that in the absence of such swelling there could be no mastoiditis. A smaller number again expected a successful operation to be performed in cases which, when brought to the hospital, had definite symptoms of meningitis. In one case where the symptoms, including swelling behind the auricle, were clearly to be seen, the family physician agreed with the diagnosis but wished to defer the operation for six weeks until the patient should be in better condition. Another physician insisted that the very large fluctuating mass behind the auricle in his patient was caused by air which had come from the Eustachian tube, while still another put down the pain about the ear to neuralgia and had the patient’s teeth extracted. I bring these few facts before you to show what some of the practitioners think on the subject and not with any idea of censuring them, but in the hope of coming to a clearer conception of the matter.

To start at the beginning, what is mastoiditis? It is an inflammation, not necessarily a suppuration, of that part of the temporal bone that is called the mastoid process. From the anatomical preparations which I have brought with me [specimens

*Read at the meeting of the Montreal Medico-Chirurgical Society, May 16th, 1913.
hown,] you can easily see that the middle ear is directly continuous, through the aditus, with that large cell in the upper part of the mastoid, which is known as the mastoid antrum. This antrum again is in communication with the other cells of the mastoid. The mastoid then is a sort of annex to the middle ear. Such being the anatomical relations between the middle ear and mastoid, it is evident that an acute otitis media can hardly occur without some involvement of the mastoid cells, and it is generally conceded that in all severe cases of acute otitis media the mastoid participates to a certain extent. The mastoid involvement is, however, usually slight and clears up without special treatment as the otitis becomes less acute.

In a small proportion of cases the mastoid is severely inflamed, and in a certain proportion of these again the inflammation goes on to suppuration. If suppuration occurs in the mastoid process, the necrotic focus is not necessarily in the mastoid antrum, but may be elsewhere, as in the tip, while the antrum is apparently normal. One usually finds the greater part of the process involved. Acute mastoiditis in the great majority of cases arises as a complication or sequela of an acute or subacute suppurative otitis media. While the temporal bone is often invaded during the course of a chronic suppurative otitis media, the resulting condition is very seldom a simple mastoiditis but rather a slow carious process in the roof of the tympanum or of the aditus or antrum with the formation, in most cases, of cholesteatoma. This carious disease may invade the labyrinth or the meninges, or produce cerebral or cerebellar abscess or sinus thrombosis, and very often gives but slight indication of its advance until the symptoms of its extension are all too clear, and it is too late to save the patient. In chronic suppurative otitis media operation should be undertaken before the occurrence of serious symptoms.

We have not the time at present to discuss all the complications of middle ear disease, so with this brief reference to the possible results of chronic suppuration, let us return to the consideration of that form of mastoid disease that usually results from acute otitis media.

Acute mastoiditis, then, resulting from, or at any rate accompanying, suppurative middle ear disease, is the form of mastoid disease that is commonly seen, and it is of vital importance that the family physician should be able to diagnose it early, for in its incipient stages it can often be aborted, and even if that happy result be not obtained, an early operation will lead to prompt recovery in almost all cases.
Primary mastoiditis, that is, a mastoiditis that is not secondary to middle ear disease, has been described, but it is very rare. I have never seen such a case. I have, however, seen five or six cases which might have been mistaken for primary mastoiditis since the drum membrane and middle ear were normal at the time when the symptoms of mastoiditis became evident. In some of these cases I had seen the patient while the middle ear disease was active, and in the others, all of which were young children, the parents gave the history that there had been a discharge from the child's ears within a short time. The presence of an acute or subacute otitis media, then, may be considered as almost essential before one can make a diagnosis of acute mastoiditis. In this connexion, I should like to point out that a case of otitis media should show signs of improvement within a few days of its onset, especially if the drum membrane has ruptured, so that, if improvement does not take place, the attending physician should be suspicious of some complication, especially mastoiditis.

The symptoms of acute mastoiditis are: (1) tenderness on digital pressure on the mastoid process; (2) pain in the mastoid region; (3) oedema and redness of the soft parts behind the auricle, in some cases abscess; (4) prolapse of the postero-superior wall of the membranous meatus near the drum membrane; (5) the presence of an excessive amount of purulent discharge from the ear, especially when the pus is of creamy consistence; (6) elevation of temperature.

To my mind the most important of these symptoms is the presence of tenderness on pressure over the bone. This tenderness may be elicited in all parts of the mastoid in some cases, while in others, the tenderness is limited to certain areas only. The points where tenderness is most likely to be found are, first, over the site of the antrum that is just behind the external meatus; secondly at the tip of the process; thirdly, and much less frequently, at the spot where the mastoid emissary vein perforates the bone, that is, about an inch posterior to first point just mentioned.

The tenderness is of course due to an osteitis, or a periostitis of the underlying bone. The presence of tenderness does not mean that operative interference is necessary, but the persistence of tenderness after the use of proper antiphlogistic treatment does. In many cases of suppurative middle ear disease there is a moderate degree of mastoid tenderness, but this usually disappears promptly when the middle ear condition becomes less acute. Just here it may be worth while to bring to your notice that there are hysterical
persons who may claim that pressure on the mastoid is painful, in
which contingency we must depend on other symptoms. The
condition that is most apt to lead one astray is furunculosis of the
meatus. The tenderness over the mastoid which accompanies
some cases of furunculosis is not due to disease in the mastoid, but
is caused by the movement of the meatus which results from the
pressure on the soft part behind the ear, since this movement of the
meatus produces compression of the inflamed area about the fur-
uncle, and in such doubtful cases, if one takes care to employ pres-
sure without giving any movement to the meatus, no pain whatever
is elicited. Of course in many cases the furuncle can be easily
seen. It is usually possible in mastoid disease to manipulate the
auricle without causing pain, while in cases of furunculosis, the
slightest movement of the auricle is painful.

Pain in the mastoid, apart from tenderness is a symptom that
is not very constant. In some cases pain is the chief symptom,
while in others it is slight or entirely absent. If present, it is of
great value but its absence is not of much import.

Edema of the soft parts behind the auricle is often seen, but
it is usually a late symptom and we must not wait for it. If present
in any marked degree it usually indicates operation, but this is
by no means always the case. Of course, if there is a definite ab-
secess behind the ear, operation is unavoidable, but where there
is simply edema, we can still bring about resolution in a certain
number of cases. Edema is perhaps as much a symptom of
furuncle in the posterior part of the meatus as it is of mastoiditis.

Prolapse of the postero-superior wall of the meatus if present
is an indication for operation. It is by no means a common symp-
tom. It is produced by an extension of the inflammation in the
underlying bone into the soft parts.

The persistence of an excessive quantity of purulent discharge
is strongly indicative that operative interference will be necessary.
The cavity of the middle ear is of very small size and therefore it
is physiologically impossible that any large quantity of pus should
be produced in it, so that if a large quantity of pus is coming from
the meatus, it must be coming not only from the middle ear, but
from somewhere else, usually from the mastoid cells.

Elevation of the body temperature is usually found in cases
of mastoiditis, but is not a symptom which gives us much help.
In the first place, many mastoid patients are suffering from some
general disease which of itself gives rise to temperature, such as
influenza, the exanthemata, and typhoid, to mention a few examples.
Then again the height of the fever by no means bears a constant relation to the severity of the disease in the mastoid. Many very serious cases show very slight elevation of temperature. For instance in a case operated on some little time ago the temperature during a period of four days previous to the operation did not go higher than 99° and yet on opening the bone the whole process was found to be full of pus and necrotic bone and granulations, while the lateral sinus and dura mater were both lying exposed. If you have other symptoms, such as tenderness, pain, etc., the presence of an elevation of temperature strengthens the diagnosis. Great variation in temperature or persistent high temperature suggests not mastoid disease, but sinus thrombosis or meningitis, respectively. On the whole then the presence of a moderate elevation of temperature would be corroborative evidence, but its absence by no means is to be regarded as a proof that the mastoid is intact.

Of eighty-nine cases of mastoiditis on which the simple mastoid operation was performed in the General Hospital in the last three years the temperature on admission was as follows:

<table>
<thead>
<tr>
<th>Not over 98-3/15° F.</th>
<th>Not over 100° F.</th>
<th>Over 100° F.</th>
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<tbody>
<tr>
<td>27—30 per cent.</td>
<td>30—33 per cent.</td>
<td>32—35 per cent.</td>
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</table>

Or adding the first two columns together, 63 per cent. showed a temperature not over 100° F.

In most cases we have more than one of the above symptoms and here of course the diagnosis is more easily made.

It is hardly necessary to give you the reasons why mastoid disease should be recognized early and given proper treatment, but perhaps a very brief résumé will do no harm.

Its anatomical relations are such that when it is the seat of suppuration there is only one direction in which the pus can safely go, that is outward or laterally. Above lies the brain, while the lateral sinus is behind as is the cerebellum. If the inflammatory process extends to the leptomeninges, death is almost certain. If an abscess is formed in the cerebrum or cerebellum, the chances for recovery are slightly better but the prognosis on the whole is very bad. If the lateral sinus becomes infected, the prognosis is still grave, though the chances for recovery are much better than in cases of abscess. I have seen many cases of otitic meningitis, far too many, and I have operated on three, one of which recovered. I have operated on four cases of brain abscess with one recovery, and on six cases of sinus thrombosis, with two recoveries. Of
course early operation in cases of sinus thrombosis gives a much better chance for recovery.

As regards the treatment of mastoid disease, there is room for much improvement, especially in the way of prophylaxis, and in our efforts at prophylaxis we should begin at the root of the matter. We should try to prevent the occurrence and the recurrence of middle ear suppuration. This work is mainly in the hands of the family physician. In cases where there is inflammation of the nasopharynx, notably in such disease as influenza, measles, scarlatina, and diphtheria, the attendant should be instructed to use hot cleansing gargles, or to paint the nasopharynx or nostrils, or both, with 20 per cent. argyrol, etc., in order, if possible, to limit the severity of the inflammation. Then again in otherwise healthy children the occurrence of earache should not be neglected but should make one carefully examine the nose and throat, especially for the presence of adenoids and hypertrophied tonsils which in such cases should be removed.

When otitis media has already made its appearance we can very often hasten recovery and forestall possible extension to the mastoid or elsewhere by performing a paracentesis of the drum membrane. This is a very valuable procedure. If the drum membrane is bulging, or if it does not rupture early, even if it is not bulging, paracentesis should be performed. In those cases too where the existing perforation does not provide a sufficiently free exit, paracentesis is indicated. There exists among the laity, and even to some extent among the profession, a belief that once the drum membrane is ruptured, the patient’s hearing is permanently impaired or even entirely destroyed. This idea, of course, is entirely erroneous. It arose, no doubt, from the fact that in ears which have a permanent perforation of the membrane the hearing is usually impaired but the impaired hearing is due, not to the perforation, but to the damage done by the suppuration which caused it. The wound made by paracentesis causes much less damage to the drum membrane than does spontaneous rupture, and is rather more apt to heal too soon than to persist too long. The paracentesis relieves the tension within the middle ear and does good by providing free drainage. As this operation is very painful, and also because it is difficult to estimate distance properly with one eye, as one is obliged to do in operations on the membrane, a general anaesthetic is to be given in all cases. I have found nitrous oxide gas very satisfactory for these cases, as it can be given without previous preparation of the patient, and is rapid, pleasant and safe.
Even where actual mastoiditis is present we can often by proper measures bring about a cure without operation on the bone. The patient should be put to bed and given a free purge, the membrane should be incised, if good drainage is not already established, and the ear should be syringed out with hot boric acid solution every two hours, while cold should be applied to the mastoid by means of a Leiter's coil. In many cases such treatment will stop the inflammation and lead to cure. The percentage of cases which can be thus aborted varies with the epidemic, but I should say 50 to 75 per cent. of cases, if treated early, can be aborted.

If tenderness still persists after twenty-four hours, treatment may be continued for another twenty-four hours, but by this time if there is no marked improvement, operation is necessary. If there is an abscess or a fistula over the mastoid when the patient is first examined, the use of this abortive treatment is out of the question, and operation is the only recourse. The same is true in those cases which present extensive prolapse of the postero-superior wall of the meatus.

With regard to the length of time after the onset of the middle ear suppuration at which serious mastoid involvement may occur great variations are seen. The majority of cases in my experience arise in from ten days to eight weeks. I have seen quite a number where operation was undertaken within a week of the onset of the middle ear trouble in which very extensive destruction had already taken place in the mastoid.

I have tried to get statistics as to the frequency with which mastoiditis complicates recent otitis media, but have not as yet been successful. Our hospital statistics are useless since most of the cases we see are the severe ones. From the statement of busy practitioners as to the rarity of mastoiditis among their patient's coupled with the fact that suppurative otitis media is a very common disease, and in the light of my own experience, I am inclined to think that the proportion is not greater than 1 to 500, and this is probably overstating it.

When mastoiditis has been diagnosed, how long should one wait before operating? I think that once one is sure that the disease cannot be aborted, operation should be undertaken at once.

In conclusion, bear in mind that the simple mastoid operation in skilled hands exposes the patient to very slight risk, while the evils which may result from extension of mastoid disease to the neighbouring parts are so great that in case of doubt it is infinitely better to operate, and thus settle the question on the safe side.
THE DIAGNOSIS OF TUBERCULOUS BRONCHIAL AND MEDIASTINAL GLANDS

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That the diagnosis of tuberculosis of the bronchial glands is made so infrequently is my excuse for presenting this paper. The condition is such a frequent one that we should hear the term used much more often than we do. Practically all children with tuberculosis have these glands involved. In many the infection is localized within these glands. If the diagnosis can be made in this stage much can be done to save the child from extension to other organs, and from a generalized tuberculosis.

Historical. Barthez and Rilliet in 1843 wrote, "La tuberculisation des ganglions thoraciques n'a été bien étudiée que dans ces derniers années."¹ The history of observations on the condition was included in a thesis by Becker,² published in Berlin in 1826. He refers to observations of Cruickshank, who drew attention to their presence in children dying of scrofula, of Camper, who noted their association with pulmonary phthisis, and of Wrisberg, who reported a child in whom the much enlarged glands had compressed the pneumogastric nerve. Senac and de Haen pointed out the presence of calcareous nodules in these glands in infants. Two years before Becker, Leblond,³ in his thesis, made a notable contribution to the subject.

Louis, in his first edition (1825), scarcely mentions involvement of the bronchial lymphatic glands, but in his second edition (1843)⁴ mentions its frequent occurrence, and that in children they are more frequently involved than are the lungs. Laennec (1826) refers to the common occurrence of cretaceous matter and tubercles in the bronchial glands, and devotes a short chapter to their diseases. Clarke devotes several pages to a consideration of the disease under the name of infantile consumption. He considered that the diagnosis should be made when one found a child showing hectic fever, cough, loss of weight, if careful examination revealed no changes in the lung or the mesenteric glands.⁵ Later, Eustace Smith
wrote extensively upon the subject, paying special attention to symptoms and physical signs.

In more recent years there have been many valuable contributions to the subject, more especially pertaining to methods of diagnosis through percussion, auscultation and the use of the x-ray, while the symptomatology has been rather better defined. Our gross pathology and studies of the incidence of the disease have been added to but little during the past fifty years, though the use of the tuberculin test has been of much help in the differential diagnosis.

**Anatomy.** The visceral lymphatic glands within the thorax are very numerous. They are usually divided into three main groups; (1) an anterior group, situated in the anterior mediastinum; (2) a posterior group in the posterior mediastinum; (3) a central group, situated about the lower part of the trachea and the divisions of the bronchi, extending into the lungs.

1. The anterior mediastinal glands occupy its upper portion. There are from four to six glands in front and above the transverse arch of the aorta. The efferent vessels from these run upwards, following smaller chains towards the junction of the internal jugular and subclavian veins, joining here the descending chains from the cervical lymphatics.

2. The posterior mediastinal glands are scattered around the oesophagus, usually on its anterior surface, behind the pericardium.

3. The central group, which we may designate the bronchial glands, fall into five main groups:

   (a) and (b). Those in the angle between the trachea and the bronchi, right (four or five in number) and left (three or four, and smaller).

   (c) An inferior group, in the angle between the bronchi, below the bifurcation (ten or twelve in number).

   (d) and (e). The right and left interbronchial glands, occupying the angles of division of the bronchi, down as far as divisions of the fourth order. These are sometimes called pulmonary glands; they are situated deep in the pulmonary tissues.

The deep lymphatic vessels of the lung form a net work around the alveoli, follow the vessels and bronchial tree, terminating in the pulmonary lymphatic glands, which are situated along the walls of the smaller bronchial tubes and in the angles of their divisions, about forty in the right lung and thirty in the left. The efferent vessels from these glands join with the superficial lymphatic vessels and end in the central group of glands, which are clustered about
the roots of the lungs and lower portion of the bronchi and trachea. Those from the right pass through the mediastinal glands to the right lymphatic duct, those from the left side join the thoracic duct.

Frequency of Involvement. It is generally acknowledged that all children who are tuberculous have tuberculous bronchial glands. In Canada over two thousand five hundred children die of tuberculosis each year. How many thousands have it without fatal termination, we do not know. No extensive studies have been made in Canada as to the extent of tuberculosis in children. In the European cities infection is rife; from the fourth to the eleventh year over half are tuberculous. Of nine hundred and twenty children dying from all causes in a Paris hospital five hundred and thirty-eight, or nearly 60 per cent., showed gross tuberculous lesions at autopsy. Tuberculosis of the bronchial glands is then a disease which must be considered when there has been known exposure, or in children who have chronic cough or ill health without apparent cause.

Pathology. We can best understand what changes take place in the bronchial glands, and the effects upon surrounding viscera, if we recall the changes we so frequently see in the cervical lymphatics, which are more accessible for observation. We may have all stages of tuberculous disease, discrete or conglomerate tubercles, caseation with little or much swelling, calcification, or rupture and discharge of the contents of the gland, with healing and chronic sinus formation. The glands may rise and fall in size with inflammatory conditions of the mucous membrane of the bronchi and alveoli, causing pressure symptoms which are later relieved. The glands will at times increase in size to that of a pigeon’s egg or even a hen’s egg.

We may have mixed infection complicating tuberculosis.

These glands are the true centres of infantile tuberculosis, from which the disease may extend in many ways, by direct spread into contiguous pulmonary tissue, by retrograde spread into the lungs, there being a peribronchitis preceding the pulmonary infection, caseation and rupture into a bronchus causing cough and expectoration, with perhaps a fistulous opening persisting with varying amounts of secretion, or by inhalation a caseous pneumonia may result. Again, the rupture may take place into the blood stream, causing meningeal or generalised tuberculosis, or if into a pulmonary artery a disseminated pulmonary tuberculosis may result.
Symptoms. These fall into three groups: (1) Constitutional or toxic; (2) those due to pressure on neighbouring structures, (3) those due to adhesions to neighbouring structures with subsequent perforation.

The constitutional symptoms are those of a tuberculosis of the glands in any other situation, those long known under the term scrofula. The pressure symptoms may be various, but it is sufficient to recall that we may have slight or great pressure upon the trachea, upon either bronchus or its larger divisions, upon the aorta, superior vena cava, innominate vein, vena azygos major (terminal portion), pulmonary vessels, upon the pneumogastric nerve on either side, or upon the recurrent laryngeal branch, particularly the left, or other branches.

Pressure on the parenchyma of the lung may also result, and the oesophagus may be compressed. Rupture of a caseating gland may occur into a bronchus, the trachea or the lung; this is not uncommon. Rupture into a vessel perhaps accounts for miliary spread, for in practically all cases of meningeal and generalized tuberculosis, we find caseating bronchial glands. Some rare cases of fatal haemorrhage have been recorded, as also rupture into the oesophagus, while rupture into the pleura has caused pneumothorax.

Toxic Symptoms. The onset is usually insidious, the toxic symptoms developing gradually and in irregular order, those most frequently met being loss of appetite, languor, disinclination to play, easily tired, irritable temper, diurnal drowsiness, anæmia, stationary weight or actual loss, one or many of these without obvious cause. Temperature observations should be made with due allowance for the higher normal temperature of children. It is often markedly irregular in character. Night sweats are at times a marked feature.

Pressure Symptoms. These will of course vary with the amount of pressure. Vagus pressure may cause cough and vomiting; if the recurrent branch is affected, hoarseness may be present, or even a recurrent laryngeal paralysis of the cord; sympathetic pressure may cause dilatation of the pupil on the affected side. Dysphagia in some cases has been due to pressure on the oesophagus. Pressure on the vessels may cause various symptoms from a partial stenosis.

The more common pressure symptoms are those referable to the bronchi, cough (or partly vagus), obstructed respiration, dyspnoea, asthmatic attacks, bronchitis. The cough will vary
with the many conditions which may produce it. A very typical cough is one which is paroxysmal and spasmodic in character, suggestive of that of pertussis, but rarely so prolonged or so severe. When no bronchial secretion is present it may partake of a dry brassy character.

*Physical Signs.* These include such changes as the following:

(a) Inspection. Anæmic and obviously out of health, a frail delicate child, though in many cases a child may be a picture of good health. Unilateral dilated veins may be present. Slight puffiness of the face and eyelids, due to venous obstruction, may be present. Unequal expansion of the apices is to be looked for, and unilateral or bilateral flattening and retraction.

(b) Palpation. Petruschky has pointed out the occurrence of tenderness over the upper thoracic spines, more especially the fifth. Tenderness on percussion over the manubrium and costal cartilages is also suggestive. At times glandular enlargement may be made out by deep palpation in the suprasternal notch and behind the clavicle, the patient also being asked to cough.

(c) Percussion. Dulness over the manubrium may be due to enlarged glands, but the thymus may persist and cause the dull note. More valuable is percussion in the right, less so in the left, interchondral spaces, especially the first and second. This dulness is produced by enlargement of the anterior mediastinal group. Spinal percussion is of value. Normally the first to fourth thoracic vertebrae are dull on percussion, below this resonant. Dulness extending to the fifth and sixth is not normal, and suggests mediastinal tumour. Paravertebral percussion may show interscapular dulness from the second to the fifth dorsal spines.

(d) Auscultation. Bronchial breathing and bronchophonic voice sounds are to be looked for over the areas of paravertebral dulness. Stenotic murmurs may at times be present over one root or the lower lobe.

May, Stoll, and others have directed attention to the acoustic phenomenon described by D'Espine. To elicit this the patient is asked to whisper "one, two, three," or "three, thirty-three," while the stethoscope is applied over the fourth, fifth, and sixth thoracic vertebrae; bronchophony is distinct, and one may hear the final "e" of the "three" prolonged for an appreciable time after the voice stops, or even hear the "three" as a disyllabic word; at times this may be heard as low as the eighth.

Weak breath sounds over the whole of one lobe, especially the right lower lobe, if persisting over several examinations, suggest pressure upon a bronchus.
The systolic murmur described by Eustace Smith\textsuperscript{10} heard over the manubrium sterni and below the jugular bulb, usually more marked with the head retracted, has long been considered pathognomonic, but it is heard frequently in children apparently well, and who are only anaemic, and therefore no reliance should be placed upon it.

\textit{Rales.} Miller and Woodruff\textsuperscript{11} consider the presence of crepitant \textit{rales} in the fourth, fifth and sixth interspaces in the mid-clavicular line very suggestive of tuberculosis. These are not to be confounded with the crepitations so often present near the costal margin in the inferior axillary space, which may be due to atelectatic lung.

Lowman\textsuperscript{12} has pointed out that there is a collateral inflammation of the bronchi in children with tuberculous bronchial glands, which is apt to be recurrent in the winter, persistent, characterized by general or localised moist \textit{rales}, and the whole process gives rise to the impression that there has been invasion of the lungs. On the contrary this may clear up in a short time, often with a short residence in the country. With a history of tuberculosis in the home this clinical picture may be mistaken for a pulmonary tuberculosis, and he appeals for continuous observation of these cases as more important than percussion and auscultation in arriving at correct conclusions. These \textit{rales} frequently recur at a point where a pulmonary tuberculosis may be highly improbable.

\textit{The x-ray.} The use of the \textit{x-ray}, either using plates or the screen, is extremely helpful. Increasing experience leads one to express the opinion that any extensive degree of glandular involvement can be diagnosed by the ordinary means of physical examination carefully applied, yet such a master of the art of physical diagnosis as Minor\textsuperscript{13} has said he has found "that in diagnosis of tuberculosis of the bronchial glands the \textit{x-ray} examination has gone ahead of any physical signs, and is the most reliable procedure at our command for the diagnosis of this condition." And he points out that this procedure also gives much information as to the progress of the infection from these glands into the substance of the lungs. Enlargement of the thoracic glands sufficient to throw a shadow on the plate, or to produce physical signs, may be due to other diseases, and a tuberculin test is desirable to assist in making a diagnosis.

\textit{Tuberculin Test.} The von Pirquet reaction is the most useful. One must be careful in drawing deductions from its use in adults and older children. A positive reaction means the presence of
tuberculosis at some point. A negative reaction does not exclude tuberculosis. At the tuberculosis clinic at the Hospital for Sick Children, a number of cases of undoubted tuberculosis have not reacted. I am inclined to think it may be absent; (1) in some quiescent closed cases; (2) in some advanced active cases; (3) in certain other cases which for the present we may term refractory.

But in most cases in young children the von Pirquet test is a reliable guide to the presence of tuberculosis, yet it must be considered only in conjunction with our findings, established by all means of diagnosis at our disposal.

References:

2. BEcker—De glandulis thoracis lymphaticis; Berlin, 1826.
4. Louis—Recherches sur la Phthisie; Paris, 1843.
5. Clarke—"A Treatise on Pulmonary Consumption and Scrofulous Diseases; 1838, p. 60.
8. Stoll—ibid., 1910, 252.
10. Eustace Smith—Lancet, August 14th, 1875, 246
FREE, SUPPURATIVE PERITONITIS DUE TO PYOSALPINX

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THIS article is not intended to do more than to give a brief history of a few cases in order to emphasize some special features. It is not proposed to discuss symptoms, diagnosis and treatment in all their bearings. One weakness lies in the fact that attempts at examinations of cultures miscarried in all except three cases. In future this serious defect must be remedied. The clinical and gross pathological features, however, probably have some value.

Case 1. Winnipeg General Hospital, No. 2021, 1908. Mrs L. B. Married about seven years. Two healthy children six and three years old. Not pregnant since. Called to see her May 12th, in the afternoon. She said she was taken suddenly ill in the forenoon. She now had quite evident general peritonitis, and a diagnosis of a ruptured appendix was made. An incision was made splitting the fibres of the external oblique and its fascia and cutting through the internal oblique. A large quantity of free pus was found. The appendix was somewhat adherent but was clearly not the cause of the trouble. It was removed. The pelvis was explored and pus was found oozing from both tubes, neither ovary being involved. A median incision was made to reach the left tube. The lateral incision was sewed up. Both tubes were quite free from adhesions and not at all distended with pent-up pus. Both tubes were removed. She left the hospital on the fourteenth day.

Case 2. Winnipeg General Hospital, No. 719, 1909. Miss G. C., stenographer. Patient has had considerable pain at menstrual periods for several years. On two occasions was ill enough to call a doctor. On one of these occasions is said to have had some temperature. On February 6th, she went to the office as usual, and was in her usual health. About an hour after arriving there she was suddenly seized with abdominal pain which completely incapacitated her. She was taken home. Seen by Dr. O'Neil at 2:30 p.m., when she was found with a temperature of 101°, and very marked rigidity of the lower abdomen, particularly on
the right side. We saw her together one and a quarter hours later when a diagnosis of general peritonitis was made, probably due to a ruptured appendix. Immediate operation was advised and patient moved to the hospital. An incision was made along the outer border of the right rectus, when pus oozed out freely. The appendix was practically normal and was not removed. The right tube was found oozing pus from the unsealed fimbriated extremity. The side of the tube was adherent to the ovary. There was no dilatation of the tube and no abscess cavity. The tube and ovary were removed. The left tube was brought far enough into the wound to demonstrate pus oozing from the unsealed fimbriated extremity. A new incision was made in the median line. The ovary was nearly normal. The tube was removed but the ovary was not. The quantity of pus in the abdomen was not large. Some coils of small intestine were quite inflamed, but others were nearly normal. The temperature on admission was 101.4° and pulse 120. By 8:00 p.m. the temperature was 97° and pulse 72. After this the temperature never went above 99.2° and pulse never over 96. She left the hospital on the seventeenth day.

**Case 3.** Winnipeg General Hospital, No. 1694, 1909. Mrs. J. F. R., no occupation. Patient was admitted April 21st, and died May 3rd. This patient had exposed herself to infection over a period of many years. She had no children and never was pregnant. First seen by us on admission to the hospital; referred by Dr. M. S. Inglis. There was evident pelvic infection with considerable discharge from the uterus. A swab taken from the uterine discharge showed a culture of streptococci. A swab from the vagina showed various bacteria but no gonococci. A swollen Bartholin’s gland was incised and a culture showed streptococci. On April 22nd, the pelvis was drained through the vagina, a rubber tube being stitched in. She continued to get worse, and the abdomen was opened a few days later. Thin pus was absolutely general throughout the abdomen. Both tubes were in a chronically inflamed condition, and one of them had ruptured. The patient died on the eleventh day after admission. In this case a laparotomy should have been done at first. However, there were lacking the tenderness and rigidity usually found in the presence of pus free in the abdominal cavity.

**Case 4.** Winnipeg General Hospital, No. 1082, 1910. Mrs. G. R. P., housewife, married three years. Said menstruation had been regular. Was taken suddenly ill at 10:10 a.m., with pain, all in lower part of abdomen. Vomited several times. First seen
by me in the evening. There was undoubted peritonitis and a
diagnosis of ruptured appendix was made. She was removed to
the hospital. An incision was made over the appendix and it was
found normal. Pus was free in the abdominal cavity in large
quantities. From both tubes pus was oozing from unsealed ends.
The tubes were little larger than normal but inflamed. Both
tubes were removed, but neither ovary. There were no adhesion.
about the tubes or ovaries. Both incisions were drained in this
case. She left the hospital on the sixteenth day, in good condition.

Case 5. Winnipeg General Hospital, No. 1364, 1910. Mrs.
C. M., housewife, mother of five healthy children. She was seized
with acute lower abdominal pain at 10:00 a.m., and in a few min-
utes was completely prostrated. When seen about an hour later,
there was a most clearly defined general peritonitis. She had not
menstruated for three months. Vaginal examination revealed
a pregnant uterus, but no other mass in the pelvis. There was
practically no dilatation of the os. At this time she was con-
siderably shocked, temperature 102° and pulse 120. She had no
upper abdominal pain whatever; there was vomiting from the
moment the pain came on. A diagnosis of general peritonitis
due to pus tubes was made, and she was moved to the hospital in
about two and one-half hours. On the way she aborted in the
stretcher, the foetus being found, when she came directly from
the ambulance to the operating room. In spite of the abortion
we immediately opened the abdomen in the median line. There
was a large quantity of pus quite free and unconfined. Both tubes
were somewhat enlarged and pus was issuing from the extremity
of the left tube only, but no rupture was present. Both tubes
were removed. The patient left the hospital on the fifteenth day
in good condition.

Case 6. Winnipeg General Hospital, No. 1024, 1912. Miss
J. E. R., nurse. Was called to see her at midnight, December
20th. She had had pain in the abdomen before rising that morning
and was unable to work. Went to bed. Quite ill all day. Said
her menstruation was always regular and normal. When first
seen there was no doubt whatever about there being general peri-
tonitis. There was more pain and tenderness on the right side than
on the left. Here again a diagnosis of ruptured appendix was
made. A lateral incision revealed an adherent appendix which,
though not the origin of the very profuse pus, was removed. Again
the tubes were found free from adhesions, not markedly enlarged,
and, with pus oozing from the unsealed ends. The lateral incision
was closed after a median one was made. The tubes were both removed. The ovaries were not. In this case both from a smear and a culture streptococci were found, but no other organism. The patient was in the hospital eighty-five days.

Case 7. Winnipeg General Hospital, No. 3996, 1912. Maggie B., no occupation. Had been in a hospital a year before with pelvic inflammation and refused operation. Had had a miscarriage before this time. Three days before entering the hospital this time she had some feelings of discomfort in the abdomen but went about as usual. About noon, while out on the street, she was seized with extremely severe abdominal pain and vomited. She fell in the street and was brought to the hospital by the police. The temperature was 103.2° and the pulse was 110. The abdomen was very rigid over the lower half. There was marked tenderness on vaginal examination and the pelvic organs were very fixed. A diagnosis of free pus in the abdomen due to ruptured pyosalpinx was made. Immediate laparotomy by median incision revealed both tubes involved. The right one was adherent to the ovary. Through a rupture of the tube, pus was escaping. The round ligaments were necrotic. The uterus we fixed to the abdominal wall. It should have been removed. The temperature dropped to normal the following day. She was discharged on the sixty-second day, having had a very slow and unsatisfactory convalescence.

Case 8. Winnipeg General Hospital, No. 225, 1913. Miss A. K., no occupation. This patient was a Galician and could not talk English, so that we had to trust to the physical findings. The temperature on admission was 100° and the pulse rate was 120. She had a vaginal discharge of blood. There was marked pain in the lower abdomen and extreme tenderness and rigidity, most marked over the right side. Vaginal examination did not reveal anything particular; there was much less tenderness by vagina than over the abdomen. Immediate operation. The evident peritonitis was thought probably due to a ruptured appendix and the incision was made accordingly. The appendix was somewhat adherent chronically, but was clearly not the cause of the free pus found in the lower right quadrant. The right tube was found to be exuding creamy pus from the unsealed fimbriated extremity. The tube and the appendix were removed. The left tube was normal and was not removed. Neither ovary was involved. This case was wiped out and closed without drainage being the only one of the series to be treated by this method. In
twenty-four hours the temperature was normal. The patient left
the hospital on the fifteenth day.

**Case 9.** Mrs. B., housewife, seen March, 1912. This pa-
tient lived in a country town, and I saw her on the fourth day of
her illness. She was confined at full term, and labour was said
to have been normal. Immediately after labour, however, she had
a temperature of 100° and began having abdominal pain and
distension. Vomiting soon began, but was not very pronounced.
When seen by me there was very clearly a general infection of the
abdomen. The temperature was 100° and the pulse ran from 120
to 150. Her face had a pinched look, and operation was not ad-
vised because she really did not look as though she would survive.
She died two days later. A postmortem was not held. This
case I regard as a pyosalpinx ruptured during labour.

**Case 10.** Mrs. K. B., housewife. No children. Seen by
me in consultation four days after confinement. Labour was
said to have been normal. Immediately following labour she
complained of lower abdominal pain. The usual peaceful slumber
following the trying ordeal did not come to her. As time went on
she became bloated and vomited somewhat. Abdominal dis-
comfort was interpreted as the result of the bowels not moving;
efforts to get them to move failed utterly. She ran some tem-
perature, but not very high. Her pulse got rapid and thready. When
seen by me she was in very bad condition. There was much
fluid in the abdomen, and she looked like a seven months pregnant
woman as far as the abdomen was concerned. She was in distress
more than in pain. There was not much tenderness or rigidity of
the abdominal wall. A diagnosis of general peritonitis was made.
A general anaesthetic seemed clearly contra-indicated. Under the
use of local anaesthesia the abdomen was drained and a very large
quantity of thin pus ran all over everything. She died the follow-
ing morning. No postmortem was held. This case is also re-
garded as one of pyosalpinx ruptured during labour.

**Case 11.** Mrs. M., housewife. First confinement March
2nd, which was normal as far as delivery was concerned. Follow-
ing this convalescence was normal, except for mastitis, which did
not suppitate. She had indefinite pain in the abdomen at the end
of five weeks after confinement, when I saw her for the first time.
She had a normal temperature and normal pulse and had only a
little discomfort over the right lower quadrant. There had been
a question of a diagnosis of appendicitis but this we ruled out.
Two weeks later I saw her again for the second time. There was
now a large mass to the right of the uterus, very easily made out by bimanual examination. She still had a normal temperature. She was removed to St. Boniface Hospital two days later and a large, right-sided pyosalpinx was found. The abdomen was not drained. She made an excellent recovery and left the hospital on the tenth day.

It is worth noting that in six of the ten cases where pus was free in the abdominal cavity, the fimbriated extremity of the tube was not sealed up. The pus was issuing from this unsealed end, and not from a rupture of an ordinary pyosalpinx. As Bonney suggests, there may have been agglutination of the tube which had been overcome by increased tension within the tube. Certainly it could have been nothing more than agglutination for there were no signs of adhesions, and no infolding of the fimbriæ. The operation in these cases consisted in removing the tubes and leaving in a rubber drainage tube, except in Case 8. Here the pus was wiped out and the abdomen closed completely. In the other cases no irrigation or wiping was done. We prefer the simple operation of removing or repairing the lesion which is the source of infection. Then put in a rubber drain and close the wound about the drain. No gauze packing or gauze wick was used in any of these cases. In all these cases, except No. 6, where the streptococcic infection was found, and in No. 7, convalescence was smooth and rapid, and ultimate recovery was practically perfect. Case No. 6 clearly had a considerable amount of intestinal adhesions following opera-
tion. However, there was no later pent-up collection of pus. A letter received just ten days before this meeting, says she is now in fair health and still improving, though she still has occasional intestinal cramps.

Cases 3 and 7 were in women who had exposed themselves to many kinds of infection over many years. No. 3 was well nigh moribund when seen. She died. No. 7 would most likely have died had she not, through past years, acquired an immunity to most ordinary organisms to which such women are exposed. Her convalescence would probably have been much smoother and more rapid had the pelvis been cleaned of all the organs. And when the wound healed she still had considerable pain.

Regarding the two cases diagnosed as pyosalpinx ruptured during labour, one is inclined to think these cases must be spotted early and must be operated on as soon as diagnosed. Both cases were beyond operative assistance when seen. One grants without argument that little could be hoped for in Case 10 by merely drain-
ing the abdomen. In the light of present knowledge, if similar cases present themselves in the future, provided they are seen early enough, a laparotomy will be done, and the uterus, tubes, and ovaries removed.

One striking feature of Case 11 was that the pelvic veins were the size of one's little finger and were thrombosed for four or five inches from the broad ligament. We have never seen such large veins in any other pelvic case. This case is cited because she seems to have escaped, by mere chance, the fate of the two cases just mentioned. We are inclined to think that the condition was made much worse by labour, though she luckily escaped rupture. If pyosalpinx can be diagnosed before, say, the sixth month, removal at that time would be much to be preferred to letting the woman take a chance on labour. As to what to do if diagnosis is made during the last two and a half months, that is a difficult question.

Case 13. After this paper was completed, another case went into St. Boniface Hospital, June 17th, 1913. Mrs. H., married eight years. One premature birth at 8 months, seven years ago. Miscarriage at 3 months, three years ago. Has not been pregnant since. She said she has had much pelvic pain during last six years; first on the left side, and later on the right side. When first seen with the present illness, she was too sick to go much into past history. Her husband admits having had gonorrhoea. The present illness began about 9 p.m., June 16th, with generalized pain in the abdomen. When seen by Dr. Bruce Hill, the abdomen was not specially tender to the touch, nor was there rigidity. At 11 p.m., i.e., only two hours later, she was seized with agonizing pain in the abdomen. She was in great pain all night. She did not vomit. They did not call Dr. Hill till next forenoon, and she was at once removed to the hospital where I saw her at 1 p.m., for the first time. The temperature was then 101°, the pulse 120, and the respirations about 40. The respirations were exactly like those occurring in diaphragmatic pleurisy. She was in intense pain, referred chiefly to the region of the diaphragm and liver. The abdomen was as much like an oak plank as any I have ever seen. One simply could not get through the wall by palpation. The case was diagnosed as general peritonitis, due to leaking pus tubes. An incision was made in the median line. The appendix was slightly adherent. There was general redness over all peritoneal surfaces. There was a little pus amongst the coils of intestine. There were no adhesions anywhere in the pelvis, or amongst the coils of
bowel. Both tubes were slightly enlarged in the middle and each was leaking thick, creamy pus from the wide open fimbriated extremity. A swab was taken from the general peritoneal cavity, and one from the right tube. Both tubes were removed, but neither ovary. A split rubber tube was left draining the pelvis behind the uterus, and the wound closed about it. When I left the city she was doing very well. She said, quite positively, that the first twenty-four hours after the operation were decidedly more comfortable than the last twelve hours before it.

The following candidates have passed the final examinations of the College of Physicians and Surgeons of Ontario; S. L. Alexander, Cavalier, North Dakota; F. C. Anderson, Kingston, Ontario; H. H. Argue, Shawville, Quebec; W. H. Birks, Dundas; C. A. Brisco, Chatham; F. A. Brockenshire, Talbotville, Ontario; A. B. Brodey, Toronto; C. P. Brown, Paris; L. L. Buck, Kepler; J. F. Burgess, Owen Sound; J. A. Campbell, Belmont; J. P. Selby, Courtright; K. E. Cooke, Binbrooke; T. D. Cumberland, Rosemount; C. L. Douglass, St. Thomas; R. O. Frost, Kinmount, Ontario; R. W. Glidden, Union; T. J. Glover, Toronto; G. G. Greer, Peterboro; A. A. Halliday, Chesley; E. R. Hastings, Stouffville; W. J. Hicks, Kara; G. L. Hodgins, Lucan; B. R. Keller, Wallaceburg; W. D. B. Leitch, South Edmonton, Alberta; F. J. Livingston, Hamilton; A. F. MacAulay, South London; J. L. Mahoney, Stamford; T. A. Malloch, Hamilton; R. M. Maraud, Windsor; J. K. Mossman, Petrolia; A. E. McCullough, Greenbank; T. H. McKillip, Toronto; W. F. MacKnight, Ingle; W. S. Otton, Leamington; R. C. Phelps, Merritton; S. A. Richardson, Wallaceburg; H. P. Robinson, Kleinburg; T. M. Savage, Guelph; R. R. Scott, Perth; H. A. Snetsinger, Colborne; G. N. Urle, Deloraine, Manitoba; C. K. Wallace, Kemptville; F. M. Walker, Stony Creek; Edward White, Windsor; J. H. White, Ottawa; Arthur Windsor, London; L. R. Yealand, London.
THE LONDON MEETING

The forty-sixth annual meeting of the Canadian Medical Association was held in London, Ontario, from Tuesday to Friday, June 24th to 27th. On three previous occasions the association had met in London, namely, in 1879, 1893, and 1903.

From every point of view the meeting was most successful. The total registration was three hundred and eighty-two, a figure which has only once been surpassed; indeed, the number of those who travelled to the meeting was considerably greater than in any previous year. Owing partly to the geographical position of London and to the distinguished Americans who contributed to the programme, we were favoured with an unusual number of visitors from the United States.

The entertainment provided by the local committee was all that could be desired, and was not allowed to interfere, as on some former occasions, with the serious business of the meeting.

The general meetings at which the formal addresses were read were open to the public, who availed themselves in considerable numbers of the privilege. The presidential address and the address in surgery were published and commented upon in the July number of the Journal. It was evident at the meeting that the views expressed by the President met with the hearty approval of his audience.

Speaking as one zealous for the honour of the profession, he pointed out defects and advocated reforms. His trenchant remarks on the methods of the manufacturing chemist were corroborated by Dr. Billings at his clinic on the last morning.
of the meeting, when, in speaking of the treatment of arthritis, he warned his hearers against the uncritical use of the many vaccines put upon the market by the drug houses. Undoubtedly a federal department of health, and a board of scientific censors such as is advocated by Dr. McCallum, would do much to protect physicians as well as laymen from their own credulity.

Dr. McCallum’s experience and reputation as a teacher lends great weight to his criticism of the overcrowded curriculum. Whether or not an attempt is made to teach more science than can reasonably be assimilated in so short a time, there is no doubt that the student learns too little of the art of medicine, and that he should receive more instruction in practical therapeutics, particularly in the physical, mental, and nutritional forms of healing. Among other reforms the President recommended the establishment of a non-teaching college for the conferring of higher degrees in surgery and other specialties, on the model of the Royal Colleges of the Old Country. When this project was discussed at a subsequent executive meeting, it was generally considered that such an institution is a desideratum. The college recently constituted in Washington aims at being international and includes a generous proportion of Canadians on its governing board. Some were of the opinion that this foundation adequately provides for the needs of our surgeons, at any rate for the present. Others, however, hold that it is derogatory to our dignity as a nation that those who desire to take higher degrees should have to seek them in London, Edinburgh, or Washington. Provision was made for a committee to study the question. Dr. McCallum is its chairman, and the matter could not be in better hands.

The addresses in medicine and gynaecology, which appear in this issue of the Journal, were given by two distinguished Johns Hopkins professors, whom we are proud to claim as Canadians.

Dr. Barker’s address dealt with the clinical significance
of the autonomic nerves supplying the viscera, and their relations to the glands of internal secretion, a subject which is as new as it is illuminating. Moreover, it was admirably presented, being spoken extemporaneously, and illustrated with lantern slides. It gave one a new conception of the mutual relations of the sympathetic and central systems in the innervation of the viscera, and outlined a practical method of studying these relations in the individual patient.

It was fitting that Dr. Cullen should take cancer as the subject of his address, for it is one that he has made his own. He told of the work of the Cancer Campaign Committee in the United States, and of the propaganda carried on under its direction in the lay press for the early recognition and cure of cancer. His suggestion that our association should appoint a similar committee, is well worthy of consideration. Dr. Cullen showed how important it is that every operating clinic should have at its immediate command the services of a highly trained—and well paid—surgical pathologist; and he also advocated more business-like methods in the management of hospitals and the keeping of case records.

A feature of the meeting was the presentation of the decidedly unfavourable report of the Committee of the Association for the Prevention of Tuberculosis on the cases treated in Canada by Dr. Friedmann. The report is printed elsewhere in this issue. Dr. Adami prefaced the reading of it by briefly outlining the events leading up to it.

There was one disappointment, the unavoidable absence of our honorary president, Dr. Roddick. It had been hoped that he might be present in person to receive a visible token of the gratitude of our association in the shape of an engrossed copy of the resolution which was passed at the Edmonton meeting, making him our honorary president for life. Dr. MacKid, on behalf of the committee which had arranged the presentation, explained that their plans had been frustrated by the fruits of Dr. Roddick's own good
works, and read a telegram which had been received by the president from Dr. Roddick, expressing his regrets that, owing to the fatigue induced by the constant strain of the long meeting of the Dominion Medical Council in Ottawa the previous week, he found himself physically incapable of undertaking the journey to London. He also expressed his thorough appreciation of the great honour that the members of the Association had done him, assuring them that he had received no distinction which he valued more highly than this. Another name which was remembered with gratitude in this connexion was that of the minister of the interior, the Honourable Dr. Roche. At a previous session a resolution was passed expressing appreciation of his valuable assistance in the establishment of the Dominion Medical Council.

A tribute was also paid to an honoured veteran whose distinguished presence and fluent oratory have graced no less than forty-three of the forty-six annual meetings. A resolution of the Executive Council making Sir James Grant an honorary member for life, was enthusiastically approved.

We would call our readers' attention to the reports of committees and sections which are published in this issue. The report of the Finance Committee shows the finances of the Association to be on a satisfactory basis. The work of the Committee on Medical Inspection of Schools will hereafter be taken up by the Section on Public Health, and we take this occasion to congratulate the committee on the three excellent reports which they have issued.

The work of the sections was unusually well conducted. The programme was excellent, and if in some sections it appeared to be too extended, in reality, by dint of opening the sessions promptly at the appointed time, it was completed in every instance. The symposia on diseases of the stomach and of the thyroid, conducted by the combined sections, were unusually interesting and instructive. A special section on x-rays was an experiment which justified
itself, the sessions being attended by some twenty members. Another innovation this year, and one which was very much appreciated, was the extending of the meeting to four days, the last day being taken up by a clinic conducted by Dr. Billings, of Chicago, and a lantern demonstration on diseases of the bones and joints by Dr. Murphy, of Chicago.

It was decided that St. John, N.B., should be the next place of meeting, and Dr. Murray MacLaren was chosen as the president-elect.

In conclusion, on behalf of the Association, we offer our thanks to the president, Dr. McCallum, the local secretary, Dr. Beal, and all the London members, for the work of which this most successful meeting was the result.

A MEDICAL COMMISSION FOR ONTARIO

On the occasion of the opening of the new General Hospital in Toronto, Sir James Whitney, in a twenty minutes' speech, discussed the subject of medical education in Ontario and made the announcement that a Royal Commission would deal with it at an early date, as the government was tired of receiving requests for further legislation from all sorts of "pathies" and faiths. He seemed to think that the Commission remedy, which has become a most popular treatment for many of the ills the province has been heir to, would prove effectual, although Mayor Hocken, in his speech a few minutes afterward, jokingly expressed the hope that Sir James Whitney would remain in power the necessary number of years to receive the report of this Commission.

To thoughtful members of the medical profession, the suggestion of the appointment of a Medical Commission just at the moment when the Dominion Council has launched itself, gives a good deal of concern, the fear being that politics, rather than the highest interests of medical education, may
receive too much recognition. The claims of the osteopaths, preposterous as they are, appeal to many men supposed to be intelligent, and it is morally certain that no stone will be left unturned by them in order to get recognition. If, on the other hand, Sir James Whitney establishes a Commission made up of men of the highest type, who know the situation and who are likely to back up the medical council and the universitites in their endeavours to make medical education in Ontario worthy of that great province, good will result, and the atmosphere will be cleared for years to come. We would humbly suggest that there is but one way to bring about the desired result, that is, establish a high standard and make all "pathies" and faddists conform to this standard. It is a simple matter to answer the query, how many of the "pathies" would remain if this rule were adopted? The eclectics have disappeared, the homoeopaths are almost extinct, and the osteopaths, chiropractors, faith healers, and other peculiar sects will cease to exist just as soon as they are forced to spend five years in study and pass examinations of the stringent kind. Under these conditions very few will be anxious to remain under the shelter of the charlatan banners. Scientific medicine has no apologies to offer for its existence and any government failing in its duty to uphold it will be guilty of interfering with the best interests of the public it serves.

TORONTO GENERAL HOSPITAL

The formal opening of the new Toronto General Hospital by the Lieutenant-Governor of Ontario, Sir John Gibson, on Thursday, June 19th, was an occasion on which those who have worked so faithfully to ensure for Toronto adequate and efficient hospital facilities may well be congratulated. The hospital comprises in all eleven buildings, connected by corridors but sufficiently segregated to avoid any probabil-
ity of cross infection, placed on grounds nine acres in extent. It can accommodate six hundred and seventy patients and it is the result of the wise and thoughtful expenditure of three million and a half dollars. The first hospital, a temporary structure, was built in Toronto, then York, in 1812, and an interesting account of the subsequent hospital development is given by Dr. C. K. Clarke, the superintendent of the present institution, in his book entitled "A History of the Toronto General Hospital." In 1818, a permanent building was constructed, and about 1820, a two-storey red brick building was erected at the corner of King and John Streets. In 1854 came the cholera epidemic and a frame structure was then put up on the Gerrard Street property. The present building is indeed a wonderful outgrowth of these simple beginnings. The surgical building and its equipment is the gift of Mr. J. C. Eaton; the outpatients' building was given by Mr. Cathra Mulock; and the emergency building, with its equipment, was given by the late Misses Agnes and Jane Shields. On behalf of Toronto University, and in consideration of the opportunities for research and study available to students of the university, the provincial government has contributed six hundred thousand dollars to the new institution.

We are publishing elsewhere in this issue the unfavourable report of the Committee of the Canadian Association of the Prevention of Tuberculosis on the results of the Friedmann treatment. The Board of Health of New York, at a meeting held on May 29th, passed a resolution prohibiting the use of living bacterial organisms in the inoculation of human beings for the prevention or treatment of disease "until after full and complete data regarding the method of use, including a specimen of the culture and other agents employed therewith, and a full account of the details of preparation, dosage, and administration shall have been submitted to the Board
of Health, and until permission shall have been granted in writing for the use of the same." This action was taken on the grounds that a so-called remedy for tuberculosis, which was being exploited in the city, "not only does not fulfil the promise of efficiency and safety under which its use was at first permitted in this city, but, on the contrary, during its administration many patients have suffered serious and unduly rapid progress of their disease." Provision, however, has been made for patients whom Dr. Friedmann himself had inoculated to continue the treatment at certain specified hospitals, and under the supervision of the Board of Health.

Bulletin No. 255 of the Laboratory of the Inland Revenue Department contains a report upon seventy-three samples of sweet spirit of nitre. Of these samples, forty-one were found to contain the legal amount of ethyl nitrite, while thirty-two contained less than the minimum quantity permitted by the British pharmacopoeia. Similar findings have resulted from two other examinations of samples of this drug, undertaken in 1908 and in 1911, the percentage of adulteration being respectively, 63, 43, and 44. The minimum amount of ethyl nitrite required by the British pharmacopoeia is one and three-quarters per cent. by weight. Of the samples recently examined, 44 per cent. contained less than this amount, 30 per cent. contained less than one per cent., and fourteen less than one-half of one per cent. of ethyl nitrite, while nearly 9 per cent. contained none at all. The opinion is expressed in this report that the responsibility for the quality of the drug should rest with the vendor and that druggists should be made to realize their responsibility in dispensing drugs which are, by their failure to meet the required standard, a serious handicap to the physician employing them. Further it is suggested that, if it is not possible for physicians to obtain this drug in such condition as the pharmacopoeia demands, either it should be removed from the pharmacopoeia altogether or the physician employing it should do so with full knowledge of its uncertain results.
For some weeks past the medical corps of Nova Scotia has been camping at Sussex, New Brunswick, under the command of Major F. S. L. Ford, M.D. A feature of particular interest is the clearing hospital, which is a new departure. These hospitals were organized last March to take the place of the two general hospitals formerly maintained. It is the intention, ultimately, to establish eight of these clearing hospitals in the Dominion. The medical corps is divided into three sections: the collecting zone, including the field ambulances; the evacuating zone, where the patients receive attention and, if necessary, are sent to the hospital; and the hospital, which consists of a large tent containing twenty-five beds, an operating tent, a dental tent, and a lecture tent wherein instruction is given in first aid. There is also a dispensary and a field and surgical equipment. Thus the immediate needs of the field are met efficiently and any overcrowding of the wards of the hospital is prevented.

A report of the United States War Department gives a gratifying account of the efficacy of antityphoid inoculation. During the previous ten months there had been only twelve cases of typhoid and two deaths among the 57,000 men composing the army. These deaths, as well as most of the cases of sickness, were of men who had not been inoculated. The typhoid rate in the army has fallen from 5.66 per thousand in 1906, and 2.32 in 1910, to 0.18 in 1912. These results cannot be accredited to improvement in the conditions of service. Such a well proved prophylactic might well be extensively used in the large railway construction camps and lumber districts of Canada. One of our colleagues in charge of a lumber district in Saskatchewan writes that he has made a hundred antityphoid inoculations, and hopes to make five hundred more. He adds that the men come and ask to be inoculated, whereas compulsory vaccination, which had previously been rendered necessary by an outbreak of small-
pox, "required a lot of help from the police." Much of the typhoid in the prairie provinces has been traced to the labourers who are brought out to harvest the crops, and it is interesting to learn that the Commissioner of Public Health of Saskatchewan, has written to the boards of health of the eastern provinces, asking that, as far as possible, the harvesters who come to the west be previously inoculated with antityphoid vaccine. The Saskatchewan Bureau of Health distributes the vaccine gratis to medical men in the province who make application for it.

Dr. Thomas Kirkpatrick Monro, professor of medicine at St. Mungo's College, Glasgow, has been appointed professor of the practice of medicine at the University of Glasgow, in place of the late Professor Samson Gemmell.

At the recent annual meeting of the Association resolutions were read expressing grateful appreciation of the services of Dr. Small and of Dr. Archibald, who resigned their offices last year. These resolutions are printed elsewhere in this issue. Dr. Small had been treasurer for no less than nineteen years, a fact which of itself bears witness to his devotion to the interests of the Association. The two years of Dr. Archibald's tenure of office as general secretary saw the establishment of the JOURNAL and the re-organization of the Association on a basis of permanent membership. These results were not achieved without great labour, and it was naturally to the secretary that a large share of the work fell.

An Institute of Hydrology and Climatology has been established at the École Pratique des Hautes Études at Paris. The purpose of the institute is the study of scientific or applied problems relating to mineral waters and climatology, and to make public the results obtained from either the medical or the scientific point of view.
An analysis has been made recently of the water from three springs in the Sinclair Pass in British Columbia, sixty miles south of Golden. These waters have been known for some time to possess curative properties in gout, rheumatism, and certain skin diseases; but, in addition to this, they show a radio-activity which, so far as is now known, is unequalled and should prove of great therapeutical value. It is believed also that radium-bearing earths occur in the neighbourhood of these springs.

The fortieth annual convention of the United States Hay Fever Association will be held at Bethlehem, New Hampshire, August 28th and 29th. The object of the association is to seek information which will relieve sufferers from this unpleasant affliction and the last annual report contains some interesting information concerning the cause and treatment of the disorder.

The secretary of the Saskatchewan Medical Association reports admirable progress in the scheme of organization which the Canadian Medical Association has in view, viz: the affiliation of county and town societies with their respective provincial associations. During the past year seven local medical societies have been affiliated with the Saskatchewan Association, namely those of Regina, Moose Jaw, Saskatoon, Battleford, Prince Albert, Wynyard, Swift Current. The secretaries of these societies are, respectively, Drs. W. A. Dakin, G. B. Bawden, T. W. Walker, Stanley Millar, T. W. Fourney, H. R. Ross, R. A. Hughes.
Book Reviews


Dr. Douglas Graham is a pioneer in America, at least, in the use of massage as a remedial measure. As long ago as 1884 he published a book upon the subject. At various times it has been revised and now assumes the present form, namely, a large volume of nearly six hundred pages, beautifully printed and illustrated. It is written by one who is a physician and a masseur. The history which Dr. Graham gives is most valuable and he has searched the literature of the ancients to demonstrate that the practice was universal. The various methods employed are described in detail, and the physician will find in the book indications for treatment as well as a description of the methods to be employed.


Ionic medication is comparatively a new thing, and information upon the method and its value has not been easily accessible. This volume is offered to the medical profession so that this want may be supplied. Dr. Lewis Jones gives a complete record of the clinical results which have been obtained by this method, and he brings evidence to show that the practice is a real addition to our means of treating disease. The best results have been obtained in superficial affections, and the author warns the profession against over-confidence in trying for results in the more deep-seated affections. But, as he says truly, there are still plenty of conditions in which the present methods of treatment admit of improvement. He protests, quite properly, against the indiscriminate uses of ionic medication by incompetent persons. Any new method of treatment is sure to be exploited by ignorant or dishonest persons, and always to the grief of the patient. The book is a succinct record of the situation as it is discovered at the present moment.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


Lewis's Pocket Case Book. Designed for the Use of Students and Practitioners. Price, 1s. 6d. net. London: H. K. Lewis, 1913.

COLLECTED PAPERS FROM THE RESEARCH LABORATORY OF PARKE DAVIS AND COMPANY, Detroit, Michigan. Volume I.


A COURSE IN NORMAL HISTOLOGY. By Rudolf Krause. Translated by P. J. R. Schmaahl, M.D. Volume I, price, $0.75; Volume II, price, $5.50. Illustrated. New York: Rebman Company, 1913.

Ophthalmoscopic Diagnosis. By Dr. C. Adam. Translated by M. L. Foster, M.D. Illustrated. New York: Rebman Company, 1913.


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A meeting of the governors of the Hamilton Hospital and the controllers of the city took place June 18th. The meeting resulted in the appointment of a committee to investigate the conditions existing at the hospital, which recently drew forth some criticism from Dr. Bruce Smith, and to report on the repairs and improvements required to put the hospital into a better condition.
Retrospect of Gynaecology

TREATMENT OF UTERINE FIBROIDS BY X-RAYS

Grauss and Tembke—Rontgentiefentherapie

Bloodless ovariectomy is the aim of x-rays in the treatment of uterine fibroma. The experimental stage is past, and definite results can now be promised in the treatment of uterine fibroma by x-rays. The introduction of the treatment came from theoretical reasoning. In 1903, it was shown that the spermatogenic cells of the testicles could be killed, or stunned by x-rays in suitable doses. Soon after this was discovered, Haberstaedter showed that the ovaries of rabbits atrophied under x-ray applications. In 1904, cases of fibroma uteri were treated with x-rays and good results were reported. In 1909, the treatment began to be used more extensively. Before that year it had remained in the hands of a few experimenters, of whom Foveau de Courmelles was the most energetic, and he was able to report success in fifty-three cases. In successful cases the haemorrhage is arrested, the menstrual period is suppressed, and the fibroid cannot be felt, or is considerably reduced in volume. The x-ray treatment is in fact a bloodless ovariectomy which brings on an artificial menopause. It is probable that the internal secretion of the ovary is not destroyed. The method as now employed is the same wherever the treatment is in use, but techniques differ. Every operator endeavours to get a large dose of x-rays to reach the ovaries without causing injury to the skin. This is most successfully accomplished by the method used in the Frauenklinik at Freiburg in Germany.

By this method the x-rays are delivered through a delivery tube. The rays are directed obliquely on to the abdomen, the right and left parts of the abdomen being treated at separate sittings. Thus the skin of the median region of the abdomen is less irradiated, so that the rays will not injuriously affect the median line. Another portal of entry is per vaginam. The rays are made to pass through a vaginal speculum with the patient in the lithotomy position. It is stated that Zaretsky, by the latter method alone, succeeded in producing complete amenorrhoea. The sacro-sciatic notch is used as another portal of entry. For this purpose the patient lies on her side and the rays are directed obliquely upwards.
in the line of the ovaries. The median line of the back is also rayed over the region of the ovaries.

Another method is to have the patient sitting upright, and to direct the rays horizontally through the back. In patients with loose skin over the abdomen, one can move the skin about so freely that two doses of x-rays can be given from the same point, while the rays fall on different skin during the application of each dose. In every application the skin focus distance is 20 cm., and 3 mm. of aluminium are used as a filter.

A dose of 10x is given at each portal of entry. The dose is measured on the skin by Kienböck’s method. The hardest possible x-ray tube is used. Rays should have a hardness of at least 8 Benoist. This is, shortly, the technique employed, and there is a good reason for every detail.

The treatment has proved successful in myoma uteri and in climacteric flooding. The dose of x-rays required to produce an artificial menopause varies with the patient’s age. The nearer she is to the climacteric period the smaller is the dose required.

Bordier gives the following indications and contra-indications for treatment by x-rays: (1) patients under thirty-nine years of age should not be treated by x-rays, (Gaus states that amenorrhoea can be produced at any age); (2) interstitial fibroma is the most suited for x-rays; pedunculated fibroma should be treated surgically; (3) radiotherapy acts like a charm in cases with profuse menstrual hæmorrhage; (4) moderate sized tumours are most suitable; (5) hæmorrhages of the menopause are successfully terminated by x-ray treatment. One or two treatments are sufficient for the purpose.

Contra-indications are: calcified myoma, malignant, infected, suppurating tumours, suppurating salpingitis, and pelvic peritonitis.

The artificial menopause is accompanied by the usual disturbance of the natural menopause—hot flushes and nervous symptoms.

The technique reported in "Röntgentiefentherapie" far surpasses any method used in the past. The method which, literally translated, is called "intense raying with large doses," has given the best results. The authors report ten cases treated in this way. In these ten cases the average dose given was 1480 x. The smallest total dose was 693x, and the largest total dose was 2284x. The average time to produce amenorrhoea was one and a quarter months, the longest time required was two months, and the shortest one
month. The authors feel that they can produce these results "without regard to the age of the patient, or to the size of the tumour." They describe their technique so fully, that any x-ray expert should be able to reproduce their results. They report two hundred and five cases treated by various methods, but their final ten cases, treated by "intense raying with large doses," have given them the greatest satisfaction. My own experience is limited to the longer method whereby I succeeded in producing amenorrhea, and causing the disappearance of a myoma after about five months of treatment. To be able to produce the same result in a month is certainly a great step in advance. Though this method will never surpass the surgical removal of a fibroid, yet there are cases in which the x-ray method has proved a great boon to patients suffering from fibroma uteri. Such treatment with massive doses should only be carried out by those who are expert at measuring large filtered doses of x-rays.

A. Howard Pirie

Res Judicatae

THE RESULTS OF THE FRIEDMANN TREATMENT

Report of the Committee of the Canadian Association for the Prevention of Tuberculosis

THE following report was read at a general meeting of the Canadian Medical Association in London, Ontario, June 25th, 1913:

In order to allay public excitement and to afford to the medical profession and people of Canada, an authoritative statement regarding the value of Dr. Friedmann's treatment, the Canadian Association for the Prevention of Tuberculosis nominated a committee of five members to study and report upon the cases inoculated by Dr. Friedmann at Montreal, Ottawa, Toronto, and London. The committee has added to itself those physicians who have under observation the cases treated in these cities. The committee thus constituted begs to report that it has carefully studied the case
histories of the patients inoculated by Dr. Friedmann. These number altogether 161, namely, for Montreal 55, for Ottawa 10, for Toronto 81, for London 15.

As a result of our observations from March 11th to the present the following conclusions seem justifiable:

1. The inoculations have neither constantly, nor frequently, been followed by any marked change in the clinical course of the disease.

2. The cure or progress towards cure claimed by Dr. Friedmann for his treatment has neither constantly, nor even frequently, taken place in the time during which these cases have been under observation.

3. Thus upon investigation the committee finds that the results have been disappointing, that the claims made for this remedy have not been proved, and that nothing has been found to justify any confidence in the remedy.

(Signed) J. GEO. ADAMI, J. J. MacKENZIE, A. H. CAULFEILD, E. S. HARDING, JOHN W. S. McCULLOUGH, WM. H. ROSS, J. H. ELLIOTT, GEO. D. PORTER.

Dr. Chas. A. Hodgetts, a member of the committee, being averse to making any report whatever, did not sign the above.

The Toronto Preventorium, which was opened officially on May 7th, is intended for the treatment of children who show a possible tendency to tuberculosis. Additions to the building are being made and it is hoped will be completed in the autumn; the institution will then accommodate about seventy-five children.
Obituary

Dr. Severin Lachapelle, of Montreal, died suddenly June 18th, in the sixty-fourth year of his age. Dr. Lachapelle was born in the parish of St. Rémi, county of Napierville, Que., in 1850. While studying at the Montreal College, he joined the Canadian regiment which was sent to Italy to join the forces against Garabaldi, and after two years of service he returned to complete his studies at the Victoria College of Medicine. In 1874, he began to practise in St. Constant, Que. Two years later he removed to St. Henri, where the remainder of his life was spent. Dr. Lachapelle was particularly interested in diseases of children and directed his efforts towards the prevention of infant mortality. Apart from his professional work, he proved himself a good citizen, willing to take his share of civic duties and to do what he could for the betterment of the community in which he lived. From 1892-1896, he was Conservative member of Parliament for Hochelaga; he was also ex-mayor of St. Henri, professor of medicine at Laval University, and superintendent of the Montreal Crèche. He leaves a widow, two sons, and a daughter.

Dr. Caverley, of Trenton, Ontario, died from pneumonia, June 8th. Before going to Trenton, Dr. Caverley practised for some years in Belleville.

Dr. T. H. Stark, of Toronto, died June 9th, from angina pectoris. Dr. Stark was in the fifty-eight year of his age; he was born in Quebec, and was a graduate of Trinity University, where he obtained his M.D. degree in 1881. The year 1881-1882 he spent as house surgeon at the Toronto General Hospital, and soon afterwards went into general practice, which he continued almost to the day of his death.

Dr. J. B. Neff, of Port Colborne, Ontario, died at the Welland Hospital, June 27th. Dr. Neff was a popular physician throughout Welland County, having practised at Port Colborne for over fifty-one years. He was born in the township of Barton in 1837, and received his primary education at the Hamilton Grammar School; his M.D. degree was obtained from the Philadelphia
College of Medicine. He subsequently became a member of the Ontario College of Physicians and Surgeons and commenced the practice of his profession at Stonebridge, later going to Port Colborne. Dr. Neff was the first president of the Welland County Medical Association, which was organized seven years ago.

Dr. Jerrold Ball, of Toronto, died of appendicitis, July 5th. Dr. Ball was born near Meaford, in Grey County, in 1846, and graduated from the Victoria Medical School in 1874. He practised in Toronto for nearly forty years and was well-known and greatly esteemed. He is survived by his widow and one son, Dr. Harold D. Ball.

Dr. Joseph Beaudin, of Ottawa, died July 7th. He had been ill for some time and was in the seventy-third year of his age. He was well-known both in Montreal and in Ottawa, and for twenty-five years was the medical officer of health for the latter city. He is survived by his widow, two sons, and three daughters.

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News

MARITIME PROVINCES

The medical inspection of schools at Amherst, during the period from September, 1912, to June, 1913, has resulted as follows: 1,208 physical examinations were made; of these 343 children were in normal health, 293 had enlarged tonsils, 116 were suffering from adenoids, and 217 had defective vision.

A private hospital is to be opened in Sydney for the benefit of paying patients, until such time as a general hospital is established to take the place of the Brooklands Hospital, recently destroyed by fire. Emergency cases will be received by the Marine Hospital, but the accommodation there available will not permit of more than this.
The plans have been prepared for certain additions to the Fredericton Hospital. During the month of June, 45 patients were treated in the hospital, 16 were discharged, and 4 deaths occurred.

Six hundred and seventy-nine patients were admitted to the Moncton Hospital during the year ending May 31st, 1913. Of these, 523 were surgical cases and 156 were medical; 555 patients were discharged "cured," 38 "improved," 4 "not improved," and 4 were incurable; 16 were not treated and 30 died. The greater number—447—were private patients. The question of enlarging the hospital and building a new nurses' home is under consideration.

ONTARIO

At the annual meeting of the Ontario Medical Council, which took place at Toronto, July 2nd to 5th, a resolution was passed congratulating Sir James Grant on the attainment of the forty-eighth year of his membership in the Ontario College of Physicians and Surgeons. Sir James being the only original member now serving on the council.

On this occasion, the board of examiners made the following report: examinations held in the autumn of 1912—29 successful and 15 unsuccessful candidates; examinations held in the spring of 1913,—65 successful and 37 unsuccessful candidates.

The following is the list of those who have obtained a degree in medicine from the University of Toronto:

Degree with Honours: Group 1, F. M. Walker; Group 2, H. W. Wookey; Group 3, A. A. Fletcher, K. M. B. Simon.

Medals: W. A. Scott, A. A. Fletcher, Gold; K. M. B. Simon, first silver; H. W. Wookey, second silver.

Chappell prizes in Clinical Medicine: A. A. Fletcher.


Medals: C. P. Brown, gold; O. M. Irwin, first silver; A. Brodey, second silver; G. E. Darby, third silver.


Pass: S. O. Rogers, C. E. Trow.

The following are eligible for the George Brown Memorial Scholarship in Medical Science; the names are arranged in alphabetical order and not according to merit: A. Brodey, C. P. Brown, G. E. Darby, A. A. Fletcher, L. M. Rice, H. P. Robinson, K. M. B. Simon, F. M. Walker, H. W. Wookey.

Measles continues to be unusually prevalent throughout the province.

It is probable that a small hospital will be established at Gore Bay. An effort is being made to collect the necessary funds.

A nurses’ home has been added to the Midland Hospital.

Dr. R. W. Powell, of Ottawa, has been appointed the first Registrar of the Dominion Medical Council.

Dr. Helen McMurchy, of Toronto, has been appointed inspector of the feebleminded and assistant inspector of hospitals and charities for Ontario.

During the past year over five hundred houses have been condemned in Toronto, as unfit for habitation; ninety-eight of these have been destroyed and fifty new houses erected in their place.
An outbreak of smallpox is reported from Wellesley. The usual precautions are being taken and it is not probable that many cases of the disease will develop.

Messrs. D. T. McAinsh & Company, recently removed to 4 College Street, Toronto.

During the month of June, 904 cases of measles were reported in Toronto. Most of these cases were slight, only 10 of them proving fatal. Other infectious diseases reported were: smallpox, 62 cases; scarlet fever, 212 cases, 8 deaths; diphtheria, 139 cases, 16 deaths; whooping cough, 57 cases, 9 deaths; typhoid fever, 41 cases, 6 deaths; infantile paralysis, 4 cases, 2 deaths; cerebrospinal meningitis, 4 cases, all fatal; tuberculosis, 143 cases, 99 deaths.

The Toronto City Council recently granted the sum of $210,000 to the new General Hospital; this is in addition to the $400,000 previously granted.

Dr. M. O. Klotz, of Ottawa, has been elected president of the Ontario Medical Council for the year 1913-1914.

Several cases of smallpox have occurred recently throughout the northern part of Ontario, particularly among the lumber camps. In one camp, when visited by the health officer, it was found that practically every one had had the disease, but the fact had been kept secret. It is probable that most of the cases originated from this centre.

Quebec

The Bruché Institute, a tuberculosis dispensary which does good work, more particularly among the French-speaking population of Montreal, has instituted courses of lectures and practical demonstrations, open to any physician on the payment of a small registration fee, each course lasting two weeks and dealing particularly with the diagnosis of tuberculosis. It is intended next year to provide more advanced instruction for those physicians who avail themselves this summer of this much needed opportunity, and who may desire to study the subject more fully.
The present building of the St. Justine Hospital, for infants at Montreal, has accommodation for thirty-six beds, which is not sufficient for the present requirements. It is proposed therefore to erect a new building on St. Denis Street, to contain sixty beds. The site has been secured and $27,000 subscribed towards the building fund. The plans are being prepared and it is hoped that the building will be completed within a year.

An outbreak of smallpox recently occurred at Coteau Landing. As no effective steps were taken by the local board of health to prevent the further spread of the disease, the place was quarantined by the provincial health authorities.

Dr. A. Campbell Geddes, professor of anatomy in the Royal College of Surgeons in Ireland, has been appointed to the Robert Reford Chair of Anatomy at McGill University. Dr. Geddes is a graduate of Edinburgh University.

A new hospital is to be built at Sherbrooke. A Children’s Ward will be included in the building; it has been endowed by Mr. M. A. Macfarlane as a memorial to his late wife.

Arrangements are being made to build a large hospital at Quebec; it will be under the direction of the Sisters of the Order Oblates de Marie.

MANITOBA

The Sanitary Inspector’s Association of Western Canada was organized at Winnipeg, a few months ago. H. R. H. the Duke of Connaught has consented to become the patron of the society; the president is Mr. E. W. G. Hague, assistant chief health inspector of Winnipeg.

At the regular monthly meeting of the Brandon Hospital Board, held June 11th, it was decided to prepare the plans for the new hospital building, for which $100,000 was voted recently, and to increase the medical staff of the hospital from ten to twelve.

SASKATCHEWAN

It is proposed to establish hospitals at the following places: Perdue, Biggar, Wilkie, Unity, Macklin, Pisask, Kindersley,
Lumsden, Weyburn, Estevan, Glenavan, Grenfell, Broadview, Kamsa, Foam Lake, Wynyard, Davidson, and Yorkton.

A by-law has been passed authorizing the Alsask town council to issue $6,000 of debentures and to build a hospital with the proceeds.

ALBERTA

A prison farm has been established about twelve miles from Edmonton, for the detention of inebriates who otherwise would be sent to jail. In order that those who are sent to the farm may remain there long enough to benefit by the treatment given, application will be made to the Attorney General for permission to extend the sentences if it is considered advisable to do so.

The following is the list of infectious diseases treated in the Edmonton Isolation Hospital during the month of May: diphtheria, 5; diphtheria with typhoid, 1; scarlet fever, 18; scarlet fever with measles, 1; erysipelas, 14; measles, 38; tuberculosis, 3; smallpox, 3; mastoid operation following scarlet fever, 1; pharyngeal abscess following measles, 1. Three hundred and ninety cases of infectious disease were reported during the month. Of these 267 were measles, 9 of which resulted in death.

Every bed in the Calgary General Hospital is occupied and it is felt that some provision should be made in case of an epidemic; several of the rooms in the new isolation hospital are to be equipped at once to serve as reserve wards.

A new hospital is to be built at Medicine Hat. The present building only contains one hundred and twenty-five beds, which is now inadequate for the needs of the city. An emergency building is to be erected to provide the necessary accommodation until the new hospital is ready.

The Edmonton Hospital Commission was duly appointed, July 17th. The commission has full control of all the hospitals of the city; it consists of five members elected by the city council, seven appointed by the former hospital boards, and three appointed by the University of Alberta.
A WHIRLWIND campaign is to be held in September, in aid of the Pincher Creek Memorial Hospital.

The cornerstone of the new South Side Hospital was laid by the Mayor of Edmonton, on Wednesday, June 25th. The building is to be erected on the university grounds, a little south of the Alberta College. The first floor of the main building is already built and the service building is now to be commenced. The erection of this hospital was decided upon originally by the Strathcona Council, but later it was agreed that a joint university and city hospital should be built. This is now being done. The new hospital will contain eighty-five beds, forty-five of which will be for public patients. A roof garden will be provided for convalescents and made accessible by the installation of an electric elevator. The financial committee has been assisted very materially by a gift from Lord Strathcona of twenty-five thousand dollars.

BRITISH COLUMBIA

The annual meeting of the Windermere District Hospital Association was held at Athalmer in April. A new hospital building is to be erected as soon as the necessary funds have been collected. In the meantime the plans are being prepared.

In the report for May of the Provincial Mental Hospital at New Westminster, it is stated that there were in the hospital at the end of that month 289 male and 271 female patients; at the Mount Coquitlam Hospital there were 360 patients.

As the result of certain criticisms made concerning the management of the isolation hospital at Victoria, a committee was appointed to enquire into the conditions. The committee found no fault with the management of the hospital but considered that the equipment provided was somewhat inadequate.

$4,328.43 was collected on June 9th, for the Vancouver General Hospital. This is not quite as much as the "tag day" collections amounted to last year.

Dr. M. T. MacEachern, superintendant of the Montreal Maternity Hospital, has been appointed general superintendant of the Vancouver General Hospital. He will take up his new duties at the beginning of this month.
CANADIAN MEDICAL ASSOCIATION

ANNUAL MEETING, JUNE 24TH TO 27TH, 1913

A.—REPORTS OF COMMITTEES

1. Abstract of the Report of the Finance Committee to the Executive Council on the work of the year since the last Annual Meeting

This report dealt with the recent changes in the officers of the Association, and with the management of the Journal. Dr. Archibald and Dr. Small having resigned at the Edmonton meeting the secretaryship and the treasurership, respectively, Dr. W. W. Francis was appointed to the combined offices, and was also appointed assistant to the editor of the Journal. This effected a convenient centralization of the work, which had become too exacting for unsalaried officers busily engaged in active practice. In connexion with the Journal, the report dealt chiefly with matters in dispute between the publishers and the Finance Committee, especially certain advertisements which have been rightly objected to, and which the committee has not yet succeeded in inducing publishers to withdraw. A feeling was generally expressed at the Edmonton meeting in favour of changing the Journal from a monthly to a weekly; but this has been found to be impracticable for the time being, partly on account of difficulties in connexion with publication, and chiefly because of lack of funds. It was the opinion of the committee that such action must be deferred until the membership increases largely. A net increase of one hundred and seventeen in the membership was reported for the year.

Appended to this report was the treasurer's statement, which may be summarized as follows:

SUMMARY OF TREASURER'S STATEMENT FOR THE YEAR ENDING DECEMBER, 1912.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance from year 1911</td>
<td>$75 36</td>
</tr>
<tr>
<td>Annual fees</td>
<td>$6,092 95</td>
</tr>
<tr>
<td>Reprints, etc.</td>
<td>71 31</td>
</tr>
<tr>
<td>Balance from retiring secretary's account</td>
<td>83 89</td>
</tr>
<tr>
<td>Overdraft at bank December 31st, 1912</td>
<td>$6,248 15</td>
</tr>
<tr>
<td></td>
<td>126 68</td>
</tr>
<tr>
<td></td>
<td>$6,450 19</td>
</tr>
</tbody>
</table>
In submitting the financial statement for the second year since the JOURNAL was established, the secretary-treasurer pointed out that the receipts very nearly balance the expenditure. The total income was $6,324.51, and the expenditure $6,450.19, leaving a deficit of $126.68. The only outstanding accounts remaining unpaid were the editor’s allowance for December, $125.00, and a sum, the amount of which was then uncertain, still due the publisher on the JOURNAL account. This has since been determined at $72.50, making a total of $197.52, which would increase the above deficit to $324.20. Against this, however, must be reckoned the fees of one hundred and fifty-nine members for 1912, which remained unpaid on December 31st. One hundred and three of these members have since paid their fees, a sum of $515.00. It was deemed best not to include this in the report for 1912. It would, however, have converted the above deficit of $324.20, into a balance of $180.80. On the other hand it must be noted that the editor needed only half his annual allowance of $1,500; it having accumulated
during several months when he was without an assistant. Of the fifty-six members whose fees are still unpaid for 1912, the membership of twenty-two was allowed to lapse, leaving thirty-four still in arrears.

In comparing this statement with that for 1911, which showed a balance of $75.36, and total receipts of $6,626.79, it should be noted that these included a balance of $1,140.70 from the Toronto meeting in 1910, and also the fees of thirty members due for 1911, who paid during the first quarter of 1912. The actual receipts from annual fees were $5,486.09 for 1911, and $6,093.05 for 1912.

2. Report on Medical Inspection of Schools, 1913

Alberta. In Edmonton a medical inspector has been at work for some time. He acts in cooperation with the health department and is of great assistance in getting information of infectious disease among the children. A medical inspector of schools has also been appointed in Calgary. Dr. Whitelaw, medical officer of health, Edmonton, reports that the movement in favour of medical inspection of schools is rapidly gaining ground in Alberta, and it is expected that the system will soon be established in all the cities.

British Columbia. Immediately after the last annual meeting of the Canadian Medical Association at Edmonton, the first annual report of the medical inspection of public schools in the province of British Columbia was published by the government.

Manitoba. In the city of Winnipeg for the year ending December, 1912, the two medical inspectors report over five thousand new pupils examined and over two thousand one hundred defective pupils re-examined. School nurses are employed who weigh and measure the children and prepare them for examination by the inspector. In cases of suspected contagious disease the nurses visit the homes of the children and do work of great value in preventing the spread of contagion. The principals of the schools and the teachers have been prompt to detect and report suspicious symptoms and this also has been a great help. Special attention has been given to the state of the children's teeth and a very high proportion of dental caries is found to be present.

Medical services in Winnipeg do not stop short at inspection. for an attempt at treatment has been begun. Provision is made for the treating of dental defects at the dental clinic in connexion with the out-door department of the General Hospital. Also circulars
have been printed and distributed which point out the importance of proper care of the teeth, with the result that in a large number of cases treatment has been promptly sought. An attempt has also been made to give practical instruction in health matters. Girls have been instructed at a nursery mission in all that pertains to the care and feeding of infants, also in the preparation and preservation of milk, and various questions of personal hygiene.

New Brunswick. No progress can be reported. Beyond the legislation enabling school boards to take up medical inspection which was passed last year, nothing has been done. This is all the more disappointing when we remember that in this province nearly twenty years ago the venerable Dr. Bayard, of St. John, urged the adoption of medical inspection and at least a "compulsory investigation of the teeth of school children and a state-aided rectification of defects in them."

Nova Scotia. The Medical Society of Nova Scotia, as much as thirty years ago agitated in favour of medical supervision and physical training in schools and properly equipped playgrounds, and at one time a committee appointed by the society held a conference with the government and met with a sympathetic hearing. But the adverse influence of one or two prominent members of the government destroyed all hope of progress.

During the last few years the educational authorities have been alive to the value of medical inspection and in Halifax they have prevailed on the city council to set apart a sum which affords a nominal salary to two medical inspectors. Here also the dental profession undertook to make gratuitous inspection of the teeth of school children. In Amherst a very thorough and well organized system of inspection has been set up, and the medical inspection is done, so far, gratuitously, for the medical men feel that when the public realize the benefits of inspection they will be ready to pay for it. In Amherst also the school board employs a school nurse, and has arrangements for aiding in various ways the children of the very poor.

Ontario. Steady progress has been made in Ontario throughout the year in the medical inspection of schools. The sphere of school nurses and school doctors has been widened, larger appropriations have been made, popular interest has increased, and the work has been begun in a few more places. In St. Catharines, the City Teachers' Association passed a resolution which was presented to the Board of Education in March, 1913, asking that consideration be given to the necessity for the medical inspection
of children in the public schools. And the matter was referred to the School Management Committee. The members of one of the women's institutes in Ontario opened a subscription list for the salary of a school nurse, and offered her services for three months to the Board of Education. This offer was accepted by the board. In Niagara Falls, London, Hamilton, Brantford, Toronto and elsewhere, the work has been carried on during the year. In Toronto a great increase was made in the appropriation and in the number of doctors and nurses appointed. The Open Air Forest School has been continued and the school nurses have begun classes for "Little Mothers," in infant care and management. Important dental clinics have also been established. At the recent meeting of the Ontario Health Officers' Association at Toronto, a resolution was passed stating that school medical inspection should be under the direction of the medical officer of health. The Hon. Dr. Pyne, minister of education, who has always shown a sympathetic interest in this work, has invited Dr. James Kerr, of London, England, to visit Ontario, and lecture on Medical Inspection of Schools, in September, 1913.

Prince Edward Island. Authority has been obtained for medical inspection in the city of Charlottetown, but no money has been granted to meet the expense of it.

Quebec. In the city of Montreal there exists a very thorough and well-organized system under the direction of Dr. Laberge, who is chief medical inspector and is also at the head of the department for dealing with infectious disease. Nineteen physicians and four nurses are employed. Each inspector has an average of eight schools to visit and an average of five thousand pupils to inspect. The inspectors are expected to give all their time from 9 a.m. to 5 p.m., to the work and the salary is $1,200 per annum. The inspectors have no authority in the school. If a case of contagious disease is detected the principal is notified and a request made that the child be removed. In cases of non-contagious disease the parents are notified by a sealed letter and asked to have the child treated. It is also the duty of the inspector to visit homes and factories with the view of checking the spread of infectious disease, and they make a monthly report to the chief inspector upon their general work. The duties of the nurses are to treat at the schools and under the direction of the medical inspector cases of minor affections. Also to visit the homes of the absentee pupils to enquire for them and to induce the parents to secure adequate treatment.
Westmount.—In the corporation of Westmount the inspection is under the direction of the medical officer of health, Dr. Hutchinson. The duties of the inspector are to make an individual inspection of each pupil three times a year, at the opening of the school in September, at the New Year and after Easter. The examination covers the following points: "General appearance, throat, teeth, pulse, hearing, sight, vaccination, serofula, skin affections, spinal deformity and evidence of infectious disease." The inspector is also at the call of the principal of the schools at any time to examine any pupil who exhibits symptoms of illness in the schoolroom or is suspected of having infectious disease. Definite forms are supplied and reports are made to the health department at stated times.

Lachine.—Here also the medical inspection is directed by the Board of Health. The school buildings are subjected to a very thorough inspection once a year and the results of examination are sent to the school trustees. The examination of the pupils is also made once a year. The examination of sight and hearing is apparently carried out and recorded by the teachers, who are supplied with Snellen's scales and very full directions for testing sight and hearing. Notices are sent to the parents when necessary. Dr. Baudouin hopes soon to have a nurse appointed to "follow up" the defects noted at the routine inspection.

In the city of Three Rivers, medical inspection of schools is also being carried out, and the cities of Quebec and Sherbrooke are agitating the question but have not decided on action.

At the convention of the Sanitary Services of the Province of Quebec in 1911, the secretary of the Board of Health, Dr. Elzear Pelletier, outlined a plan of inspection suitable to the rural districts, and a most interesting discussion took place, in which some of the difficulties attending the introduction of general medical inspection of schools were indicated, and a committee including several of the leading physicians of the province was appointed to formulate a definite plan of medical inspection of schools for the province, and to take the necessary steps with the government and the Council of Public Instruction to make it practicable. (Vide, Compte-Rendu de la Quatrième Convention Annuelle des Services Sanitaires de la Province de Québec, 1911.)

Saskatchewan. Dr. Seymour, commissioner of public health for the province of Saskatchewan, writes that in Regina, Moosejaw, and Saskatoon medical inspection has been established. In Moosejaw for the past three years there has been an examination
of each pupil twice a year. Records are kept on file and parents are notified when it is advisable to have treatment. The work is very successful and the general average of the pupils' health has been raised.

In Saskatoon the inspector has two graduate nurses in his employ who devote all their time to the work. The results are satisfactory and are appreciated by the parents who coöperate with the medical supervisor.

In Regina the method is not so satisfactory. Probably from a dread of incurring expense the work appears to be done by a nurse. A medical man has also been appointed, but the understanding is that the nurse "should avail herself of his advice from time to time," the doctor to receive a certain sum for every pupil he attends. Dr. Seymour reports that the doctor's services "have evidently not been required for the past three or four months and the work so far as he is concerned is receiving little attention." This was the position at the close of the year.

It is easy to see that the medical inspection of schools in this country is still in a very elementary stage. In the larger towns much progress has been made and in two or three instances an excellent system has been organized, but this progress is generally due to the personal effort of earnest individuals, teachers and doctors, who recognize the vast importance of the subject. The great bulk of the nation is apathetic. The reasons are not far to seek. In the first place we have the financial difficulty. While in various parts of the country we have instances of voluntary service rendered by medical practitioners in carrying out medical inspection and supervision it is evident that in the great majority of cases, especially in the large centres of population efficient medical inspection can only be secured by the expenditure of money. And we all know the invincible reluctance of municipal councils to add to the taxation of their constituencies.

In the second place, both educational and medical advocates of medical inspection hesitate to launch into systematic work or to appeal to the ratepayer for support, until some definite system of medical inspection has been approved. The whole scheme is still chaotic and the various provinces have varying systems. In some cases, e.g., Nova Scotia, the educational authority has taken the initiative, urges the adoption of medical inspection and secures financial assistance. In other cases, as in Quebec, it is the public health authority that is endeavouring to persuade the Education
Department to adopt medical inspection. And in yet other cases the inspection comes short of what it might do because of a want of correlation and coöperation between the educational and health authorities.

In a study of medical inspection as it exists in various countries the question arises, is this a part of the educational machinery of the country or does it fall among the activities of the Public Health Department? It is perfectly evident that without the most cordial and earnest coöperation between the education department and that of public health, between the teacher and the doctor, the whole thing must be a failure. Each is essential.

But medical inspection is medical work, and the responsibility for its efficiency rests on the medical profession. It would appear reasonable to demand that the medical inspector of schools should in the first place have the special qualifications of a medical officer of health, and in addition should have special knowledge not only of school hygiene, but of educational methods and problems.

But, again, what is the object of medical inspection? Is the science of medicine invoked simply to facilitate the work of the teacher or is the aim in view the elevation of the standard of health of the community? A wise system of medical inspection, including school hygiene, must ensure incomparable benefits to the children attending the school, but these benefits do not cease with school life. The educational influence of medical supervision and advice will tell throughout life, and through the children of school age must to some extent affect the parents and older members of the families from which they come.

It would be a great mistake to let a system of medical inspection degenerate into a mere compilation of vital statistics, but there is no reason why it should not be so conducted as to be in a measure a stocktaking of the national health. The tabulated results of the inspections would form an index of the rise or maintenance or fall of the standard of national health.

Now, if the direction and control of medical inspection is to lie with the educational authority each province of the Dominion will have its own system. The general features may be the same, but the details are certain to vary, as they do now, and the results could not in any sense be looked upon as national.

It seems eminently desirable that a uniform system of medical inspection should be in use throughout the Dominion. There seems to be little prospect that our present system of education will be changed from a provincial to a federal system. But the
circumstances which stand in the way of a federal ministry of education need not obstruct the establishment of a federal ministry of public health. And it is only by the creation of such a ministry that a system of medical inspection, uniform in method and scope and truly national in extent, can be established in Canada.

Such a public health service, taking cognizance of all matters pertaining to the national health, correlating the various branches of public health, the immigration and quarantine stations, the sanitation of factories and public buildings, the army medical service with its recruiting stations and camps, the control of infectious diseases, and the various agencies to secure the public against the adulteration and contamination of food, would seem to be also the proper authority to direct and control the medical inspection of schools.

In presenting this report the Committee on Medical Inspection in Schools wish to suggest that they be relieved of their duties, and that the views of the Canadian Medical Association on medical inspection be hereafter presented and discussed in the Section of Public Health.

They also recommend that the Canadian Medical Association appoint delegates to the International Congress on School Hygiene to be held at Buffalo, August 28th to 31st next.

Respectfully submitted,

JOHN STEWART, Chairman,
HELEN MACMURCHY, Secretary.

3. Report of the Committee on Necrology

Your Committee on Necrology beg to report that they have tabulated the deaths occurring amongst the members of the Canadian medical profession during the past year, nearly one hundred in number. Many had reached a good old age, and though many had been in previous years members of this Association, your committee's labours have been made light by the fact that we have lost none of those appearing on the secretary's roll for the current year.

Though not a member for years your committee feel that reference should be made to the Hon. John Harrison O'Donnell who was vice-president of the Association in 1886-87 when J. E. Graham, of Toronto, was president.

He was born and educated in Simcoe, Ontario, and was a
graduate of Trinity University. He went to Manitoba in 1869, and from St. Paul to the border accompanied the party of Governor McDougall. Those who can recall the Red River Rebellion will understand that at this point the parties separated. When Dr. O'Donnell reached Winnipeg, he found it in a state of unrest. Within a month or six weeks he and his wife and some sixty other Canadians were taken to Fort Garry, then held by the Riel party, as prisoners. Dr. Schultz was also one of the prisoners; he, however, succeeded in escaping and leaving the country, subsequently reaching Ottawa. When these stirring times were over, and civil order was re-established, Dr. O'Donnell was made a member of the first Legislative Council and remained a member during its existence. In 1872, he was appointed to the Provincial Board of Education, and maintained an active interest throughout in municipal and provincial affairs. In 1909, Dr. O'Donnell issued a volume of 160 pages of reminiscences under the title, "Manitoba as I saw it, from 1869 to Date." This with its illustrations gives a most interesting personal impression of men and events with which he was closely associated.

He retained to a marked degree the confidence of his fellow practitioners.

Your committee would also like to make reference to the death of Dr. N. H. Allcock, Professor of Physiology at McGill, whose name, though not on our rolls, appears upon this year's programme.

One who knew him well has spoken of him as a characteristic North of Ireland man, alert, and humorous, whose physiological teaching had the great virtue that it was constantly related to practical medicine.

Respectfully submitted,

J. H. ELLIOTT, Chairman.

B.—Resolutions of the Executive Council

The following resolutions of the Executive Council on the retirement of Dr. Small from the treasurership, and of Dr. Archibald from the secretaryship, were read before the general meeting of the Association, June 27th, 1913.

The Canadian Medical Association desires to place on record its high appreciation of the valuable services rendered by Dr. H. B. Small during his tenure of the office of treasurer, extending from
1894 to 1912, inclusive. Much of the success of any great organization depends upon the character of its officers. In the person of its retiring treasurer, the Canadian Medical Association has had one who commanded the respect as well as the esteem of its members—one indeed to whom it was a pleasure to pay the annual tribute. Dr. Small was not content merely to carry the official purse, but was always anxious to add to its weight and value; and to this worthy end he ever took a warm interest in the affairs of the association, and in all efforts to promote its growth and success.

That he may long be spared to participate in its councils, and continue to give the Association the benefit of his ripened judgement, is the sincere wish of his many friends.

The Canadian Medical Association cannot allow the retirement of Dr. Archibald from the responsible post of general secretary to take effect, without conveying to him its hearty appreciation of what it owes to him for the excellent work he has accomplished in the discharge of the manifold duties of that position, involving in a marked degree tact, patience, and executive ability. The position of secretary to an organization, which covers in its operations a vast country extending from the Atlantic to the Pacific, is a most onerous and responsible one. The members of the association in according Dr. Archibald the sincere thanks which are his due for the admirable conduct of his office, desire to convey to him their best wishes for his future welfare and success.

C.—Reports of Sections to the Executive Council,
London, Ontario, June 26th, 1913

Section of Public Health

1. Report of the Committee upon Dr. John Stewart’s report on the Medical Inspection of Schools, as adopted by the section

   1. That the report of the Committee on Medical Inspection of Schools be sent to the Association Journal with a recommendation that it be published therein.

   2. That the thanks of the Association are due to Dr. Stewart for his work on this report.
3. That where the municipality is large enough it is advisable to have a full-time inspector.

4. That, as infectious diseases are under the direction of the Provincial Health Act, the medical inspector's duty is to report them to the health officer.

5. That the following be appointed by this association as its representatives at the International Congress on School Hygiene at Buffalo, August 28th to 31st, and that the secretary of the Association be instructed to notify each of the members and also the secretary of the Congress: Dr. Bapty, Victoria, British Columbia; Dr. D. J. Dunn, Edmonton, Alberta; Dr. Maywood, M.H.O., Calgary, Alberta; Dr. Thompson, Regina, Saskatchewan; Dr. A. W. Allum, Winnipeg, Manitoba; Dr. Helen MacMurchy, Toronto, Ontario; Dr. Paquin, Quebec City, Quebec; Dr. Melvin, D.P.H., St. John, New Brunswick; Dr. John Stewart, Halifax, Nova Scotia.

6. That the present Committee on Medical Inspection of Public Schools, be relieved of its duties and that the Section of Public Health, hereafter take the matter in hand.

Committee: Dr. Halpenny, Convener, Dr. Parke, Dr. Hutchinson, Dr. Whitelaw.

This report was approved by the Executive Council.

2. Report of Committee on Venereal Diseases, as adopted by the Section

1. In view of the deplorable prevalence of venereal diseases, which in all probability affect a larger number of families than tuberculosis, and whereas the test known as the Wassermann reaction is absolutely necessary in connection with the proper treatment of syphilis, the Section of Public Health of the Canadian Medical Association hereby resolves that the several provincial boards of health throughout the Dominion be requested to perform gratis the Wassermann reaction on the order of any member of the medical profession and that a copy of this resolution be sent to the provincial secretary of each of the provinces.

Committee: Dr. Fraser Harris, Convener, Dr. Adami, Dr. Hill, Dr. Williams, Dr. Bapty.

This clause of the report was approved by the Executive Council, but two further clauses recommending that the venereal diseases should be added to the statutory list of notifiable diseases
classified as infectious, and that a permanent committee of the Association be nominated to watch over these matters, were referred back to the committee for further information.

3. Resolution

Moved by Dr. Revell, seconded by Dr. Whitelaw, carried. That, whereas by the Canada Medical Act, the medical profession in Canada has been nationalized, thus giving a proper basis for a national administration of the public health.

Therefore, be it resolved,—

That in the opinion of this section it is desirable that an organized effort be made to unify the public health laws of the several provinces of the Dominion of Canada, and that to further this end a Committee of the Canadian Medical Association be now appointed.

The Executive Council approved this resolution and appointed Drs. Helen MacMurchy and Edward Fidlar a Committee with power to add.

Section of General Medicine

The Section of General Medicine instructed the chairman to report to the executive of the Canadian Medical Association the earnest desire of this section for a strong and definite representation, to the health authorities of the various provinces, of the necessity for legislation controlling the marriage of individuals whose family history shows inherited tendency to degenerative diseases of the nervous system.

(Signed) J. F. FOTHERINGHAM,

Chairman.

Ontario Medical Association

At an executive meeting of the Ontario Medical Association held in London, on June 26th, a committee was appointed to consider the best means of organizing the county societies to bring them into closer communication with the provincial body, and thus with the Canadian Association. The Committee consists of the president, vice-president, secretary and Drs. John Moore, Wallace, and Moorehouse. Other business which was to come before the association was laid over till the next meeting, which will take place in Toronto in 1914.
Canadian Literature

Original Contributions

Dominion Medical Monthly, July, 1913:

Radium in Dermatology . W. H. B. Aikins and F. C. Harrison.

The Canadian Journal of Medicine and Surgery, July, 1913:

Hirschsprung's Disease, or Congenital Dilatation of the Colon in a boy of three years: Resection of Colon: Recovery . H. T. Machell.
Health Matters in Ontario . A. H. Wright.
The Medical Guild in Civic Life . J. Hunter.

The Public Health Journal, June, 1913:

The Importance of Milk as a Food . A. W. MacPherson.
Disposal of Domestic Sewage in Suburban and Rural Areas . R. E. Wodehouse.
The Care of the Teeth of School Children in Germany . Dr. Dieck.
Memoranda of Sanatoria in Tuberculosis with mostly German Data . W. S. Magill.

Le Bulletin Médical de Québec, June, 1913:

Hygiène municipale . E. Nadeau.
La Tuberculeose et son diagnostic . F. Dubé.
Observation clinique . J. P. Frémont.

The Canadian Practitioner and Review, July, 1913:

The Physiology and Pathology of the Internal Secretory Organs . J. Ferguson.
The Canada Lancet, July, 1913:

Terminal Disinfection in Typhoid Fever and Diphtheria . . . . G. A. Dickson.
Disposal of Domestic Sewage in Suburban and Rural Areas . . . . R. E. Wodehouse
Mr. Abraham Flexner’s Report upon Medical Education in the British Isles . . . . . L. Irwell.

Western Canada Medical Journal, June, 1913:

Clinical Case—Syphilitic Condition of the Patella . . . . J. E. Lehmann.

Publication No. 7, issued by the Medical Faculty, Queen’s University, June, 1913:

A Great Teacher (Sir Michael Foster) and His Influence . . . . J. George Adami.
The Relation of the Hospital for Mental Diseases to the Community . . E. H. Young.
The Use of Vaccines in Eye Infections . . . . James Garfield Dwyer.
Clinical Studies on the Curative Action of Leucocyte Extracts in Infective Processes . . . P. H. Hiss, Jr., and J. G. Dwyer.
Middle Ear Tuberculosis . . . . T. H. Farrell.
Medical Societies

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION

The sixty-ninth annual meeting of the American Medico-Psychological Association was held at the Clifton Hotel, Niagara Falls, on June 10th, 11th, and 12th. There was a large attendance of physicians from the United States and from Canada and many interesting papers on the care and treatment of the insane were read. The presidential address was delivered by Dr. James T. Searcy, of Tuscaloosa, Alabama.

The officers elected for the year 1913-1914 are: president, Dr. Carlos MacDonald, New York; vice-president, Dr. S. E. Smith, Richmond, Indiana; secretary-treasurer, Dr. Charles G. Wagner, Binghampton, N. Y. (reelected).

BRANDON MEDICAL ASSOCIATION

The officers of the Brandon Medical Association for the year 1913-1914 are: hon. president, Dr. L. M. More; president, Dr. A. T. Condell; vice-president, Dr. H. E. Hicks; secretary-treasurer, Dr. H. S. Sharpe; executive, Dr. H. O. McDiarmid, Dr. E. C. Beer, and Dr. St. John, of Virden.

TORONTO ACADEMY OF MEDICINE

The officers of the Toronto Academy of Medicine for the year 1913-1914 are: president, Dr. Herbert J. Hamilton; vice-president, Dr. H. B. Anderson; secretary, Dr. W. Harley Smith; treasurer, Dr. W. A. Young; past president, Dr. R. A. Reeve.


Chairmen of Sections: medicine, Dr. J. T. Fotheringham; surgery, Dr. Wallace Scott; pathology, Dr. Duncan Graham;
ophthalmology and oto-laryngology, Dr. D. N. Maclennan; state medicine, Dr. J. H. Elliott; paediatrics, Dr. H. C. Parsons.

Secretaries and editors of Sections: medicine, Dr. Frederic Harrison, Dr. A. H. Rolph; surgery, Dr. Malcolm Cameron, Dr. Geo. Ewart Wilson; pathology, Dr. F. W. Rolph, Dr. C. E. C. Cole; ophthalmology and oto-laryngology, Dr. T. Alex. Davies, Dr. F. C. Trebilcock; state medicine, Dr. J. F. Hazlewood, Dr. G. G. Nasmith; paediatrics, Dr, G. F. Boyer, Dr. J. S. A. Graham.

Through Dr. Roux, of the Pasteur Institute, Paris, the hope was aroused at the Academy of Sciences, on June 16th, that an efficacious remedy may be found for whooping cough, a disease which, by its enfeebling effect, opens the way to so many serious, and even fatal, complications in children. M. Nicolle has succeeded by the aid of the living bacillus of whooping cough, discovered by M. Bordet, in preparing a serum which on injection almost always induces a reduction of severity in the accesses, and often causes the disappearance of the disease within a fortnight. M. Nicolle expects still further to improve his treatment.
—Lancet, June 28th, 1913.
PITUITARY EXTRACT IN OBSTETRICAL PRACTICE

BY B. P. WATSON, M.D., Ch.B., F.R.C.S.E.
Professor of Obstetrics and Gynaecology, University of Toronto
Obstetrician and Gynaecologist, Toronto General Hospital

It seldom happens that a new drug or remedy comes into universal use in such a short space of time as has been the case with pituitary extract in obstetrical practice. Since it was first used clinically by Blair Bell in 1909 it has been employed in practically every obstetrical clinic throughout this continent, and in Britain and Europe. The result is that in these four years a vast amount of literature has accumulated on the subject. It seemed to me that a useful purpose might be served in reviewing this literature, and in affording an opportunity for discussion amongst those of us who have used the drug, and have not up to the present put our results upon record.

Any new remedy is apt at first to be used somewhat indiscriminately, and this has been the case with pituitary extract. We can, however, learn a great deal from such experiences, for it is only by a consideration of a large number of cases, and by a study of the good and bad results obtained under different circumstances, that we can arrive at a proper conclusion regarding its sphere of action and its limitations.

Anatomy and Physiology. The pituitary body is situated in the sella turcica, at the base of the skull. It consists of two lobes, an anterior and a posterior, connected by the pars intermedia. The posterior lobe is connected with the floor of the third ventricle by

Read before the Section of Obstetrics, Meeting of the Canadian Medical Association, June, 1913.
the infundibulum. In the female the body is about one-tenth heavier than in the male (Biedl: *Innere Sekretion*, Berlin, 1910). The weight is always increased during gestation, and while diminishing again post partum, remains greater in multiparae than in nulliparae.

The two lobes differ in size, in structure, and in function. The anterior is the larger of the two. It consists of a stroma of connective tissue, containing epithelial cells arranged in a glandular fashion. These cells are of two types, those which stain deeply with the ordinary stains—some being eosinophile and some basophile—and those which stain feebly. It is to the increase in size and number of these latter cells that the increased weight of the gland during pregnancy is due. At the same time they change in character and in staining reactions. The epithelial cells of the anterior lobe produce a colloid substance. Destruction or removal of this lobe in adult animals results in their death. Young animals may, however, survive the operation, and in them marked effects are produced; they take on fat rapidly and sexual development is arrested, the genital organs remaining in an infantile condition. The same results have been observed to follow disease of the gland in the human subject. The anterior lobe therefore has important influences on the development of the genital system and on the maintenance of its functions.

It is, however, more particularly with the posterior lobe that we are concerned in practical obstetrics, for it is that lobe which contains the substance which has such marked effects in uterine contraction. This lobe has a structure entirely different from that of the anterior. It is developed from the floor of the third ventricle, in distinction from the anterior, which develops from the stomatodæum. It is composed of ependyma, neuroglia cells, and small islets of epithelium. Animals may survive for a long time after its removal. Extracts prepared from it have very pronounced effects on non-striped muscle and on certain of the other tissues of the body.

*Action of Pituitary Extract.* The function of the pituitary body has been investigated by Herring, by Schaefer and Oliver, Dale, Bell, Otto, Scott, Swale Vincent, and many others. Schaefer and Oliver showed that extracts of the gland produced a marked rise in blood pressure, owing to constriction of the peripheral vessels. They also demonstrated its diuretic action, due partly to a dilatation of the renal vessels, and possibly to a direct action on the kidney cells. The latter observation Merrill failed to con-
firm. Besides its action on the peripheral circulation it has a direct action on the heart, causing strengthening and slowing of the beat. Dale was the first to demonstrate its action on the uterine muscle. Later Fränkl-Hochwart and Fröhlich carried out a series of experiments, showing that pituitary extract caused marked contraction of the uterus of pregnant and lactating animals, and rendered it much more sensitive to Faradic stimulation. These results have been confirmed and amplified by other observers (Bell, Cushny, Falta and Fleming, Klotz, etc.). Fränkl-Hochwart and Fröhlich obtained their results only in pregnant and lactating animals. The results are always most pronounced in the pregnant uterus, but can also be demonstrated in the non-pregnant organ.

The active substance contained in the gland has been investigated by several observers. Führer found that $\beta$-imidazolyl-lathylamin (histonin) closely resembled pituitary extract pharmacologically, but he does not believe that it represents the influential constituent. Houssay and Ibanez (Presse Médicale, May, 1912) have isolated from the posterior lobe a crystalline substance which is diuretic, and which has all the effects on non-striped muscle that the whole extract of the gland possesses. They state that it is much more reliable than the whole extract. Herzberg states that the active hormone has been isolated by Meisher, Lucius and Brüning. It is put up for use as hypophysin sulphate. He has used a 1 in 1,000 solution in thirty-two cases, and finds that it possesses all the advantages of pituitary extract and is free from bad effects.

Blair Bell, in 1909, was the first to apply in practice the results of the experimental investigations carried out up to that time. He used the extract with good results in cases of post partum hæmorrhage, placenta prævia, and to minimise hæmorrhage in Cæsarean section. After him Hofbauer published his results, and since then records have been rapidly accumulating.

When administered to a woman in labour the extract quickly causes an increase in the strength of the uterine contractions, while the duration of contraction becomes prolonged and the intervals between pains shortened. The first contractions may be somewhat tetanic in character (a point which is taken up later), but very soon they resume their ordinary rhythmic character, and apart from their increased force do not differ from normal. When administered during the first and second stages of labour results are practically constant. These results are always most apparent if the pains have been previously feeble, and occurring only at long intervals.
On the normal contractions little effect may be produced. As regards its action in the early months of pregnancy in the induction of labour and post partum, clinical records are at variance, and to a consideration of these attention will be directed later.

Mode of Administration. Most of the extracts now on the market are prepared from the posterior lobe, a few from the whole gland. It is, however, from the posterior lobe that the active substance is obtained. Pituitrin, pituiatrin, pituglandol, glandiatrine, hypophysin sulphate, vaporal, are some of the names under which it is sold. There seems to be little or no difference in the activity of the preparations put up by different firms. The preparations I have used have been those prepared by Messrs. Duncan, Flockhart & Company, Edinburgh, and Burroughs Wellcome & Company. Sterilization by heat does not destroy its action, and it is usually put up so sterilized in glass ampules, and is ready for hypodermic, intramuscular or intravenous injection. When administered by the mouth, even in large doses, little or no effect is produced upon blood pressure or uterine contraction (Foges & Hofstaetter). The most convenient way to give it is by subcutaneous or intramuscular injection. The latter is the method I prefer, as it seems to me to act more quickly and powerfully than when given subcutaneously. I cannot help feeling that some of the comparative or complete failures recorded have been due to the subcutaneous method of administration. No pain follows the injection. Hofbauer has used it intravenously, and finds it acts very quickly and powerfully on the uterus. Certain unpleasant symptoms, however, such as pallor, cyanosis, perspiration and a sense of oppression, sometimes resulted, and in ordinary cases this method cannot be recommended. Where very prompt action is required, as in cases of post-partum hæmorrhage, it might with advantage be employed. Hofbauer warns against leaving any trace of alcohol in the syringe used for administration of the drug, stating that it interferes with its action, but this observation has not been confirmed by subsequent observers. I have taken no such precautions, and have seen no bad results.

Dosage. The dosage is fixed in terms of gland weight. Recently Dale and Laidlaw (Journ. Pharmacol. & Experimental Therap., September, 1912) outlined a method for the standardizing of extracts by using the isolated uterus of the virgin guinea-pig, which gives uniform resistance to successive equivalent doses. One cubic centimetre of the extract, which usually represents 0·2 grammes of gland substance, is generally regarded as the full dose. I have employed as a routine a dose of 10 min. There is
no cumulative action of the drug, and large quantities may be given without bad results. Hofbauer has given 7 cc. within twenty-four hours. Bab, in treating cases of osteomalacia, has given 2 cc. in a single dose daily over a period of a month without any bad effect. One of his cases had as much as half a litre altogether.

In animals large doses often result in glycosuria, but this is as a rule only temporary (Miller and Lewis, Johns Hopkins Hospital Bulletin, February, 1913). It has been found experimentally in animals that a second dose administered shortly after the first has very little effect in further raising blood pressure, while succeeding doses fail to produce any effect at all.

When given to the patient in labour a single dose produces a marked effect on uterine contractions, usually within ten minutes of administration, and the maximum result is obtained in from half an hour to an hour and a half after. Thereafter the effects gradually pass off, but, in contrast to the results obtained experimentally, a second injection again stimulates powerful contractions. If a single dose has had little or no effect after the lapse of ten minutes, a second injection may produce results.

We shall now take up in detail the different indications for use in obstetrics.

*To accelerate labour when already in progress.* We take up this aspect of the subject first because the action of pituitary extract is most certain and attended with the fewest side effects when given after labour has been in progress for some time, and pains have become feeble and infrequent. Hundreds of such cases have now been recorded, and it would serve no useful purpose to recapitulate them. Nor do I intend to give details of all my own individual cases. I shall content myself with giving the general conclusions arrived at from the study of all these cases, and refer shortly to one or two of special interest, which I have myself observed.

The results are more certain in the second stage than in the first, and the lower the head is in the pelvis the more pronounced the effect of the drug. If the head has been down in the pelvis for some time, and remains there owing to feebleness of the pains, a single injection of 1 cc. or less usually results in its expulsion within half an hour, and very often in a much shorter space of time. Bondy, for instance, found that patients in whom the average duration of labour had been thirty-six hours were spontaneously delivered within an average space of twenty-eight minutes after the pituitary injection. We have frequently observed delivery take
place in such circumstances as the result of a single strong pain within five minutes of the administration of the drug. The drug is equally efficacious whether the inertia be primary or secondary. Its timely use in such cases will save many a forceps operation. This is a point emphasized by Voigt. Hamm states that since using pituitary extract forceps were required only twice in three hundred deliveries. In the Strasburg clinic, where his observations were made, forceps were used formerly in 3.9 per cent. of cases. Typical examples may be given, similar to many others in the literature.

Mrs. R., primipara; confined in the Toronto General Hospital, December 6th, 1912. Pelvic measurements normal. The first stage of labour was prolonged, and at the end of twenty-four hours pains were feeble and dilatation incomplete. So morphia (a quarter of a grain) was given. She rested for eight hours, and then pains began again, and in an hour the os was dilated and membranes ruptured. The head was well down in the pelvis, but the pains became more and more feeble, and at the end of four hours no progress had been made. Ten minims of pituitary extract were given. Strong pains began within three minutes, and in five minutes more the head was born. The rest of the labour was perfectly natural. The placenta was spontaneously expelled half an hour after the birth of the child. Blood loss slight; uterus remained strongly contracted.

Equally good results are recorded in cases of delay in the second stage, due to causes other than mere feebleness of uterine contractions, such as size or malposition of the head, face and breech presentation, twin pregnancy, and minor degrees of contraction of the pelvis, conditions which, without the use of pituitrin, would often have called for operative interference.

Persistent Right Occipital Position. Mary R., multipara; confined in Toronto General Hospital at full term on April 12th, 1913. Pelvic measurements normal. R.O.P. position. Admitted in labour with os fully dilated and head down in pelvis. Had been in labour twenty-one hours. After admission pains were feeble. The head remained in the perineum for two hours. Ten minims pituitary extract were given. Strong pains came on in seven minutes, and in half an hour the head was born face to pubes. Perineal laceration of first degree. Rest of labour normal.

Twin Pregnancy. Mrs. M., multipara; confined in Toronto General Hospital at eight and a half months on April 19th, 1913. Patient was admitted in labour. It was noted that the abdominal tumour was large, but the diagnosis of twins was not made. Pains
were feeble and ineffectual from the beginning. The os was fully
dilated, and the membranes ruptured after thirteen hours. Head
quickly came down in perineum, but then pains got feeble, and no
progress had been made at the end of two hours. Ten minims
pituitary extract were given. Pains became stronger within five
minutes, and occurred more frequently. First child born ten
minutes later, followed in two minutes by second child, and in
twenty minutes by the placenta. Uterus contracted strongly after,
and there was practically no loss of blood.

In patients with slight contraction of the pelvis the use of pitui-
tary extract may save a forceps extraction. Hamm records two
cases, in which spontaneous delivery occurred after a single injec-
tion, and in which, owing to a slight contraction of the pelvis,
forceps extraction had failed before the patients were admitted to
the hospital. Even if forceps should ultimately be required in a
narrow pelvis, the more powerful contractions induced help the
moulding of the head and render extraction easier. If the drug
is going to act it will do so within ten minutes, and so no time is
lost. There are many cases on record where an injection was given,
and forceps were being prepared, but delivery has taken place
before the instrument could be sterilized.

In such minor degrees of pelvic contraction Hengge and
Grünbaum have had good results. Vogt states that in six hundred
cases in the Dresden clinic, among which were a number with narrow
pelves, forceps were never used. Fries states that a number of
times he has seen the entrance of the head into a slightly narrow
brim helped by the use of pituitary extract. The contraction must
of course be of such a degree as to allow of the passage of the head.
The drug has no place in the treatment of labour in a markedly
contracted pelvis.

Linzenmeier enters a plea for its use after the operation of
pubiotomy. He deplores the discredit into which the operation
has fallen, owing chiefly to the tearing of the soft parts and subse-
quent sepsis, due to instrumental delivery after section of the bone,
and records two cases in which he used pituitary extract with happy
results. In one the membranes ruptured early, and a hydrostatic
dilator was inserted into the cervix and 1 cc. of pituitary extract
given. After full dilatation the head failed to engage in spite of
the Walcher position. Left-sided pubiotomy was performed and
another cc. of pituitary extract given. The child was born sponta-
neously in thirty-five minutes without any tearing of the soft
parts. In another case the child was born as the result of four
uterine contractions induced by 1 cc. of the extract, given immediately after section of the bone.

When given late in the first stage of labour the results are almost equally as good as in the second stage. If the os is almost completely dilated, and progress arrested owing to feebleness of the pains, a single injection is usually sufficient to effect full dilatation. In such cases the drug is of the greatest service. Under such circumstances the practitioner is tempted to terminate the case by the application of forceps, a mode of interference which is too often attended with extensive cervical lacerations. Pituitary extract does all that is needful, and thus saves the patient from operative interference and from possible ill health afterwards, resulting from extensive tears.

In the earlier part of the first stage the results are not quite so certain, but they are better in multiparae than in primiparae. In the latter, if dilatation has only just begun, spasm of the internal os may result and labour be retarded. We shall refer more fully to this when speaking of the bad effects of the drug.

In post-partum hæmorrhage. It was in the treatment of post-partum hæmorrhage that pituitary extract was first used by Blair-Bell, and later by Foges and Hofstætter. They found it efficient, even in severe cases. Good results have also been reported by Aarons, Eisenbach, Schmidt, Gussew, Herzberg and others. There is, however, a considerable diversity of opinion as to its efficacy in these cases, the majority agreeing that it is less efficient than some of the ergot preparations. Hofbauer, for instance, found that the results are very uncertain. The mode of administration may have something to do with its failure in the hands of some of these writers. Most of them employed the subcutaneous method, and as we have seen the action of the drug is slower when given thus than when given intramuscularly.

Klotz has treated eighteen cases by the intramuscular method with good results. In two of these ergotin had no effect, but powerful contractions resulted in less than three minutes after the pituitary injection. Schmidt got good results in a case where a subcutaneous injection failed by injecting directly into the uterine muscle through the abdominal wall. In a case of Cæsarean section he induced powerful contractions in a similar way by direct injection. In another case he got a good result by injecting the drug into the uterine wall with a long needle passed through the cervical canal. Gussew by its use was able to control severe post-partum hæmorrhage after vaginal Cæsarean section.
A previous injection of pituitrin has the effect of sensitising the uterus, and rendering the action of the ergot preparations more certain (Herzberg). Kroemer has in this way found that it acts well with seacornin.

Personally, I have had no opportunity of using it in a severe case of post-partum haemorrhage. In haemorrhages of a minor degree, due to slight atony of the uterus, I have always found intramuscular injection to be followed by powerful contraction, with cessation of the bleeding.

In Induction of Labour. After the effect of pituitary extract on uterine contractions had been demonstrated it was not long before it was tried for the induction of labour, and a considerable number of observations are now on record. The results obtained, however, have not been altogether satisfactory. In the early months of pregnancy its effect is very uncertain, but towards full term better results may be obtained, and at term and in post-mature cases a good effect is till more to be depended upon. When given for the induction of abortion in the early months the results are almost invariably negative. Sometimes it has no effect whatever in producing uterine contractions; in other cases contractions are induced, but they have little effect in opening up the cervix and quickly pass off. In others it retards progress by causing a spasm of the os. For the treatment of incomplete abortion also it is not to be recommended. Hale has used it in twenty-seven cases, giving daily subcutaneous injections of 2 cc. of the extract. Pains were induced in almost all the cases, and in some were quite severe, but twenty-two out of the twenty-seven were failures, and the ovum had subsequently to be removed manually.

Neu reports the case of a woman three months pregnant, whom he treated for osteomalacia with large doses of pituitrin without producing any effect on the pregnancy. Schaefer failed to induce abortion at the third and at the fifth month, even by giving 3 cc. in the course of twenty hours. In a case at the sixth month, after pains had been in progress for some time, two injections resulted in spontaneous expulsion of the ovum. Hamm reports a case in which he gave 1 cc. in order to terminate pregnancy at the fourth month. The cervix was at the same time plugged with gauze. Two further injections were given at intervals of two hours. When the tampon was removed the internal os was found to be firmly contracted in a spasmodic fashion, and only relaxed when the patient was deeply anaesthetized. In another case he tried to induce abortion at the third month in a patient with tuberculosis. She had three injec-
tions daily for three days with no result. A tent was then inserted, and another three injections given. Uterine contractions were strong, and the tent was expelled. The internal os, however, was found to be in a stage of spasm, and the uterus in tonic contraction. The ovum was removed only with the patient in deep narcosis, and after multiple incision of the cervix. In another case at the six month the cervix was plugged and five doses of pituitrin given. Pains resulted, but he found, on removal of the plug, that the internal os contracted spasmodically during the pains, admitting then one finger only, whereas between the pains it admitted two. Under anaesthesia this spasm relaxed, and the uterus was easily emptied.

Rieck gave pituitary extract in the hope that the placenta, retained after the expulsion of a four months foetus, might be expelled spontaneously. Strong pains resulted, but the internal os became closed, so that it was impossible to introduce the finger. The next day it was soft and easily dilated. Eisenbach reports two failures, one a missed abortion at the third month, and the other at the fifth month. Hirsch, in five cases, states that in one only did complete expulsion of the ovum occur without further treatment.

I have myself tried it in two cases of incomplete abortion, with retention of the placenta, between the third and the fourth month. In neither of them did spontaneous expulsion occur. Each had two injections within two hours of each other, but no pains were induced, and no spasm of the internal os was observed.

It will thus be seen that in the early months, whilst uterine contractions may be induced, these are usually insufficient to expel the ovum, and its expulsion is further impeded by spasmodic contraction of the internal os. It should therefore only be given in cases where the os is widely dilated. In septic cases, with retention of the ovum or part of the ovum, it should not be employed, as the stricture of the os may render manual separation more difficult than it would otherwise be.

In the induction of premature labour the results are somewhat better, although by no means uniformly satisfactory. Stern was among the first to employ it for induction, and he succeeded in two cases out of three. In both the indication was tuberculosis of the lungs and larynx, and in each spontaneous delivery occurred. I have used it successfully in a similar case.

Mrs. A., aged thirty-five, primipara. Suffered from phthisis for several years. Was seen in consultation when at the eighth month of pregnancy, when the patient was much exhausted, suffer-
ing from night sweats, sleeplessness and general weakness. Termination of the pregnancy was clearly indicated. At 2 p.m. 10 minims pituitary extract were given intramuscularly. Within ten minutes a powerful contraction of the uterus occurred, tetanic in character, and lasting nearly four minutes. This was followed by regular rhythmical contractions. At the end of three and a half hours pains began to pass off, and a second similar dose was given. Thereafter the pains continued regularly, and the child was born spontaneously at twelve midnight. The cervix dilated somewhat slowly, and the doctor in attendance assisted dilatation with the fingers. The child, when born, was asphyxiated, but revived. It died suddenly three days later; cause unknown. The mother also died on the eighth day of the puerperium, the cause of death being pulmonary tuberculosis.

Herzberg reports a successful case of induction one week before term, the the indication being the presence of a large umbilical hernia. Two injections of 1 cc. each were sufficient, spontaneous delivery occurring twenty-five hours after the first. In three primiparae, three weeks short of term, he succeeded in inducing regular labour pains as the result of two injections, but the labour did not progress.

Fries was successful in inducing labour at the thirty-sixth and the thirty-eighth week in two patients suffering from nephritis. Goebel induced labour at the eighth month in a parous patient with a flat pelvis. The first two children had been perforated, and the third delivered by pubiotomy. A hypodermic injection of pituitrin started labour, and spontaneous delivery occurred eleven hours later, the child weighing 3,600 grammes. Hofbauer reports one successful and one non-successful case.

These successful cases are the exception, and a great number of unsuccessful results are recorded. Vogt failed in four out of seven cases. Nagy, Zinnssen, Hamm, Hirsch and Schaefer report cases where it failed. In many of these labour was ultimately brought on by means of the bougie or hydrostatic dilator. In some of them difficulty arose from spasm of the os.

At full term and in post-mature cases the results are more certain. Fries was successful in two normal cases at full term. Herzberg also succeeded with two patients, one of them an epileptic, labour lasting ten hours in one case and eight and a half hours in the other. Krakauer brought on labour in an eclamptic at full term.

I can report one such case. Mary T., aged nineteen; last menstruation May 14th, 1912; estimated date of labour, February
21st, 1913; course of pregnancy normal. Pelvic measurements: interspinous, 27 cm.; intercristal, 28.5 cm.; external conjugate, 17 cm.; true conjugate, 9.75 cm. Vertex presentation; R.O.P. position. Head not engaged in brim. As the pelvis was narrow it was thought undesirable to allow the patient to go beyond full term. On February 22nd she was given 10 minims of pituitary extract intramuscularly at 5.30 p.m. Pains came on within fifteen minutes, and lasted for about two hours. A second dose was given three hours after the first, and the pains again became strong, but passed off at the end of four hours. At 12.30 p.m. the next day she had another 10 minims. Pains again strong, becoming feeble after two hours, when another injection was administered. Thereafter the labour went on normally, and the child was born spontaneously at 12.55 a.m. on February 24th, after long rotation of the head.

Stolper was successful in inducing labour in two post-mature cases, one twenty and the other fourteen days over term. In both the cervix was shortened, and admitted a finger with difficulty, but there were no pains. One required three and the other four doses, and in both spontaneous delivery occurred. Both had had prolonged labours previously, but as the result of the pituitrin the one terminated in five hours and the other in six. Hagen had a similar result in a multipara fourteen days after term. Two doses were required; the child was born spontaneously eight hours after the first.

I can report a successful result in a similar case:

Mrs. M., primipara, aged twenty-one; last menstruation July 29th, 1912; estimated date of labour, May 5th, 1913; pelvic measurements normal; head presenting; R.O.P. position. On May 27th there was no indication of labour beginning, and the head was not engaged in the brim. At 2.20 p.m. 10 minims pituitary extract was given intramuscularly. Labour pains began after fifteen minutes, and continued strongly until 5 p.m., when they became feeble. At 6 p.m. 10 minims given intramuscularly. Pains again became strong; os was fully dilated at 11.30 p.m.; head came down on to the perineum at twelve midnight, and spontaneous delivery occurred at 1.35 a.m., May 28th.

We were thus successful in inducing labour in three cases in which we used pituitrin, one at the eighth month, one at full term, and one three weeks post-term. Such success is not in accordance with the experience of most other obstetricians, and a number of those who have written on the subject have come to the conclusion that pituitrin ought not to be used at all for the induction of labour.
The results, however, are better at full term and after term than in premature cases, and I am sure that a further trial is justified. The important point to attend to is to administer a second dose before the effects of the first have passed off. If the contractions are sufficiently strong to dilate the cervix the rest of the labour usually goes on naturally. If therefore as a result of one dose only a small amount of dilatation occurs, and no second dose is given, the cervix may again close and labour pains cease. In post-mature cases it can do no harm, and is certainly worth trying before adopting other means.

For the induction of labour in cases of eclampsia its use may be attended with some danger. Blood pressure, already high, may be raised a to a dangerous degree. Fries, however, used it successfully in two cases of nephritis, and Krakauer and St. Antechi and Zakczewski used it in cases of eclampsia, both in the first stage of labour. In the latter’s case the pulse was slowed from 160 to 76. Several fits occurred after delivery, but another dose of pituitrin was given, and the fits ceased. Bad results are recorded by Nagy, Schneider-Sievers and Tipfer.

Placenta Praevia. A number of very successful results in the treatment of placenta praevia have been recorded. In the absence of pains or when the pains are feeble a single injection very often stimulates strong contractions, so that the presenting part is pressed down against the lower uterine segment and haemorrhage is arrested. Hofbauer recommends that in lateral and marginal placenta praevia, with the head presenting, the membranes be ruptured and pituitrin injected. If the placenta stretches half way across the os, he inserts a hydrostatic dilator. Trapl adopts the same line of treatment, and in a series of sixteen cases had no maternal mortality, and a foetal mortality of only three, and in two of these the child was dead before the pituitrin was given. Five were marginal, ten lateral and one central. Pituitary treatment may also be combined with version in such cases. The strong contractions pressing down the breech stop haemorrhage, and there is no need to hurry the labour. In the same way the hydrostatic dilator acts more efficiently when a pituitary injection is given. Gall, in a series of nine cases of central placenta praevia used pituitrin in combination with turning in four, and with hydrostatic dilators in four. The hydromatonic dilator was used where the cervix was not sufficiently dilated to admit the hand. In all cases
birth occurred spontaneously within an hour. In six of the cases the fœtal heart could be heard before the administration of pituitrin, and in all of these the child was born alive. In none were there any tears of the cervix. Others who record similar good results are Reik, Fischer, Hirsch, Merkel and Blair-Bell. I can report one successful case:

Mrs. C., aged thirty-three; 2-para; was admitted to Toronto General Hospital in December, 1912, the estimated date of labour being January 12th, 1913. Five weeks previous to admission the patient had vaginal hæmorrhage, which lasted for four days; a week later another hæmorrhage, which lasted for two days. Since then, up to the time of admission, there had been intermittent hæmorrhage, lasting for a day at a time. On the morning of December 9th she had severe hæmorrhage, accompanied by slight abdominal pain. When admitted the hæmorrhage had ceased, and the vagina was full of large clots. The cervix just admitted the tips of two fingers, and the margin of the placenta could be felt just within the os. There were no pains present. The vagina was packed tightly with gauze. The patient had no pains during the night, and there was no more hæmorrhage. When the gauze was removed next morning it was found that the cervix had contracted, so that it only admitted one finger with difficulty; no pains were present. The vagina was again packed, and 10 minims of pituitrin given intramuscularly. Fifteen minutes later pains came on, and blood soaked through the packing. Half an hour after the injection the plug was removed, and the cervix was found dilated to the size of a silver dollar. Bipolar version was performed and one leg brought down. Strong contractions continued, and spontaneous delivery occurred within half an hour. A considerable amount of hæmorrhage occurred afterwards, most of which came from a tear on the left side of the cervix. This was stitched, the uterus contracted strongly, and the patient made a good recovery. The eight months child was born alive, and left the hospital with its mother at the end of three weeks.

In this case the pituitrin induced labour pains, and enabled turning to be performed much sooner than would have been the case had it not been employed. It accelerated the course of the labour. Tearing of the cervix may have resulted from very powerful uterine contractions, but we know that such tears are apt to occur through the softened vascular cervix in cases of placenta prævia.

In Cesarean Section. When given about two minutes before
the performance of the operation of Cesarean section pituitrin has a marked effect in diminishing the loss of blood. A number of operators, among them Foges and Hofstaetter, Hofbauer, Blair-Bell, Herzberg and Kroemer, have used it for this purpose. In the Tarnier clinic it was found to be inefficient in two cases out of four, and in these ergotin gave good results. Fischer injected it directly into the uterine wall, and the uterus at once contracted and all hemorrhage ceased. Metzger and others hold that ergotin gives better results.

In other conditions in which pituitrin may be used in obstetrical practice mention may be made of osteomalacia. The influence of pituitrin upon the growth of bone is well known. Extracts have been tried in cases of osteomalacia by Kratochivil, Bab and others. It is stated, however, that while it may relieve the pain, it does not effect a cure.

The extract has also been successfully employed as a galactogogue. I have used it in several cases where there seemed to be a deficiency in the quantity of milk. It was difficult to estimate the exact effect produced, but it was noted in all cases that the children, who formerly appeared to be hungry after feeding, were satisfied and quickly gained in weight.

Action on Bowels and Bladder. In post-partum abdominal distension and retention of urine a dose of pituitrin often sets up peristalsis and stimulates the bladder, so that enemata can be dispensed with and the catheter is no longer required.

Let us now look at some of the bad results which are on record. We shall take up first of all bad effects on the mother.

In some women, more especially elderly primipares, the drug appears to have no effect at all. In others it may produce general symptoms, cardiac distress, vertigo, tachycardia, and respiratory difficulty, which have been reported by various writers. The same set of symptoms was observed by Hofbauer after intravenous injection, and it may be that some of those results following subcutaneous or intramuscular injection may have been due to the needle entering a vein.

In its action on the uterus it may set up tonic or tetanic contractions, and may cause a spasm of the internal os. The first contraction after the injection is given is usually a prolonged one. Hamm, for instance, reports a case in which four injections were given. After the second the first pain lasted eight minutes, after the third eleven minutes, and after the fourth seventeen minutes. Schaefer noted in one case that the initial pain lasted for four
minutes. After this first powerful contraction the uterine action is usually normal. Voigt noted these prolonged contractions in three cases. Jaeger and Voigt also noted them. Such prolonged contractions usually result in a marked slowing of the foetal heart, but the child is seldom in real danger, as the ordinary rhythmic contractions succeed the tonic opening one.

Mackenrodt observed tetanic contractions after the use of 1 cc., which resulted in the death of the child before forceps delivery could be effected.

When the contractions are very powerful and painful they may be controlled by the administration of an anaesthetic, or by the use of morphia or omnopon. The ordinary scopolamin-morphine method may be successfully used along with pituitrin (Gisel).

Hertz has seen rupture of the uterus occur as the result of pituitary fluid. The patient was an anaemic primipara, with a ricketty and slightly flattened pelvis. Head presentation; cervix far back in the pelvis. When the os was dilated to admit two fingers the pains ceased. 1 cc. pituitrin given. In three minutes pains began, but in twenty minutes they became tetanic in character, lasting from two to seven minutes. An hour after the injection a very strong tetanic contraction was followed by collapse of the patient. Examination showed that the head had come down into the pelvis. In spite of pantopon excessive contractions continued, and delivery was effected with forceps. It was then found that the anterior part of the cervix had been torn away completely from the vaginal roof, and the descent of the child had taken place through this tear, and not through the cervical canal.

Spasm of the os may occur in cases of abortion, when the drug is given for the induction of premature labour or early in the first stage. We have referred to some of these cases in dealing with the induction of abortion. Heil reports a case where the birth of the second of twins was arrested, owing to spasm of the os following pituitrin injection. Mackenrodt, Patek, Reik and Hamm report this spasmodic contraction of the os after the use of the drug. Nagy had to incise the cervix in one case, owing to spasmodic rigidity. Roemer had to remove the placenta manually in two cases, owing to stricture of the os. White reports a similar case. In a case of sacculated retroflexed uterus, with forward displacement of the cervix, Koch inserted a hydrostatic dilator and gave 1 cc. pituitrin. Strong contractions occurred, but no dilatation of the cervix took place. Apparently there was a spasm of the os. Cæsarean section was ultimately performed, but the child died.
Atony of the uterus post partum. A number of cases have been reported in which pituitrin was given, and in which atony of the uterus occurred after the termination of the third stage. In most of these the last injection had been given a considerable time before the birth of the child. When the last injection has been given within a short time of the birth of the child and placenta, the uterus usually remains firmly contracted. If there is any tendency to relaxation the ergot preparations usually act well, as the uterus appears to be sensitized by the pituitrin.

Bad Effects on the Child. Any bad results on the child are due to the prolonged contraction of the uterus. In nearly all cases marked slowing of the foetal heart is observed, but usually the child is in no danger. Jaeger has noted in one case a fall in rate of 40 per minute. Lieven found in one case that the foetal heart fell to 82, and was very weak. Delivery was effected with forceps. The child was born deeply asphyxiated, and did not recover for a considerable time. Voigt states that he has noted great slowing of the heart, and has never seen meconium passed so freely during birth in other labours as after the use of pituitrin. Nagy had to deliver rapidly with forceps in one case in order to save the child, which was born in an extremely asphyxiated condition. Koch and Spaeth report death of the child in breech presentations after pituitary injections. In both cases delivery was rapid and easy.

Unusual effects have been mentioned in a few cases. There was spasm of the glottis in one case reported by Hamm, and contraction of the extremities, lasting for twenty-four hours, in a case reported by St. Antechi and Zaczewski. It is difficult to say whether these were due to the pituitary or not.

To sum up we may state that:

1. Pituitary extracts have a powerful effect in inducing and in strengthening uterine contractions.

2. The type of contractions induced is similar to that which occurs normally, although at first there may be a tendency to prolongation of the pains.

3. Such prolonged contractions result in slowing of the foetal heart, but the child is seldom in danger.

4. When given in the late part of the first and in the second stage of full time labour the polarity of the uterine contractions is not interfered with, but in early abortions and early in the first stage a simultaneous spasm of the os may occur.

5. Its chief field of usefulness is in the first and second stages of labour, when there is delay due to feebleness of the pains, alone
or when combined with other complications, such as malpositions of head, malpresentations, multiple pregnancy, slight narrowing of the pelvis, etc.

6. In the induction of abortion, in the treatment of abortion already in progress, and in incomplete abortion, its action is so uncertain that it is not to be recommended, except in cases where the os is widely dilated.

7. In the induction of premature labour its effects are uncertain, but if sufficient dosage be given they may be good.

8. In the induction of labour at full term and after better results are obtained than in premature cases.

9. It gives good results in many cases of post-partum hæmorrhage, but is not superior to the various preparations of ergot. It has the power of sensitising the uterus, so as to allow these preparations to act more powerfully, the combination being most effective.

10. It is a useful adjunct in the treatment of placenta praevia, used in conjunction with rupture of the membranes, the use of hydrostatic dilators, or turning.

**BIBLIOGRAPHY**

AARONS: Congrès de St.-Pétersbourg, September, 1910. (Somaine Méd., 1911, No. 1.)


BAB: Münch. Med. Wochens, 1911, No. 34. (Zentrilb. f. Gyn., 1912, No. 8.)


CLAUDE ET BAUDOUIN: Comp. Rend. de l'Acad. des Sciences, Déc., 1911-1513.

COHN: Berl. klin. Wochens, 1911, XLVIII, 1461.


DALE: Journ. of Physiol., 1906, XXIV, No. 3.


FRUKER: ibid., 1912, LI, 832.
ASSOCIATION JOURNAL

GISEL: ibid., 1913, XXXVII, 197.
GRÜBBAUM: Berl. klin. Wochens, 1912, XLIX, 482.
GUSSEw: Zentrbl. f. Gyn., 1912, XXXVII, 1755.
HAGER: ibid., 1912, No. 10, p. 304.
HELL: ibid., 1911, No. 50.
HIRSCH: ibid., 1912, LIX, 984.
HOUSsay: Rev. de la Soc. Méd. Argentine, 1911, p. 268; Argentina Medica, 1911, Nos. 48 and 52.
JACOBY: Zentrbl. f. d. gesammt Therapie, 1913, XXXI.
KÖCH: Semaine Méd., 1913, No. 2.
KRAToCHVIL: (Abstr. Zentrbl. f. Gyn., 1913, 1.)
LINZENMEIER: Zentrbl. f. Gyn., 1913, No. 5.
MACKENRODT: ibid., 1911, No. 23.
MALINowski: ibid., 1912, XXXVI, 1425.
MATTHAI: ibid., 1911, No. 12.
MOMBAICH: Lancet-Clinic, Cincinnati, 1912, 620.
NOWIKOW: Wratschobnaja Gaz, 1912, No. 22. (Zentrbl. f. Gyn., 1913, 14.)
THE CANADIAN MEDICAL

PFEIFER: ibid., 1911, No. 22.
RÉNON and DELILLE: Comp. Rend. Soc. de Riol., 1908, 499.
ROEMER: ibid., 1912, LIX, 2046.
ROSS: Zentrbl. f. Gyn., 1911, No. 34.
SCHÄFER and SWALE VINCENT: Journ. of Physiol., Vol. XVIII.
SHANNIG: Gyn. Rundschau, 1911, 496.
SPAETH: Zentrbl. f. Gyn., 1913, No. 5.
STEIN: ibid., 1911, XXXV, 1113.
STOLPER: ibid., 1913, XXXVII, 162.
STOLTZ: Gyn. Rundschau, 1912, VI, 891.
INTUSSUSCEPTION, ITS DIAGNOSIS AND TREATMENT, WITH A REPORT OF SEVEN CASES

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Statistics teach us that intussusception is the cause of fully 38 per cent. of all forms of obstruction of the bowels; further, that 25 per cent. of all invaginations occur during the first twelve months of life, and 50 per cent. during the first ten years. That it is not, however, confined to childhood is well shown in the present series of cases admitted to my service in the Royal Victoria Hospital, in which the youngest was five and a half months and the oldest sixty years.

Clinically, it may run an acute or very acute, subacute or chronic course, and it is worthy of note that it seems to occur more frequently in healthy individuals who give no previous history of abdominal disturbance. On the other hand, it may be induced by irritation, inflammation, ulceration, new growth, benign or malignant, of the alimentary tract, and occasionally, though unquestionably, by injury or overstrain, as illustrated in Case 5. Rigby (Lancet, 1903, February 7th) has noticed a notable increase in the number of intussusceptions at or about Christmas, probably due to surfeit, and all are familiar with its frequent occurrence at the age of five or six months, at which time other foods are given to supplement the breast supply. These excite irregular peristalsis and lead to invagination.

There seems to be no satisfactory explanation why males are more frequently affected than females. In the present series females predominate. Any part of the intestinal tract may be involved, and in colic and rectal intussusceptions, which are usually very short, the tumour in suspected cases may be overlooked, even when carefully searched for, when it occupies the hepatic or splenic flexures or lies high up in the rectum.

Regarding the relative frequency of location, Eccles and Laidlaw (St. Bart's. Hospital Reports, 1911-12, XLVII) report that
out of a series of seventy-nine cases nine were enteric, five colic, forty ileo-cæcal, and twenty-five ileo-colic. Barnard regards the latter as a variety of prolapse of the small intestine through the ileo-cæcal valve, and offers this as an explanation for its increase in growth at the expense of the entering and returning layers, at least for a period in its development; whereas, all other forms increase at the expense of the sheath.

The symptoms and signs of the clinical varieties of invagination correspond in the main with those due to other forms of obstruction and strangulation of like severity and intensity. Obturation alone may occur from invagination, but in the hyperacute and acute cases strangulation quickly supervenes. This grave danger depends upon the part of bowel involved, the length of the mesentery, the length of the intussusception, possibly upon the intensity of peristaltic movements in the sheath, and certainly upon the degree of toxic irritation and inflammation arising from bacteria and other causes, which is most pronounced in the intussusceptum. An ileo-cæcal invagination may present at the anus, be easily reduced, and when reduced show very little if any vascular changes. Paradoxical as it may seem, invagination frequently occurs without obstruction. Waugh (Lancet, 1911, June 3rd), records a case of ileo-cæcal intussusception in which the projecting bowel extended to the knee, and yet the bowel was not obstructed. The severity of the symptoms does not necessarily bear any direct relation to the length or even to the duration of the invagination.

In many cases, but especially in infants, the diagnosis of the acute variety presents very little difficulty, but in the subacute and chronic forms occurring in youth, middle age and advanced life, considerable perplexity may be experienced in determining the nature of the abdominal lesion, unless the surgeon has at his disposal a clear and concise account of the onset and development of the symptoms, which is frequently lacking in patients referred to the hospitals for operative treatment; indeed, the history one gets from the patient or his friends is frequently misleading. Would it not be well for the general practitioner, who sends his patient from a distance to the hospital for operative treatment for acute abdominal disease, to write a short clear history of the onset and progress of the case while under his care?

The symptoms indicative of invagination develops suddenly as a rule in all varieties; with one exception this is true in our series of cases. Pain is the prominent initial symptom; it may develop during sleep; it is of a colicky character, usually severe, varying in
intensity, and frequently recurring at definite intervals of ten, fifteen, twenty minutes. It is most distressing in the enteric and ileo-colic varieties. At first the patient may have difficulty in locating it, but later he can do so with ease, and in the older patients this corresponds with astonishing accuracy to the seat of invagination.

Vomiting is not so conspicuous a symptom in intussusception as in other forms of obstruction. Nevertheless Waugh (loc. cit.) reports cases with recurring and persistent vomiting to the verge of collapse, and not associated with constipation or strangulation. It is most severe in the early stage of acute cases, but may be absent for hours even in the presence of gangrene, as in Case 3. An examination of a large number of records shows that it varies in intensity and in frequency in the same individual. Further, it seldom becomes stercoraceous. In Case 6, in which there is good reason to believe no stool passed for fifteen to sixteen days, during which time the patient vomited several times a day, the vomitus at the last was not fecal in character. Treeves states that the vomiting gives temporary relief, especially when it appears at long intervals, much more so than in any other form of obstruction.

Constipation is rarely marked except towards the termination of the case. In many, a true diarrhoea exists. In children, mucus stained with blood but without fecal matter may be passed, frequently with violent straining. Bloody mucus with or without stools is less frequently seen in the older patients. In subacute and chronic cases, going on to sloughing and separation of the intussusceptum the stools become very offensive.

Waugh refers to pain in the penis due to dragging on the renal plexus, in some cases of invagination, characterized by unusually long and otherwise abnormal mesenteries.

Distension and metecrism are not early or prominent symptoms of invagination. One should not wait for their development to establish a diagnosis. They are signs of complete obstruction due to occlusion or paralysis from peritonitis.

Local tenderness corresponds like the colicky pain to the seat of invagination, in the subacute cases, and in the later stages it may be marked and is always increased during a paroxysm.

The presence of a tumour in the abdomen or felt in the rectum is pathognomonic of invagination when associated with the symptoms and other signs of this condition. In suspected cases, when not readily found, it should be looked for under anaesthesia. This sign occurs most frequently in the ileo-colic and ileo-caecal varieties.
It varies in shape and size. In children and in the acute cases it is very easily defined, but in subacute cases and particularly after several days it is much less distinct. Rarely two tumours occupying different parts in the course of the large bowel have been felt. In children with acute invagination the tumour is denser, more distinct, apparently larger during a paroxysm of pain. Indeed, in the very early stage it may not be palpable during a free interval.

Visible peristalsis is practically never seen in intussusception; even when complete obturation exists for two or three weeks this sign is not present. Treeves ("Intestinal Obstruction") records but two instances—both acute cases ending fatally on the eighth and eleventh days.

When examining the rectum for an invagination, one must keep in mind the possibility of a polypoid growth, benign or malignant, forming the apex of an intussusception, which lies beyond the examining finger, and if necessary employ the proctoscope.

The temperature is rarely above normal in the subacute and chronic cases, unless complicated by peritoneal infection. It is frequently subnormal in the acute cases. Thirst and distinct diminution in the secretion of urine are less marked than in other forms of obstruction. The general condition of the patient is better than at a corresponding period in other forms of acute obstruction, except in the very acute forms in young children in whom shock and even collapse may appear early.

The prognosis depends largely if not entirely upon the prompt recognition of the condition and upon early treatment. This is especially true in the acute form occurring in infants.

The treatment employed in the seven cases with the result has been briefly stated in the reports appended.

Koch and Oerum (Edinburgh Medical Journal, 1912, IX) make a strong plea for the more common employment of injections in the inverted position for reducing intussusceptions. They admit the more frequent recurrence of invagination and the inability to be sure of reduction by this method, besides, that while perforation is possible, it has only occurred twice in a series of four hundred cases. Moynihan ("Abdominal Surgery") on the other hand, says, "the method is uncertain, deceptive, in that reduction may be apparently complete and in reality be only partial, and by no means devoid of danger." He advocates employing it with an open abdomen as a help to reduction which it rarely completes.

The writer is very strongly inclined to treat all cases of intussusception by operative procedure; nevertheless, in those in which
skilled surgical assistance cannot be obtained, injections should be employed, preferably after a suitable dose of morphia has been given hypodermically, and, if needs be, under anaesthesia. Every precaution should be taken to prevent serious injury to the bowel.

Operative Treatment. In all of our cases morphia was given hypodermically prior to anaesthesia under ether, or gas and ether. Fairbanks and Vickers (Lancet, 1910, February 5th) speak very highly of spinal anaesthesia in a case seven months old. Needless to say, operative procedure should be carried out as quickly as possible and with as little exposure of the body and viscera as is attainable. The incision chosen must correspond to the seat of invagination and should not be too short, thus avoiding injury to wound and delayed healing, and facilitating ready exposure of the invagination and its reduction or operative treatment. The invagination should be reduced by expression if possible, aided carefully if needs be by traction proximal to the neck. If after a fair trial this cannot be accomplished, or if the conditions present denote death or organic fixation of the intussusceptum, then the operator must decide quickly on one of several methods:

1. Lateral anastomosis above and below the intussusceptum restores the faecal flow, but cannot be employed in acute cases with gangrene supervening, though useful in chronic ones.

2. End to end or lateral anastomosis after excising the intussusceptum is the method most frequently chosen by the writer when gangrene is present, but should not be employed in extensive invaginations.

3. The Jesset-Barker operation is particularly applicable to extensive intussusceptions, and is frequently employed in the shorter forms of enteric and entero-colic types. My chief objection to this operation is the danger of soiling and infecting the peritoneum. I do not think it can be as quickly performed as a resection with lateral astomosis.

4. Enterostomy is a doubtful procedure in infants, but is applicable to desperate cases in adults as a temporary measure in impending death from obstruction.

5. Eliot's plan of catheterizing the invaginated bowel by passing a catheter in through the sheath and apex of the intussusceptum until it enters the proximal and dilated bowel is ingenious, but I cannot speak from experience of its utility.

I have not in any case fixed the caecum to the iliac fascia or plicated the mesentery as a means of preventing recurrence of the intussusception; neither have I seen recurrences in any cases
operated on. It has been my custom, however, in reducible cases, particularly in children, to lessen active peristalsis in the intestine by using an opiate for the first forty-eight hours after the operation.

In every case in which vomiting has been a prominent symptom, gastric lavage was employed before the patient left the operating table and repeated if necessary, if persistent vomiting continued.

**Case I.** Arthur P., aged ten months; admitted to the Royal Victoria Hospital, November 13th, 1910, complaining of pain in the abdomen and vomiting.

This patient was referred to my service by my colleague, Dr. Burgess, who diagnosed intussusception and furnished the following history: "The child, a strong healthy male, was in his usual good health until about 2 p.m., on the previous day, when it began moaning and crying and turning over on its face and drawing the legs up during attacks of pain, which recurred every ten to fifteen minutes. Towards evening it vomited a large quantity of sour material and on each occasion shortly after drinking any fluid, until his admission into the hospital. On November 12th he had two semi-formed, chocolate-coloured stools, and a similar one on the day of admission. There was no tenesmus or evidence of mucus or blood in the stools."

On admission, the child is well nourished, but appears to be suffering from recurring attacks of abdominal pain, during which it rolls over on its face. The abdomen is full and rounded, but not distended; there is no resistance or rigidity; but in the upper left quadrant there is an elongated mass easily felt; slightly movable and tender to pressure; nothing abnormal is felt on rectal examination.

A two and one-half inch incision to the left of the mid-line exposed an ileo-colic intussusception, which was readily reduced by expression and slight traction. The caecum and appendix were in their normal position; the latter was removed before closing the wound. The lower ileum was deeply congested and very oedematous. Incision closed by through-and-through sutures. The bowels moved naturally on the second day, and the child was discharged on the ninth day.

**Case II.** Baby A., male, aged five months and two weeks, admitted to the Royal Victoria Hospital, September 1st, 1912.

I am indebted to Dr. Byers, of St. Agathe, for the following notes in this case: "Yesterday morning the child awoke at 6 a.m. in its usual good health, and shortly afterwards had a normal stool. Two hours later the child suddenly uttered a piercing cry, became
pale and covered with a cold, clammy sweat. These cries were repeated during the day at intervals of fifteen or twenty minutes, and were accompanied by straining and the passage of bloody mucus, especially towards the evening. I saw the patient for the first time at night, and on palpation found a sausage-shaped tumour in the right hypochondrium, and made a diagnosis of intussusception which I attempted to reduce by high injections under pressure, but failed to do so. As early as possible the following morning I procured an automobile and brought the child to the hospital, a distance of seventy miles.”

On admission, child was pale; pulse of poor quality; abdomen full, but not distended. A mass could be readily palpated in the upper right quadrant. Immediate operation was undertaken. The abdomen opened to the right of the mid-line, and an ileo-cæcal intussusception occupying the hepatic region exposed. The peritoneal cavity contained a large quantity of clear serous fluid. Persistent traction and expression failed to reduce the invagination. Even after resection it could not be reduced until the neck had been cut. Resection with lateral anastomosis was quickly performed, the peritoneal cavity was filled with normal saline fluid, and the wound closed with through-and-through sutures. The pulse during operation ranged between 120 and 144.

The child’s condition improved during the afternoon, and late at night appeared much stronger. Small rectal salines were given every three hours, which were retained. One-eightieth of a grain of morphia was given at eleven p.m., and the child slept well and seemed much brighter in the morning. Small sips of brandy and water and barley water were given throughout the following day and retained. The child did not vomit after the operation, and at 4.30 passed a dark brown movement slightly tinged with blood. I saw the child at 6 p.m., and felt very hopeful of recovery; but at 7.30 the face suddenly turned a leaden hue, there was difficulty in breathing, and the child died in a few minutes.

Case III. H. F., female, aged fifteen; admitted April 8th, 1913.

This case was referred to the Royal Victoria Hospital on the fifth day of the illness by Dr. Rutherford, of Hawkesbury, Ontario, to whom I am indebted for the following notes: “Patient complained of an uncomfortable feeling in the bowels on the afternoon of April 4th, but was able to take her usual evening meal, and slept well until six the following morning, when she awakened with severe abdominal pain and vomited shortly afterwards. The pain,
with irregular attacks of vomiting, continued all day and less severe that night."

Dr. Rutherford saw her that morning and found tenderness in the epigastric and right iliac regions, but no mass could be palpated. That night, however, he did, and it continued to increase in size until she entered the hospital. The bowels moved on the sixth and seventh days from enemata; nothing abnormal was noticed in the stools. The temperature was normal and the pulse 72. Ice was applied all day, but failed to give relief, and the parents were averse to an operation. They consented on the 8th, the fifth day of the illness.

The patient, on admission, looks pale and ill. She lies on her back with the limbs extended. Has not vomited for twenty-four hours and has retained milk. Temperature 99.2°, pulse 128, running and weak. Abdomen full, but not distended; more or less tense throughout, and distinctly rigid in the right iliac fossa, where an indefinite and tender mass can be felt.

The notes from Dr. Rutherford were not sent with the patient, but were obtained later, so that we were unaware of the afebrile course of the illness. A diagnosis of appendicular abscess, possibly retrocecal, was made, and the abdomen opened by a pararectal incision. Clear, yellowish fluid immediately escaped. The appendix and cæcum seemed normal, but the lower part of the ileum for ten inches was deeply congested, dark in places, gangrenous, and the seat of an enteric intussusception.

Reduction was impossible and not attempted. Resection with lateral anastomosis was performed and the wound closed. A tube was introduced for drainage owing to the necrotic condition of the mass. Patient made a smooth recovery and left the hospital on the 28th cured.

Case IV. Nellie C., aged thirteen; admitted to the Royal Victoria Hospital, August 15th, 1912.

Patient was in good health until two days ago, when she had a sudden attack of pain in the epigastrium, and vomited soon after. The epigastric pain continued throughout the night, but yesterday was referred to the right lower quadrant. She vomited several times on the first day, once yesterday, but not to-day. Her bowels have moved slightly each day, and this morning after an enema. The stools contained neither blood nor mucus, and there has been no tenesmus. On close questioning she admits having had some what similar attacks of pain, ascribed to indigestion, during the last year, but has never been confined to bed with them.
The patient, on admission, is well nourished, lies on the back, but any attempt to turn in bed aggravates the pain in her right side, which she says is cramp-like in character. The abdomen is distended, slightly resistant throughout, tympanitic in front, but slightly dull in the flanks. There is definite and marked resistance in the right lower quadrant and hypogastric region, where an indefinite mass can be felt. The abdomen moves slightly on respiration. The patient looks ill and toxic, and has a temperature of 100°, and a running pulse of 132.

Immediate operation for ruptured appendix was performed, but the incision revealed an enteric invagination, involving the lower ileum. This was very deeply congested and edematous, the peritoneal lustre markedly dulled, and several bluish-black patches near the free border of the intussusciptens were noted. Expression, combined with traction, failed to do aught but lacerate the peritoneal coat in several places. Resection was quickly performed, and lateral anastomosis established about three inches from the ileo-cecal valve. The appendix was removed. A large quantity of slightly turbid fluid which had drained into the pelvis by raising the head of the table during the operation was removed by suction, before closing the abdomen with layered sutures. Twenty-five ounces of normal saline were given intravenously during the operation.

She made an uninterrupted recovery, and was discharged on the thirteenth day after the operation.

Case V. Mrs. E. G., aged sixty; admitted to the Royal Victoria Hospital, May 28th, 1912.

Three weeks before admission, while lifting a tub, the patient was seized with severe pain referred to the right lower part of the abdomen. She was unable to attend to her household duties for the remainder of the day, but did not vomit until late on in the evening. She passed a restless night, but felt better in the morning and was able to do her work. At noon, however, she had another attack of pain and again vomited. Bowels have been constipated, but have moved more or less every day. Previous to this attack she has enjoyed good health. There has been more or less pain and tenderness in the lower right quadrant ever since the last attack. This pain does not radiate, nor has it been associated with any disturbance of urination.

On admission, examination of the abdomen shows no distension, no visible swelling, no peristalsis. The abdomen is flaccid, except in the right lower quadrant, where there is a distinct localized rigid-
ity, marked tenderness, and an indefinite oval-shaped swelling, tender to pressure. Her temperature on admission is 100.4°, pulse 108. Urine, a catheter specimen, shows albumin, red cells, pus cells. There are slight traces of blood in her stools, but no tenesmus; and rectal examination reveals some tenderness in the right side of the pelvis, but no mass.

On May 31st the abdomen was opened in the right iliac region with the intention of draining a localized abscess, secondary to a perforating appendicitis, but the incision revealed an ileo-caecal invagination, irreducible and covered with an adherent omentum. Resection of the mass was decided upon and lateral anastomosis established after closing the large and the small bowel.

The patient's recovery was materially delayed by a left lobar pneumonia and by a subcutaneous infection of the wound, but she left the hospital five weeks later in excellent condition, with abdominal wound healed and the bowels moving naturally.

Case VI. W. S., aged forty-eight. This patient was admitted to Dr. McCrae's service in the Royal Victoria Hospital on April 9th, 1913, in a condition of collapse, and complaining of cramps and of passing blood from the bowels.

The patient was a Russian, and much difficulty was experienced in obtaining a reliable and connected history of his illness. He was in good health until two weeks ago when he was seized with cramp-like pains in the left side, which have been more or less persistent ever since, and interfering with his sleep. He remained in bed for five days and has had frequent attacks of vomiting daily since the onset of the pain. The bowels did not move for eleven days, when an enema was given which seemed to be effectual, and since then he has passed small quantities of blood, but without tenesmus. He has had no headache or fever, but occasional profuse sweatings.

I saw the patient in consultation with Dr. McCrae shortly after his admission. He was pale, cold, and presented the typical appearance of collapse; lips and finger-nails cyanosed; anxious expression; hiccoughing or retching at short intervals; rapid running pulse of 140 and respirations at 40; blood pressure, 90 mm. The abdomen was distended and very full, tympanic in front, with movable dullness in the flanks; no visible peristalsis; doughy, tense and tender all over, but especially along the left side. There was no rigidity and no mass could be palpated. Rectal examination was negative and no blood adhered to the examining finger. There was evidence of hypostatic congestion at the right base. The urine
was acid, showing a trace of sugar, but no albumen. Leucocytosis 15,000. Obstruction was diagnosed and intussusception, partial volvulus, or some form of internal hernia suspected.

The patient's condition was so grave that operation at that time was not considered. Strychnine, oil of camphor and hot rectal salines were employed, and, when he had rallied somewhat, gastric lavage to relieve the almost incessant hiccoughing and retching. Enemata were without result, and no blood was passed.

On the following day there was some improvement and operation was advised, but refused, and it was not until the evening of the 11th that the patient consented to operation.

Bearing in mind the initial seat of pain, the abdomen was opened by a vertical incision at the outer edge of the left rectus, allowing considerable free fluid to escape, and hugely distended coils of small intestines—intensely congested—of a deep purple hue and oedematous. The largest and most dependent coil was punctured, and a quart of bloody, faecal, foul-smelling material allowed to escape. This opening was closed by two concentrically inserted purse-string sutures, placed one-eighth of an inch apart. Two other coils higher up were dealt with in a similar manner, and not less than three or even more quarts removed.

Exploration was now possible, revealing a rather long intussusception at and below the splenic flexure, partially enveloped by the omentum. The abdominal incision was quickly closed by through-and-through sutures, hot saline being poured into the peritoneal cavity before tying the stitches. Then a caecal colostomy was quickly performed through an incision in the right iliac fossa, and a soft rubber tube inserted to drain away the faecal flow. During the operation twenty-five ounces of normal saline containing some adrenalin chloride were transfused and this was repeated twice within thirty-six hours afterwards.

Vomiting was troublesome the next day, but gastric lavage relieved this symptom as well as the hiccoughing for several hours, and was repeated as the symptoms recurred.

In spite of free intestinal drainage, marked improvement in the rapidity and quality of the pulse, and almost complete cessation of hiccoughing, the patient gradually sank and died about forty-eight hours after the operation.

The post-mortem examination revealed extensive petechial hemorrhages of the stomach and small intestines and a very severe gangrenous colitis involving the cæcum and ascending colon, but stopping short at the hepatic flexure and not involving the ileum.
Case VII. Mrs. R. B., aged fifty-nine, was admitted to the Royal Victoria Hospital on March 28th, 1912, suffering from cramps in the abdomen, vomiting, constipation alternating with diarrhoea, steady and progressive loss of weight and strength, and anorexia. These obstructive symptoms were due to a cauliflower-like mass projecting into the rectum which was readily seen by proctoscopic examination.

The abdomen was opened on April 2nd in the left iliac region, and the growth situated in the pelvic colon was carefully palpated and inspected. There were no adhesions and it was not complicated by intussusception. Further examination failed to reveal any evidence of secondary or metastatic foci in the peritoneum, abdominal viscera or mesenteric glands. The first stage of colostomy was performed just above the sigmoid flexure and the bowel was opened two days later. The colostomy completely relieved the obstructive symptoms; the patient’s appetite improved, and rectal irrigation was readily practised through the colostomy aperture.

The removal of the cancer was delayed for several weeks, due to an attack of severe bronchopneumonia, during which time rectal irrigation was abandoned. These were resumed during the latter part of May, but so much difficulty was experienced in getting fluid to escape per rectum that they were again stopped, and we thought that the obstruction had materially increased in size.

The true explanation of the difficulty was apparent when we opened the abdomen on June 10th to perform excision of the rectum, in finding an intussusception of the pelvic colon involving the cancerous mass. The specimen (shown) exhibits the short invagination common in this part of the bowel and is quite irreducible. The apex, with its small aperture, consists entirely of the adenocarcinoma.

It is of interest to note that the patient had not experienced any subjective symptoms of distress, tenesmus or pain in the rectum subsequent to the colostomy until the irrigations had been resumed after having been stopped for some weeks. In other words, we have here an example of symptomless rectal intussusception in the presence of a proximal colostomy. In conclusion, the patient is making a satisfactory recovery, and we hope to close the temporary colostomy in a short time.
INSANITY AND ITS RELATION TO THE STATE

BY COLIN K. RUSSEL, M.D.

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In view of the increasing amount of interest taken by the public in all matters affecting its general welfare, it might hardly seem necessary to advance a special plea for the granting of opportunities for study and investigation to those whose chief interest is to ascertain the surest and best means of promoting rational thought and action.

Much money is spent on our army and navy and munitions of war, and probably rightly so in the present state of affairs, in order to maintain the independence of our country. But would it not be equally foreseeing in this age in which a struggle has begun, a struggle in which science and brains are to take the place of sword and sinews, to organize some concerted and well-directed effort to find out the most efficacious way of increasing the brain power of the nation?

Much money has been spent by a munificent government in investigating conditions about the North Pole, but how much has been devoted to the study and investigation of the causes and prevention of the insanities, a question in which, as I hope to be able to show, we might be much more vitally interested, first from a purely humanitarian point of view, and secondly from the point of view of dollars and cents.

Let us consider this question from the humanitarian viewpoint. At present, in the wealthy city of Montreal, and in the province of Quebec, we have absolutely no place where patients suffering from deranged mental mechanism, it matters not what may have been its cause, or however slight its nature, we have no place, I say, where such patients can be admitted and receive scientific study and investigation and rational treatment. Our great general hospitals, well equipped as they are in all other lines, have absolutely no conveniences for this great class of sufferers. They refuse to admit them, and one cannot blame them altogether. The other patients must be considered; but is it fair that this great

Read before the Montreal Medico-Chirurgical Society.
class of patients should be absolutely neglected? One or two concrete examples might be of interest, and I shall quote only two cases that have come under my care in the very recent past.

One, a young married man with three small children, employed as a janitor, was referred to my out-patient clinic on account of mental depression and an inability to carry on his work. He gave a history of loss of weight with disturbances of digestion suggesting hyperacidity, a general feeling of weakness and loss of ambition and interest in his work. Not being able to perform his duties properly he naturally began to worry, and as time went on and there was no improvement in his condition, he could plainly see his wife and family homeless and dependent on public charity. Mental depression was not unnatural under such circumstances. Examination showed nothing abnormal in the various viscera save, as I have said, the evidences of hyperacidity and a certain impairment of general nutrition. Mentally the patient was very depressed, was not sleeping or eating well, and complained of severe occipital headache. He had no hallucinations or delusions, and there was no evidence of any defect of intellect. It is to be regretted that no bed could be obtained for this patient until he was brought in a week later in the ambulance with his throat cut. The attempt at suicide was made with the most sincere intention, but ignorance balked it, and the wound was sewed up. His reasons for committing the act were that he was feeling so bad, nobody was doing anything for him, and they had threatened to send him to the madhouse, and he was not going to go there. All the time he was in the ward, while his wound was healing, he was perfectly rational, did what he was told, and submitted in every way to nurses and doctors. As soon, however, as his wound healed he was sent to gaol and thence to the asylum as his wife was afraid to have him around. I have seen this man in the asylum since, and am morally certain that if he could have been admitted to a hospital, there would never have been any question of committing suicide, never any question of gaol or the asylum and the consequent stigma.

On the other hand, let me recount the story of another patient with practically identical complaints and under very similar circumstances. He, however, lost his position, and being unable to find new work, was dependent on what his wife could earn. This with her inexperience amounted to ninety-five cents a day, not enough to keep three children and herself and give the patient proper food. This went on for some days, and his symptoms
steadily became worse. He could not apply his attention to trifles happening about him or to unimportant details, and later would not remember them. He then began to fear that his memory was failing—the first step towards insanity, he would think. He naturally enough argued that if the wife were not burdened with himself and the children, she would manage well enough for herself. Such a suggestion to her naturally prevented her leaving him and the children alone, and she was unable to work at all. Fortunately about this time we were able to have this patient admitted, not for the treatment of incipient melancholia, which would have been refused, but because we were able to enter him as a case of gastric neurosis. He has gained 18½ pounds in as many days and his depression has gone. The disappearance of this mental depression coincidentally with the improvement in his general nutrition has given him a peg to hang his mental affections on, and he is free from the horrible fear that he is or was going insane. The nurse in charge says he is the best patient in the ward, and that he is always helpful in every possible way. I mention this to show that this man is no "slacker," but an honest, respectable, individual and one worthy of whatever we can do for him. I feel that in this case we have saved not only his sanity but probably also his life and the lives of the three children, and moreover, this man will go directly from the hospital into work again without any stigma attaching to him.

Such cases might be multiplied almost indefinitely, or one might quote individual cases of unfortunates suffering from maladjustment of the mental gears, giving rise to obsessions or imperative ideas and various other anomalies of thought, action, volition and emotion, popularly referred to as insanity. One might refer to the acute toxic insanities, or the chronic drug addictions, for none of which have we any institution where proper investigation and care can be obtained.

The explanation of this state of affairs is obvious. There is no question that our lack of sympathy for these psychopathic cases arose from our ignorance and our inability to appreciate the disordered functioning of the mind. Disorders of metabolism, derangement of the heart's function or that of the kidneys and other viscera were more easy to study, and it is only in the last few years that any success has crowned the efforts which have been made to understand the causes and the manner of development of disorders of that most important of all functions of our human mechanism, the mind. The studies of Freud in Vienna,
Jung and Bleuler and Dubois in Switzerland, Janet and Déjerine in France, Adolf Meyer and Southard, Münsterberg, Morton Prince and Putnam, and a host of others in the United States, have opened up avenues of approach into this practically unexplored territory.

Let us look at this question for its potentialities in the way of dollars and cents in the province of Quebec alone, not to mention the whole Dominion of Canada. In this province, the care of the insane is under somewhat peculiar conditions, being let out to corporate bodies, religious or otherwise, who are paid so much per capita by the government for the public patients. They are permitted also to care for private patients and to collect from them what fees are judged proper, but of these latter patients no accounting to the government is necessary. It has therefore not been possible for me to obtain absolute statistics as to the number of insane patients in the province nor the actual cost of their maintenance. One can ascertain what the provincial government has to pay annually to these corporate bodies, but as it is a recognised fact that this is not sufficient to pay them for the care of the public patients, they are allowed in compensation to receive and care for private patients of whom they can demand fees. The total cost of these contracts to the provincial government in 1911 was $460,738.36. This is just for the board of insane public patients in the asylums, and does not include the reformatory or industrial schools. It is divided as follows:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Patients</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>St. Jean de Dieu</td>
<td>2000</td>
<td>$215,077.95</td>
</tr>
<tr>
<td>Quebec Lunatic Asylum</td>
<td>1257</td>
<td>138,970.53</td>
</tr>
<tr>
<td>Verdun</td>
<td>515</td>
<td>78,670.45</td>
</tr>
<tr>
<td>St. Ferdinand Asylum</td>
<td>145</td>
<td>16,018.43</td>
</tr>
<tr>
<td>Ste. Anne Asylum</td>
<td>123</td>
<td>2,101.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4040</strong></td>
<td><strong>$460,738.36</strong></td>
</tr>
</tbody>
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We have then in the asylums of the province 4,040 public patients, and their cost to the government is $460,738.36. But as none of these institutions, save the Protestant Hospital at Verdun, issue any report of their private patients, or of the total cost of maintenance of the institution, these figures are necessarily quite misleading. They take account only of the board of the public patients and this was calculated at from $110 to $112 per capita annually in the Roman Catholic institutions and $142 in the Verdun institution. Now if we take the annual report of this
last named institution for 1911, we find that there were in that year practically an equal number of private and public patients admitted. While this probably does not hold equally among the French population who would patronise the Roman Catholic institutions, still one can easily see that we get a very incomplete idea of the number of insane patients in our province from the annual report issued by the government inspectors. In the same report we find that while the grant from the government is $78,670.45, which is the cost per head of so many patients plus the salaries of those physicians on the staff who hold government positions, we find, I say, that the total cost of maintenance of this institution amounts to $168,688.45. It will be seen from this that it is impossible to form an estimate not only of the number of insane patients among our population, but more especially of the cost of their maintenance.

It is not my purpose here to criticize this farming-out method of treating the insane, a method which in Canada, I believe, is peculiar to this province, except to remark on its economy, as far as the government is concerned. At the same time one should recognise that it is not eliminating the cost of the maintenance of the insane to simply shoulder a part of the burden of expense for the public patients from the government on to the backs of those unfortunates suffering in similar ways who happen to have more money. Whether this method is conducive to scientific study, investigation and progress in the matter of the prevention of insanity, I shall leave you to judge.

We might with advantage consider this question as it affects our neighbors of the United States; they have been through our experiences, and we in turn have to meet problems which they have already been through. If then we can profit by their experiences, it may be of considerable value to ourselves as a country. We must recognise first that the population of the United States is 92,000,000, while that of the province of Quebec is about 2,000,000, a fact which is all in favour of the United States, because as our population increases we have every reason to believe the relative number of insane patients will increase considerably more rapidly. I will quote the following statistics from a brochure issued this last year by the National Committee for Mental Hygiene: The cost of caring for the insane in institutions represents a sum which is amazing to those who have not had the matter brought to their attention. The average cost of maintenance for the insane in the United States is about $175.00 per patient (which is considered
far too low), making the total cost during the year 1910, for those in institutions, $32,804,500. As it is estimated that the cost of the Panama Canal will be $325,201,000, and the time for its completion will be about ten years, it is seen that the annual cost of caring for the insane is greater than the annual cost of construction of the Panama Canal. The latter sum is so great that it was deemed wise to distribute it over several generations by the issuance of bonds, whereas the cost of caring for the insane is an annual expense paid from the current revenues of the States. It is also interesting to note that the amount expended in 1910 for the care of the insane in institutions exceeded the amount appropriated by Congress for the support of the executive, legislative, and judicial departments of the federal government.

To this great sum must be added the economic loss to the country through the withdrawal from productive labour of so many people in the prime of life. It has been ascertained that the average value to the community of an adult between the ages of eighteen and forty-five is $700 a year. Upon this basis the economic loss to the country through insanity is over $130,000,000 a year. Adding $32,000,000, the cost of maintenance, we see that the annual cost of insanity to the United States is more than $162,000,000, an amount equal to the entire value of the wheat, corn, tobacco, dairy products and beef products now exported from the United States each year. Experts are provided to study the crop conditions in order to find if there be any way in which the product can be increased and to prevent the invasion of any pest. Agricultural colleges are maintained all over the country for the purpose of teaching the prospective farmer and the unsuccessful one how to get the best results. It seems to me the analogy is perfectly justifiable, and we should demand at least a consideration of the mental health of the community equal to that given to the crops and farm yard products.

The most approximate estimate we can form from the incomplete figures at our command for the province of Quebec shows that the proportion of public patients to the population equals almost exactly the proportion of the total number of insane in institutions to the population of the United States, so that if the private patients were included, the relative proportion in our province would be considerably greater.

I have already mentioned that in the only institution in the province that issues a printed annual report stating the number of private patients admitted, the number for 1911 practically
equals the number of public admissions. The same thing holds good in this institution for 1912. As things are, considering merely the outlay by the government, this means a tax of 23 cents a year on every man, woman, and child in the province as compared with 35 cents a head in the United States, the difference being accounted for practically completely by the higher cost of living in the United States. Not being able to state the exact number of insane patients in the province, it is impossible to work out, save only approximately, the economic loss to the country, but a conservative estimate—basing the average value to the community of an adult on the figures already given—would place the annual economic loss to the province of Quebec at between $4,000,000 and $5,000,000. This of course does not take into consideration the interest on the cost of the buildings or the land on which these institutions are placed. It is a considerable sum with every prospect of increasing annually, for if we again consider the experience of the United States, we find that the number of insane in institutions has increased more than twice as fast as the population.

I think that I have shown that the question of insanity deserves our attention both on account of the amount of money that is involved and even more so because it is inevitable that that amount will reach huge proportions in the course of a very short period of time, especially if we consider the number of the insane and their expense in the whole Dominion of Canada.

I realise that much more could have been said from the humanitarian point of view, but many of you have had such patients suffering from incipient insanity, and to those of you who have, nothing more is necessary. To those of you who have not, I can say that there is no experience that will throw a greater strain on your belief in human charity than to have the responsibility of an individual whose mental mal-adjustment requires removal into a new environment as a preliminary to scientific investigation, and to know that there is absolutely no place or institution which will or can accommodate him. One has then to wait until the unfortunate individual shows sufficient progress of the disease that he may legally be declared insane and committed to an asylum, where from the large number of patients and the small staff of physicians supplied by the government, individual attention or scientific investigation is absolutely out of the question. It is just as if a typhoid patient could not be taken into a hospital until he had a haemorrhage.

The indications in the matter are very evident and it is only
necessary first to refer to the regulation of immigration. In my position as an assistant acting surgeon of the United States Marine and Hospital Service in the Immigration Department in Montreal, I have seen quite a number of insane and feeble-minded individuals who have landed in Canada with the intention of getting into the States, in this way avoiding the much advertised examination at Ellis Island. The result is that these patients, being turned back at the border, are left on our hands. It is only comparatively recently that in one of our hotels such a patient who had come through to us from the States, without provocation shot and killed two innocent individuals, one a young and promising member of our own profession. Was the Immigration Department ever mentioned in the comment following that incident? It apparently never occurred to the newspapers that there was or should have been inspectors on all trains entering Canada from other countries. I could quote other instances that more nearly affected myself. I believe that the government is more careful to prevent diseased cattle entering Canada than they are to keep out mentally deficient and deranged people.

In the matter of mental defectiveness and feeble-mindedness and its relation as an etiological factor to insanity, and also its immense importance to the country from the standpoint of expense, it is only necessary to cite the "Kallikak" family reported recently by Goddard.* I shall just quote his conclusions and resume: "The Kallikak family presents a natural experiment in heredity. A young man of good family becomes through two different women the ancestor of two lines of descendents, the one characterised by thoroughly good, respectable, normal citizenship, with almost no exceptions, the other being equally characterised by mental defect in every generation. This defect was transmitted through the father in the first generation. In the later generations more defect was brought in from other families through marriage, and in the last generation it was transmitted through the mother, so that we have here all combinations of transmissions, which again prove the truly hereditary character of the defect. We find in the good side of the family prominent people in all walks of life and nearly all of the four hundred and ninety-six descendents owners of land and proprietors; on the bad side we find paupers, criminals, prostitutes, drunkards, and examples of all forms of social pest with which modern society is burdened." The cost of such a family to the community is not easily estimated.

Time forbids more than an outline of the measures necessary to counteract such a condition. I would suggest that had we compulsory education of all children, an examination could be made of their mental condition, just as their physical condition is examined at present, and each child could be graded mentally according to the Binet Simon (or similar) tests. Those that showed minor degrees of mental defectiveness, but who were still capable of being educated, could be relegated to special small classes and given special instruction; also those children with minds overbright in certain directions, I mean the embryo genius, could also receive special instruction; while those who eventually proved to be beyond education could be segregated, and thus procreation of their kind might be limited at least, if not prevented.

Besides these measures of prevention another and more important is still to be considered. And here it seems appropriate to protest against the use of the term "insanity." To speak of the insanities as "insanity" is about as discouraging as it would be were the word "fracture" to indicate always a fractured spine. Specify where the break is, and only a few fractures suggest a fatal result. Divide insanity into the insanities and the outlook immediately becomes encouraging. Statistics prove this, for about twenty per cent. of those who are committed to hospitals for the insane recover and remain well, while as many more recover sufficiently to return home, and at least contribute something toward their support during periods of comparatively good mental health. If these percentages of recoveries obtain to-day when crude treatment is still so common, it may be confidently predicted that a larger number of recoveries will result when all cases of mental disorder are discovered promptly and given the benefit of improved methods of treatment which are now available.

What we need here in Montreal is a hospital for the borderland cases—those cases of incipient insanity and those recoverable types whose cure at present is so often jeopardized by the natural distaste of the relatives to have them certified to the regular asylums. It should be connected with one of our great general hospitals and admission to its wards should be readily accessible. No man must be in closer touch with the advances of modern medical science than the psychiatrist, the inter-relationship between mental and physical conditions is so intimate. Crile has recently shown this intimacy in exophthalmic goitre, and the recent work of Cannon on adrenal secretion is very interesting and suggestive. He found that a solution of one in two million of epinephrin in-
hibits the contraction of the longitudinal intestine muscle. Blood taken from the vena cava of cats that had been frightened by a dog produced the same result, but no such result followed in the control. If the adrenals were removed this effect did not follow the excitement.

In such a hospital as suggested delirious cases and drug habitués could receive treatment without the necessity of legal commitment. This hospital could also be in intimate association with a teaching institution, so that the student would receive instruction and familiarise himself with these types of disease, their causes, the means of prevention, and the methods of treatment.

Boston and Baltimore have within the last year erected and opened such hospitals in connexion with their teaching schools. In Boston the new psychopathic hospital has been erected by the State government at considerable expense. It is in close working association with the State Asylum on the one hand, and the police and recorder's court on the other, so that patients can be remanded from these courts for observation and investigation or can be transferred to the asylum with the least possible amount of red tape. In Baltimore, through the munificent generosity of Mr. Henry Phipps, of Pittsburg, the new psychiatric clinic was opened recently,—a most beautiful building where no expense has been spared to secure the most pleasing and restful surroundings, and to furnish everything for the welfare of the patients. The calibre of the men in charge of these institutions, Adolf Meyer in Baltimore and Southard in Boston, is sufficient guarantee that the scientific work of the institutions will be up to a high standard.
PAIN AS A SYMPTOM IN PULMONARY TUBERCULOSIS

By Robert C. Paterson, M.D.

Ste. Agathe des Monts

While pulmonary tuberculosis is generally considered to be a disease which is fairly free from pain with the exception of that due to pleural change, we find that there are other types of pain, and that those which are due to pleural involvement are so diverse in character that they deserve more attention than is usually paid to them. We find also that when these various pains are studied and their origin traced out, they are important in giving us diagnostic information and a basis for our therapeautic measures.

The nerve supply of the lungs and visceral pleura is derived from the anterior and posterior pulmonary plexuses, which are formed chiefly by branches of the pneumogastric joined by fibres from the sympathetic. It is questionable whether there is any sensation in the lung tissue or not. The parietal pleura is supplied from the intercostal nerves by small branches which pass through the internal intercostal muscles. The parietal pleura is extremely sensitive. There is a large skin and muscle area, which has an indirect nerve connexion with the lungs and pleura. The skin and muscles of the neck and arms, supplied by the cervical and brachial plexuses may be influenced by inflammatory changes in the pleura by means of the sympathetic connexion and by the branches of the first and second dorsal nerves, which form part of the brachial plexus. The skin and muscles of the chest and abdomen are similarly influenced by pleural changes through the intercostal nerves and their branches. Pain in these regions, when due to intrathoracic conditions, is spoken of as "referred pain." Another class of pains are the toxic, caused by the absorption of tuberculo-toxins or the toxins of concomitant infecting bacteria or, possibly, by the absorbed poisons of breaking down lung tissue. These may be felt anywhere in the body. They are not yet well understood and are difficult of study and direct proof.

The only pain referred to the lungs themselves is an indefinite, vague ache or discomfort, often spoken of as "lung misery or distress." There is, however, almost invariably more or less pain,
complained of as being in the lungs, but which is superficial. This is felt usually in the infraclavicular, the supraspinous, the inter-
scapular areas, or occasionally over the apices. These pains are not well localized, but are most often felt on the affected side and over the diseased area. They may occasionally be bilateral (the possibility of bilateral disease must in such cases be borne in mind). They are transitory, coming and going without definite cause, vary in intensity from a scarcely perceptible discomfort to an acute pain. At times there is a cutaneous hyperæsthesia. These occur usually in the early stages disappearing later on. Sometimes they are the first symptom, being present even when careful examination will fail to reveal a lung lesion. While the cause of these may be situated in the pleura, evidences of this are usually wanting and the character-
istics of pleural inflammation are not present.

Very few patients pass through this disease without more or less pleurisy, and it may be said that practically every case suffers from this complication to a certain degree earlier or later. The typical pain of dry pleurisy is sharp and lancinating, increased on movement, respiration or coughing; usually localized over the affected area, but sometimes referred; begins suddenly and is severe from the onset. The pain gradually disappears, but may cease suddenly. In such a case it should be remembered that sud-
den cessation of pain often means beginning effusion. While small effusions are very common at all stages, large effusions are more common in the initial pleurisies than in those occurring later in the disease. An effusion, as a rule, gives no pain, but sometimes a feeling of tension or fulness in the side or abdomen may be com-
plained of. The usual sites of pain in dry pleurisy are the axilla, infraclavicular, and interscapular regions. The patient endeavours to limit the movement of the affected side by shallow breathing, suppression of the cough, and by maintaining such a position as will keep the lung as quiet as possible. From this severe, typical pain we find all degrees to a mere discomfort or drawing on deep inspiration, and it is quite possible to have an extensive dry pleurisy without any pain at all. Sometimes patients will have a friction which can be heard without the stethoscope at some distance and which is noticed by themselves, without feeling any pain.

The referred pleuritic pains are important as they may easily lead to a wrong diagnosis. The most important are those referred to the shoulders and arms and often mistaken for rheumatism. The pain may sometimes be felt down to the wrist or hand. There is often a cutaneous and muscular tenderness and sensi

tiveness to
pressure. The explanation of these localizations is probably the sympathetic connexions of the brachial plexus and also the fact that the first and second dorsal nerves form part of this plexus as well as giving off the first and second intercostals. The importance of these shoulder pains, which vary considerably in intensity, has been emphasized by Pottenger, who maintains that they are of great importance in early diagnosis, often being the first indication of disease in the chest, though this may not be tubercular. Another very important group of pains are those referred to the abdomen along the course of the lower intercostal nerves. When acute they may simulate an acute abdominal condition, especially when on the right side, the sharp pain, referred to the abdomen and the rigidity of the corresponding rectus being very misleading. An examination of the chest, in many cases of sudden abdominal pain, will reveal a pleurisy over the lower lobe posteriorly, which will explain the pain and obviate errors in diagnosis and treatment. It is not uncommon to find pleurodynia or neuralgia of the intercostal nerves associated with pleurisy. While this may and does occur during the course of pulmonary tuberculosis apart from signs of pleurisy, and may be caused by toxic absorption or other general condition, it is fairly frequently due to pleural inflammation. The finding of cutaneous hyperesthesia and points of tenderness over the exits of the cutaneous branches of the intercostal nerves near the spine, in the axilla, or near the sternum, should demand an examination of the deeper structures. Mr. Hilton in his little book, "Rest and Pain," was the first to call attention to the fact that the nerve supply of the skin over the joints is the same as that of the joints themselves and of the muscles surrounding them, and he makes the same point clear about the coverings of the chest walls, demonstrating that pain felt in the skin is frequently an indication and a result of deep-seated trouble. When there is a persistent pain, whether slight or severe, unilateral or bilateral, which cannot be accounted for by a pleurisy, we should think of Pott's disease in the vertebra corresponding to the nerve involved. Caries of one of the ribs may give similar symptoms, but this is a rare finding. Occasionally herpes zoster will cause pain for some days before the eruption appears. A pleurisy of the diaphragmatic pleura may occur and is frequently hard to locate. The pain in this is felt usually in the epigastrium and along the costal margin. The physical signs are indefinite. Friction is often not heard and the diagnosis must frequently be made from the symptoms, which are those of acute pleurisy elsewhere, and the absence of signs. This epigastric pain
must be differentiated from that caused by coughing which is really a strain of the diaphragm and upper abdominal muscles. It is often found in patients who have a frequent, hard, dry, unproductive cough, is felt in the epigastrium and along the attachments of the diaphragm, is greatly increased by cough and pressure, particularly over the ensiform cartilage. When a pleurisy occurs in the neighbourhood of the pericardium, particularly near the nipple in the vicinity of the apex of the heart, the symptoms are like those of an acute pericarditis, and the fact that the friction is heard with each heart impulse and is sometimes palpable makes the diagnosis between these two complaints at times difficult. It is a singular fact that the pericardium is not more often involved in pulmonary tuberculosis, when we consider the close relationship of the pleura and pericardium. Occasionally, however, we do meet with an acute pericarditis. When this occurs the pain is felt over the pærcordium and is increased by pressure in the intercostal spaces. It may also be felt during the act of swallowing, especially when it is the posterior part of the pericardium that is involved. An acute inflammation of the peritoneum covering the upper abdominal organs may simulate pleurisy very closely. I have seen two cases in which an acute perisplenitis developed in connexion with a tubercular peritonitis complicating pulmonary tuberculosis. In these the pain was felt in the left side beneath the lower ribs and was increased on coughing and breathing deeply. The peritoneum was painful on pressure in the immediate vicinity. In one there was a distinct peritoneal friction to be heard.

The adhesions which are the almost invariable result of a plastic pleurisy and which are present in nearly every case of pulmonary tuberculosis, often give a certain amount of pain. This is felt as a dragging sensation or feeling of tightness in the chest, is increased on deep movements of the chest, and is frequently most complained of by the patients when the weather is damp. Frequently no signs of these adhesions can be made out, unless those accompanying a thickening of the pleura or possibly some limitation of expansion of the affected lung. Occasionally one of these adhesions will break during a fit of coughing or during violent exertion. When this happens, there is felt a sudden sharp pain followed by soreness for a time. That stretching or tearing of adhesions due to their attachment to the parietal pleura does give actual pain is proved by the induction of an artificial pneumothorax as a therapeutic measure. If adhesions are present when this operation is being carried out; the patient will feel more or less acutely the
stretching of these. The pain occurring in a spontaneous pneumothorax is very frequently not correctly diagnosed till some time after this has occurred. Usually a pneumothorax sets in suddenly, often without apparent cause, with a sharp stabbing or tearing pain. It is usually felt in the axilla, but may be felt in the upper part or front of the chest. It is accompanied typically by dyspnœa and cyanosis and a feeling of distress or anxiety. Movement, cough and even speaking, accentuate the pain. While this is the typical picture, the onset may be less severe and the development of symptoms more gradual. These cases are the ones which give trouble in diagnosis, particularly when the pneumothorax is only partial owing to adhesions.

The presence of superficial cavities in the lungs is sometimes indicated by localized pain, which is pleural in origin. In some cases the area of the cavity can be very accurately mapped out by palpation, the tender area corresponding with the superficial area of the cavity. The patient, usually an advanced case, complains of soreness in some particular spot, which is found to be hypersensitive. A recently formed cavity may frequently be found beneath such localized sensitive spots. So far as my observation goes this only occurs over newly formed cavities, and disappears as the cavity becomes more chronic. Occasionally a haemorrhage is preceded by a feeling of tightness or even by more marked pain, which is relieved when the haemoptysis occurs. While this is not a constant sign of haemoptysis, if on examination, an area of acute consolidation is found beneath the spot complained of, we should be on the look out for this complication, particularly if the patient is subject to recurring hemorrhages.

When the secretion from the bronchi is thick and sticky and coughed up with difficulty, there is often a feeling of soreness beneath the sternum. This is not typical of tuberculosis, and occurs in many cases of bronchitis. A tight feeling or aching pain across the front of the chest and bilateral, often complained of by the patient as a "raw feeling," and much aggravated by cough, should draw attention to the bronchi and the condition of their secretion.

Another cause of substernal pain may be an enlargement of the bronchial glands. In this the pain is more constant and of a different character, being more an uneasiness, a sensation of weight or irritation. One of my patients described it as a burning feeling. Another site of pain from this cause is in the back at the level of the fourth dorsal vertebra. There is certainly enlargement of these glands in all cases of pulmonary tuberculosis, but it is only in cases
in which the enlargement is considerable or very acute that symptoms are produced. Dysphagia may also be caused by pressure on the œsophagus by these enlargements.

Thus far I have endeavoured to describe pains occurring in the chest during the course of pulmonary tuberculosis and some of those pains caused by complications in this region of the body. Without trying to describe the pains which are due to tuberculosis of other organs and which may be met with as complications in the course of pulmonary disease, I wish to mention briefly some of the more common pains felt in the various parts of the system, which are due to the circulating toxins of the tubercle bacillus or secondary infecting organisms, and which are thus due to the disease in the lungs and not to definite tuberculosis of other organs. Headache need only be mentioned as a very common and at times distressing symptom. This is sometimes so severe and constant that a beginning meningitis is simulated. In a few cases a condition of toxic meningismus is present in which the absence of meningitis is only made certain by the fact of recovery. I have seen one case of this condition in which there was severe and continuous headache, a generalized cutaneous hyperæsthesia, vomiting, a certain amount of mental dulness, and other signs resembling a meningitis. A cutaneous hypersensitiveness, either localized or general, sometimes gives the first indication of meningeal involvement. Neuritis of various nerves occurs as a result of toxic absorption in pulmonary tuberculosis. Pathologically there is a true tubercular neuritis with tubercles in the nerve substance. There may also be a pressure neuritis caused by enlarged glands, axillary, cervical or bronchial, and a neuritis of the intercostal nerves from involvement of the nerve in a pleural inflammation, but besides these three we can also have a toxic neuritis, comparable to that caused by alcohol or lead poisoning. The symptoms of this do not differ from those of other forms of neuritis. Akin to this, but more or less transitory, are the neuralgias, due to the same cause, the intercostals and the sciatic being the nerves most commonly affected, though any nerve may be involved. Myalgia also frequently occurs, from the same cause. The muscles feel tired and sore as though over-exercised, strained or bruised. Those most commonly affected are the pectorals and biceps and those of the back and neck. Finally there is an interesting group of joint pains, which are usually diagnosed as rheumatic. Poncet has given a very full description of what he calls "Tubercular Rheumatism," which is quite a different condition from tuberculosis of the joints and which closely simulates,
in everything except etiology, acute articular rheumatism. It is said to be due to a small number of bacilli of low virulence or to the toxines of bacilli growing elsewhere in the system. The severe and generalized arthritis which is seen during a tuberculin reaction is an example of this toxic joint pain. Further there are the arthralgias, corresponding to the neuralgias and myalgias. These occur as vague, sometimes severe, pains especially in the large joints. The pain may be slightly increased by motion and pressure, but is usually unaffected by this. They come without apparent cause and often disappear suddenly to appear in some other joint. They may affect several joints simultaneously and on disappearance leave no traces. The characteristics of these pains are their transitoriness and the absence of all objective signs.

In conclusion, let me emphasize the fact that, while pulmonary tuberculosis is a comparatively painless disease, there occur a considerable variety of aches and pains, whose recognition and differentiation is important. We are apt to look on the majority of patients with this disease as neurasthenic and to ascribe many of their complaints to this cause. In so doing there is a danger that an organic basis for their pains may be missed and treatment wrongly directed or else neglected altogether.
RETROPERITONEAL HAEMOTOMA AS A CAUSE OF INTESTINAL OBSTRUCTION

By A. R. Mader, M.D., F.R.C.S.

Halifax

INTESTINAL obstruction is such an important condition that I think myself justified in detaining you a moment to consider this uncommon cause. Retroperitoneal haemotoma complicated by acute intestinal obstruction has been several times successfully operated upon. There are very few such cases noted in the literature, but I am of the opinion that many deaths from obscure abdominal affections are really due to this cause. Reports of pathological societies not infrequently give notes of cases of deaths without operation, where a large collection of blood is found in the retroperitoneal tissues and some of them note a collapsed portion of the intestine. These patients have been usually brought to the hospital moribund, with symptoms of intestinal obstruction. The loss of blood alone would perhaps not cause death had not the intestinal functions been interfered with. Death is really due to the toxæmia of intestinal stasis in a patient suffering more or less from loss of blood.

It will be admitted that any case of trauma about the abdomen such as that produced by a haemorrhage of considerable size in the retroperitoneal tissues, may by reflex action upon the neuro-muscular mechanisms of the intestine, cause failure of peristalsis, resulting in obstruction and stasis of the faecal current. It is also true that when an anatomical cause of obstruction is also present in a given cause, the condition is doubtless mixed, the nervous factor causing a moderate paresis, which together with moderate mechanical pressure from the blood tumour may produce absolute stasis. In other words, less pressure from a collection of blood, say behind the duodenum or colon, between the layers of the mesentary or in the wall of the intestine, would cause obstruction, if the neuro-muscular influence caused more or less paresis of the intestine at the affected part only, or more generalized as the case may be.

Chronic cases also occur where the pressure of a haematoma brings about only partial obstruction. These haemorrhages are the chief cause of cysts in the mesentery and omentum and also sup-
puration of the retroperitoneal space. These secondary conditions, especially mesenteric cysts, not infrequently cause obstruction.

Traumatism and disease of the arteries are the chief causes. In many cases no cause can be ascertained. The strain on the vessels in labour has caused this accident in a recorded case. In several cases an injury in another region was associated, such as a thigh fracture. Such a case which terminated fatally was reported by Wagstaff in 1895, but apparently he overlooked the intestinal element of the case. Robert Stewart reported a case in 1909 of a girl of thirteen who died from intestinal obstruction due to a hæmorrhage in the wall of the jejunum high up. It is remarkable that this condition followed a blow on the back in the mid-dorsal region, not severe enough to leave any external evidence, and which only detained the child a few minutes from her play. Vomiting, however, soon began, but absolute obstruction probably did not occur before gangrene of the affected part supervened. The operation, which was performed three days after the accident, failed to save the patient.

Mursell reports the case in 1905 of acute obstruction due to retroperitonal hæmorrhage, which he successfully operated upon. His case developed ten days after normal accouchement. The hæmatoma which was present since a previous labour three years before, but was augmented by a fresh hæmorrhage in the cyst-like mass, caused obstruction by pressure on the descending colon. The hæmorrhage was well above the pelvis in close relation to the left kidney, and had no relation to pressure or injury about the uterus. The increased blood pressure during straining was doubtless responsible for the rupture of the small vessel in the retroperitoneal tissues. Hæmorrhage within or behind the peritoneum does not infrequently occur in labour, quite above and apart from any trauma about the pelvis.

Injury from foreign bodies in the intestines has caused this complication. I have had the opportunity of observing a case of right-sided hæmotoma, involving the retroperitoneal tissues behind the colon from the hepatic flexure to the head of the cæcum. The cause here was almost certainly trauma from a foreign body within the colon, which had been swallowed six hours before the pain in the region of the gall-bladder began. The foreign body was the needle-like, straight, strong bone from the fin of a ling. The patient administered a large enema about six hours after the accidental swallowing of the substance (ling fin). I have no doubt the contraction of the colon while expelling the water, found the sharp
pin-like bone situated horizontally in the colon at the hepatic flexure, and pricked a small vessel behind the colon in the retro-peritoneal tissue or meso-colon. The condition was mistaken for appendicitis and operated upon twenty-two hours after the initial symptoms. No bleeding vessel was found, but the hæmatoma which had occupied the ascending meso-colon from the head of the caecum to the hepatic flexure and had peeled the peritoneal coat partly from the colon was drained, and the patient, a man over forty-five, made a good recovery.

Such masses have been cut down upon, and when a large blood clot was found the operation was abandoned. The size of the hæmatoma is not necessarily in direct ratio with the size of the vessel which began to bleed. The snap diagnosis that a large aneurism has ruptured, and the fear of having a death on the table, I believe have occasionally caused a curable case to die from surgical abandonment.

The rupture of a tiny vessel in the areolar tissue between the layers of the mesentery, or elsewhere outside the peritoneal sack, may produce a very large collection of blood. It apparently peels the peritoneum from the tissues and organs which are enveloped by it, and new bleeding points are produced. It is only after sufficient lowering of the blood pressure, and increasing of the intra-abdominal pressure by the collection of fluid, the accompanying rigidity, and perhaps intestinal paralysis, that spontaneous arrest of the hæmorrhage obtains. The condition of the blood itself must be an important factor. Some cases become arrested spontaneously when only a small tumour is formed. It may be impossible in a given case to find where the hæmorrhage began on account of the distance which the fluid has burrowed.

The production of such a condition from rupture of a vessel in the wall of a small serous cyst or caseous gland, while possible, is most unlikely to occur. Hæmorrhagic cysts, however, not infrequently have repeated hæmorrhages causing them to increase in size from time to time. In malignant growths, especially Lobstein's cancer, severe retroperitoneal hæmorrhages occur.

The difficulty in diagnosing a retroperitoneal hæmorrhage while it is going on, is no doubt great. The agonizing pain of thrombosis of the mesenteric vessels, or acute pancreatitis, is absent. The pain is of a sore or dull character. It is less severe than in peritonitis. The persistent vomiting, with slow pulse, subnormal temperature, and the facies of a grave abdominal condition, with physical signs of localization, should cause us to think of the pos-
sibility of a hæmorrhage behind the peritoneum, producing intestinal obstruction, when planning the abdominal incision. I fear some such cases have failed to be diagnosed after opening the abdomen.

Remove a suspicious, but for the time harmless, appendix, and drain the peritoneum, and you may save a case of unrecognized perforated duodenal ulcer; but if a hæmatoma compresses some part of the intestinal canal, and you fail to find it, your patient will more quickly die.

BIBLIOGRAPHY

1. Lancet, November 10th, 1904.
2. British Medical Journal, October 12th, 1907.

The report of the medical superintendent of the Eastern Hospital for the Insane, at Brockville, for the year ending October 31st, 1912, contains the following information: 168 patients—87 men and 81 women—were admitted during the year; the ages of the patients ranged from 17 to 90 years. On admission the cases were diagnosed as follows: dementia praecox, 61; manic depressive, 39; senile psychosis, 34; melancholia, 4; epilepsy, 6; alcoholism, 7; paresis, 3; infective psychosis, 5; imbecility, 4; tabetic psychosis, 1; Huntington's chorea, 1; paranoia, 1; hysteria, 1. One hundred and eight cases were reported to have been ill for less than a year, ten for less than two years, fourteen for less than three years, twenty-three for less than ten years, five for less than twenty years, and eight for more than twenty years. During the year eighty-two patients were discharged; these included fifty-two recoveries, twenty-seven improved, and three unimproved cases. Among those discharged were some who had been in the hospital for six, seven, or even nine years; they are said to be doing well. The death rate was rather high, thirty-seven men and thirty-three women dying during the twelve months under consideration.
Case Reports

MEDIASTINAL ABSCESS

The case I am about to relate presents features of very unusual interest. A boy of fourteen began to complain of pain in his right side, about the end of March, 1911. Dr. Gear, of Erin, was called to see him, and found a friction sound in the whole right side, temperature from 101° to 102°, and pulse between 84 and 90. He continued in that condition for about a week, when suddenly he became collapsed, and the doctor was called in haste to see him. He found him in great distress with his breathing, with temperature subnormal and pulse feeble and very rapid.

I first saw him on April 2nd, and found him in collapse, surface cold, temperature beneath the tongue 96°, in rectum 99°, the pulse so feeble and rapid that it could not be counted. His colour was grayish and he was extremely restless. Examination of the chest showed no dulness on either side, but the friction sound still in the right. There was marked dulness over the precordia, and extending down in the space between the costal cartilages about two inches. The heart sounds could be feebly heard behind the sternum at the level of the second costal cartilage, but no impulse could be felt.

A diagnosis of fluid in the pericardium was readily arrived at. The patient's grave condition made it impossible to use an anaesthetic.

About half an inch from the left border of the sternum in the space between the fifth and sixth costal cartilages, I passed an exploring needle and found pus. Using cocaine this opening was enlarged by a tenotomy blade, so that I was able to pass a sinus forceps and, by its aid, a fair-sized rubber tube. A free discharge of pus occurred, and in a few minutes the breathing became easier, and the patient expressed himself as being much relieved. From this date he gradually improved, yet it soon became difficult to keep the tube in the pericardium, and consequently the discharge was more or less intermittent. For this reason it was decided to make a freer opening under an anaesthetic, the use of which now in

Read at the annual meeting of the Canadian Medical Association, London, Ont., June 20th, 1913.
his improved condition was considered safe. This was done on April 13th. The pulse was now of fair volume and the temperature 99° to 100°. Under an anaesthetic the opening was freely enlarged, and the pericardial sac explored with the finger. It was now found that there was an opening in the posterior and right side of the pericardium large enough to admit the finger easily. A large probe, guided into this opening passed in a line straight backwards, almost to the spinal column. A large-sized rubber tube was passed through the pericardium into this posterior opening, a distance of four or five inches and secured by suture. Pus continued to discharge in considerable quantity for some weeks, but the patient steadily improved and in two months was quite recovered.

Remarks. When Dr. Gear first saw this patient, there was nothing in the case to indicate that it was anything more serious than an attack of pleurisy involving the right side. The pain, the temperature, and the pulse all indicated only a mild case of pleurisy. With a pulse not exceeding 90 and of good volume, we may fairly exclude the possibility of effusion in the pericardium. Within one week collapse suddenly occurred, and the boy was found in a desperately critical condition, so very ill that the doctor supposed he would die within a few hours. A reasonable explanation for the course of the illness, and the sudden occurrence of this collapse suggests itself to my mind. I think we may assume that a large abscess in the mediastinal space had been slowly developing for some time, and that the pressure and infection from this abscess caused the occurrence of pleurisy. This abscess opened communication with the pericardium, and the discharge of pus into the sac was immediately followed by the attack of collapse.

The occurrence of abscess in the mediastinal space is not often referred to in any of our text-books or in medical literature. Such an abscess may be caused by bone disease, as, for example, of the vertebral column, the sternum, or the clavicle, or by some disease of the oesophagus or by the softening of tubercular glands about the bronchi at the root of the lung. Had the abscess in this patient perforated into either pleural cavity, nothing more grave than a large empyema would have been the immediate result.

It was an easy matter to find the posterior opening in the pericardium, but it would be very difficult if not impossible to find the opening if the mediastinal abscess had perforated into the pleural cavity, because of the immense size of the pleural cavity and the consequent difficulty in exploration. Very probably this is the true pathology of at least some of the cases of empyema that go.
on to a fatal issue, notwithstanding the most ample drainage of the pleural cavity.

In a long experience I cannot recall a single case of recovery from a condition that seemed so desperate. After a few ounces of pus had drained away, his condition changed in a marvellous way. His colour immediately improved. He said he felt better, and it was easy to find the change in the volume and force of the pulse.

Guelph.

A. MacKinnon, M.D.

TORSION OF THE CAECUM, ASCENDING AND HALF OF THE TRANSVERSE COLON; WITH OPERATION AND RECOVERY

The comparative rarity of acute obstruction of the large bowel due to kink or torsion warrants the recital of the following case.

Fred B., age twenty-five years, entered the City Hospital, Hamilton, on February 26th, 1913. He had contracted pneumonia about ten days previously and was still suffering more or less from the effects of that disease. His previous history was excellent. On the afternoon of March 1st, he was taken with acute pain in the upper part of the abdomen. The severity of the pain did not last long and there was no particular rigidity. During the night, however, the pain became more severe, and, on the advice of his attendant, morphia was administered to him. I saw him with Dr. W. F. Langrill the following morning, about twenty-one hours after the initial pain. The patient looked very ill, and appeared to be in considerable pain. He had an anxious facial expression. His temperature was 98° F.; pulse, 132, small and weak. The abdomen was distended, being especially prominent below the costal arch. There was general tenderness over the abdomen, and the surface of the body was moist.

A tentative diagnosis of perforation of the duodenum or stomach was made. The patient was quickly removed to the operating room and a median incision made in the upper abdomen. A bluish black sack, about eight inches in diameter, presented itself, which was quickly recognized as distended large bowel. This
bowel completely filled the upper half of the abdomen. The abdominal incision was increased downwards a short distance. A trochar was then inserted into the bowel and a large quantity of foul-smelling gas escaped, together with some brownish fluid. The trochar was then removed; the opening in the bowel clamped, protected with gauze, and then by gentle traction the injured gut was withdrawn from the abdomen. The last portion which came out of the abdomen was the cæcum, appendix and attached ileum which had been lying over in the left upper quadrant of the abdomen. The transverse colon was fixed at its centre to the posterior parietal peritoneum, anterior to the abdominal aorta. It was here that the kink took place in such a way that the cæcum and splenic flexure both occupied the upper left abdominal quadrant. All of that portion of the large bowel to the right of this point was dead. The ileum was also very much distended. The omentum was thickened at the point where the kink took place, but that portion of the transverse colon to the right of the kink was devoid of omentum. The dead bowel was quickly cut away and two Paul's tubes inserted; one into the proximal end of the divided ileum and the other into the distal end of the divided colon. These tubes were attached to rubber tubing and projected from the abdomen. The abdominal wound was then closed up to these tubes with interrupted sutures of silk-worm gut. Two pints of normal saline were given under the breasts and the patient then was placed in bed in a semi-Fowler position. A considerable amount of fluid drained away from the small bowel during the first twenty-four hours. Saline was administered by the rectum, but it was found if too much was given some escaped from the tube which was attached to the colon. The fluid which was given by the mouth was not absorbed by the stomach or small bowel with the exception of a very small part—on an average only about one-fifteenth part. For eight days the drainage was kept up, and then, owing to the rapid loss of flesh of the patient, it was deemed advisable to perform the second operation. The patient was again anaesthetized and the abdomen re-opened. The ileum was closed with a purse-string suture and also the end of the transverse colon. A lateral anastomosis was then made between the ileum and sigmoid colon, and the abdominal wound closed with interrupted sutures of silk-worm gut. Ten days after the second operation there was a small amount of discharge from the abdominal wound. This was probably from an infection from the colon. The patient rapidly gained in weight and was able to be up and
around the ward on the seventeenth day after the second operation. The abdominal wound quickly healed and the patient has been in good health since.

It was very interesting to note the very small amount of fluid which was absorbed by the stomach and small bowel. As soon as the ileum was joined to the colon the patient gained in weight and flesh.

Two months after leaving the hospital the patient returned complaining of pain in the abdomen. This pain, however, quickly subsided and he has enjoyed good health since. He has returned to work and complains of nothing.

An x-ray of the abdomen was taken after injecting a solution of bismuth into the rectum and the remaining colon was distinctly outlined. This kink was due to a developmental defect, the right half and ascending portion of the colon and cæcum never having become attached to the peritoneum in the proper position.

Hamilton

INGERSOLL OLmSTED, M.B.

The plans and specifications have been prepared for the hospital for advanced cases of tuberculosis, which is to be established at St. John, New Brunswick. Some difficulty seems to have arisen concerning the site selected and objection has been raised by the residents in that part of the city. It is probable that another site will be chosen.
Editorial

INCIPIENT TUBERCULOSIS

It is a regrettable fact that of the cases of pulmonary tuberculosis admitted to sanatoria, even to those which aim to accept none but early cases, only about twenty per cent. can truly be classed as incipient. The reasons for this are not far to seek. The onset of the disease is so often insidious, and such symptoms as may be present seem so trivial, that the patient either ignores them or if he consults a physician, refuses to heed his warning or follow his advice. But it is by no means the patient who is always to blame. The responsibility lies largely with the physician. Dr. Vrooman, whose earnest paper on this subject appeared in the July issue of the Journal, is probably right in his estimate that at least fifty per cent. of the advanced cases which have come under his notice at the Tranquille Sanatorium "became advanced because some general practitioner who saw them in the early stages failed to make the diagnosis or even if suspecting the proper diagnosis, failed to recognize the serious significance of the symptoms, and gave most improper advice."

It is the experience of some sanatorium physicians that most of the incipient cases are sent in by a few medical men, who are not always city specialists, but in many instances country practitioners who have had personal experience with the disease. The physician who is too ready to suspect tuberculosis is the exception. When the history and physical signs are suggestive, he should have the courage—it is sometimes needed—to tell the patient his suspicions, and to insist on repeated and thorough physical examination and the keeping of a proper temperature record. The sputum should be frequently examined, being sent, if necessary to the board of
health laboratories. The tuberculin test is often of great value. In short, no procedure should be shirked till the diagnosis is established or rendered extremely improbable. It is frequently difficult to reach a decision.

Unfortunately, the ideas of the specialist and the average practitioner as to what constitutes early tuberculosis are widely different. The delicate changes in the respiratory murmur and the fine, localized rales which precede the stage of evident consolidation, are apt to elude the ear of one who has not made himself expert in the use of the stethoscope. In the campaign against tuberculosis more has been done to educate the public than the profession, which after all constitutes the first line of defence. But "Quis custodiet . . ."—or rather, quis docebit ipsos doctores? The answer is that the special dispensaries which exist, or should exist, in all the teaching centres, ought to be used systematically and thoroughly for the instruction of both students and graduates; and, further, everything should be done to hasten the day when the final-year student shall be encouraged, if not required, to spend a week or two in virtual residence at a sanatorium. If it is objected that he is already overworked, so much the more reason. He could not spend a more profitable holiday. The difficulties should not be great. It is largely a matter of funds and of co-operation between the medical school and the sanatorium. Adequate knowledge of pulmonary tuberculosis cannot be acquired in the wards of a general hospital.

Moreover, some familiarity with sanatorium methods is necessary for the proper treatment of a case. It is not so much that the sanatorium cures the patient, but it teaches him how to cure himself and stay cured. Home treatment is, of course, feasible and often necessary. But, whenever possible, it should be preceded by a stay, no matter how short, in a sanatorium, for there the patient soon learns the many details which are so important for himself and his friends,
and which the occasional visits of doctor and nurse cannot teach him.

Thanks to the initiative of Dr. Eugène Grenier, a series of short practical courses for physicians in the diagnosis of early tuberculosis has been given in Montreal this summer at the Institut Bruchési. These, we learn, have proved a decided success. The attendance has exceeded all expectations, proving that the need for such instruction is widely appreciated. It is also gratifying to learn that at Laval University a chair of phthisiotherapy has been endowed, to which Dr. Dubé has been appointed. The example of our French-Canadian confrères is to be commended.

EVIDENCE FOR VACCINATION

In view of the uncertainty which always exists, in more or less definite degree, in the public mind concerning the efficacy of vaccination as a preventative against smallpox, the findings of the Pennsylvania State Medical Commission are of interest. The Commission was appointed in June, 1911, and its report has now been issued. The members of the Commission were: Professor William H. Welch, of Johns Hopkins University, and Professor Jay Schamberg, of Philadelphia; Mr. John Pitcairn, president of the Antivaccinationist League of America, and Mr. Porter F. Cole, secretary to the League; Mr. Emil Rosenberger, attorney-at-law; Mr. Henry C. Lippincott, manager of a life insurance company, and Mr. Edward A. Woods, president of an insurance agency. Thus the committee consisted of two members in favour of vaccination, two members opposed to the measure, and three unprejudiced members. Twenty-five medical men testified in its favour, and five gave evidence against it. The report concludes that successful vaccination protects against smallpox for a period of from seven to ten years, that persons who have been successfully vaccinated twice are immune against
the disease, that vaccination performed in infancy and not repeated ensures a less severe attack of smallpox, and that the procedure is relatively harmless and has no available substitute. The report was not signed by Mr. Pitcairn and Mr. Cole, nor by Mr. Lippincott. Mr. Rosenberger and Mr. Woods, however, warmly advocate the practice of vaccination.

The report of the Pennsylvania State Medical Commission merely substantiates the opinion expressed by other commissions, which from time to time have investigated this much-discussed question. For instance, we may mention the Commission appointed by the British House of Commons in 1802, by the Danish Legislature in 1804, by the Royal College of Physicians of London in 1807; the German Vaccination Commission appointed in 1886, and the Royal Commission on Vaccination appointed in 1896. Then again, during the present year the Upper House of the Manx Legislative Council threw out a Bill providing for the recognition of conscientious objection to vaccination.

DOMINION REGISTRATION

DURING the past six months many communications have reached us—and not a few of them from the United States—asking for information as to the requirements for registration under the Canada Medical Act. We are glad, therefore to be able to publish the "Announcement" of the Medical Council of Canada, which we have received from the registrar, Dr. E. W. Powell, of Ottawa, and which will be found on another page. Those who may desire to secure Canadian registration without examination by virtue of their registration of ten years' standing in one of the provinces, would do well to take note of the proviso attached to this clause of the Act. Under this proviso, which has occasioned some surprise and disappointment, the practitioner who has thus obtained his Dominion license may still be subjected to examination in
final subjects by the Medical Council of the province in which he wishes to register. British Columbia, however, is the only province whose Council has as yet declared its intention of putting the proviso into effect. The other provinces, we understand, are prepared to accept such candidates without examination.

The first number of a new quarterly, The British Journal of Surgery, has recently been issued. It is under the direction of an editorial committee, of which Sir Berkeley Moynihan is chairman and Mr. Hey Groves, of Bristol, editorial secretary, and which comprises the names of twenty-eight distinguished surgeons of Britain and Ireland. In a brief introduction Sir Rickman Godlee explains the objects which its founders have in view, pointing out that "if justification is needed, it may be found in the fact that, while in all other countries in both hemispheres where the study of surgery is most active, there are special journals devoted to the subject. In Great Britain alone the progress of surgical thought and enterprise is for the most part only recorded in publications which embrace the whole subject of medicine." And, indeed, one can only wonder why the British Journal of Surgery has not been in existence these many years, for, to judge from this initial number, it is destined to occupy a foremost position among scientific journals, a position commensurate with the importance of British surgery.

The first issue comprises about one hundred and fifty pages. The frontispiece is, appropriately, a portrait of Lister; and the contributions are as follows: "Symptomless renal hæmaturia," by David Newman; "Gall-stones," by D'Arcy Power; "Perineoscrotal dermoid cysts," by Albert Carless; "Marginal resection of the tongue," by Sampson Handley; "Autoplastic graft of fibula into humerus," by H. M. Davies; "Fractures of the spine of the tibia," by Robert Jones and S. Alwyn Smith, of Winnipeg; "Intratracheal anæsthesia," by
R. E. Kelly; "Recent methods of anaesthesia," by F. E. Shipway; "The nature of surgical shock," by A. R. Short. Interesting features are a series of case reports under the heading, "Instructive Mistakes," and short notes of rare cases. There are nearly seventy illustrations, the majority of which are reproductions of x-ray photographs, all wonderfully clear. The illustrations, in colours, accompanying Dr. Newman's article are particularly natural. The general appearance of the Journal and the character of the press work are, as one would expect, excellent. The publishers are Messrs. John Wright, of Bristol, and The Macmillan Company of Toronto.

According to the last will and testament of the late Professor Emil C. Hansen, of Copenhagen, a fund has been established for the purpose of conferring a gold medal upon the author of a recent distinguished work upon some microbiological subject. The medal will bear the effigy of the donor and will be accompanied by at least 2,000 Kroner; it will be awarded on the eighth day of May, the birthday of Professor Hansen, at intervals of two or three years, beginning in 1914. Next year the medal will be given to some scientist in the field of medical microbiology—comprehending the morphology, biology, and mode of action of the microbes pathogenic in man or animals. The trustees of the fund are the chiefs of the two departments of the Carlsberg laboratory, and a Danish biologist elected by the governing body of Carlsberg laboratory. The recipient of the medal will be designated by a committee composed of the trustees of the fund and two, or more, foreign microbiologists. Professor Calmette, of Lille, Professor Gaffky, of Berlin, and Professor Theobald Smith, of Boston, are the present members of the committee. Further particulars concerning the fund may be obtained from the president of the board of trustees, Professor S. P. L. Sorensen, chemical department of the Carlsberg Laboratory, Copenhagen, Denmark.
A measure is shortly to be introduced into the provincial council of the Orange River Colony, which will provide for the establishment and management of hospitals and charitable institutions in that State on much the same lines as has been done in the Cape Province. As the ordinance stands at present, it provides that there shall be no medical representation on the controlling board of institutional committees; and that the provincial government shall pay two-thirds and the municipality one-third of the deficit on the expenses incurred. Both these points are open to criticism, the latter because the suggested method of meeting expenses will encourage neither voluntary subscriptions nor munificence on the part of municipalities.

Among the honoured members of the profession is Dr. Robert Bridges, the recently appointed Poet Laureate. Dr. Bridges is in his sixty-ninth year. He was educated at Eton and at Corpus Christi College, Oxford. The early part of his career was devoted to the practice of medicine in London, but for nearly thirty years now he has lived quietly at Oxford. He is the author of several plays, poems, and critical essays.

The sum of £8,500 has been allotted to the widow of Dr. Edward Adrian Wilson, by the Mansion House Committee of the Captain Scott Fund.

A bill has been introduced into the Paris Chamber of Deputies by Mr. Bernard Augé, requiring that persons desirous of obtaining a license to drive an automobile shall present a certificate stating that they have normal eyesight and hearing, a good constitution, and no affection of the heart, pleural cavity, or kidneys, which might render them unfit for such occupation. Mr. Augé is of the opinion that in many cases automobile accidents are the result of illness on the part of the chauffeur.
The twenty-third annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, on Wednesday, October 32nd, 1913. A very interesting and attractive programme has been arranged. Dr. Hugh H. Young, of Baltimore, will deliver the "Address in Surgery." Railway surgeons, attorneys and all members of the medical profession are cordially invited to attend. The corresponding secretary is Dr. George Chaffee, 338 Forty-seventh Street, Brooklyn, New York.

The third annual congress of the Canadian Public Health Association will be held in Regina on Thursday, Friday and Saturday, September 18th, 19th and 20th, 1913. The programme of papers promises to be an exceptionally attractive one, and the provincial government and the city of Regina will co-operate in the entertainment of the delegates.

Professor Alessandro Bruschettini, of Geneva, has prepared a "vaccine serum," with which he claims to have obtained encouraging results in the treatment of tuberculosis. Another serum for the treatment of the disease is the "contra-toxin," prepared by Dr. Frederick Menharto, of Heidelberg. In a letter to the Lancet, dated May 28th, 1913, Dr. Menharto says: "Contra-toxin is a mixture of the blood plasma of various animals, mixed in proportions calculated to produce a lytic action on various micro-organisms without producing lysis of the human red corpuscles."

Bulletin No. 253 of the Laboratory of the Inland Revenue at Ottawa considers one hundred and fifty-eight samples of turpentine, purchased as a drug in various places in the Dominion. As a result of previous work undertaken
in the laboratories, the findings of which were published in Bulletin 79, in 1901, and Bulletin 211, in 1910, an order-in-council was passed in June, 1912, whereby turpentine was added to the fourth schedule of the adulteration Act. The investigation now reported upon shows that of the 158 samples examined, 106 were apparently genuine, 5 were doubtful, and 47 were adulterated—42 of the later containing petroleum.

The announcement is made that the medical faculty of Queen's University has become merged financially with the university. Since 1892 there has been full academic control by the University Board of Trustees but the financial administration has been independent of the general university funds. Now the medical faculty is to participate in the general university funds and to receive "just and equitable consideration in proportion to its needs and its growth." Evidently this ensures the future of the medical school at Queen's.

In England a movement is on foot to give opportunity to surgeons to see more of each other's work. In the past there has been little chance for a surgeon to study the methods of his confrères, and this is especially true of those living in provincial towns. Surgical clubs have been formed, at which surgeons may witness difficult operations and study points of technique which it is impossible to learn through textbooks; and the Surgical Section of the Royal Society of Medicine, on June 10th last, resolved that a meeting should be held in some important provincial centre, at which surgeons could attend who were unable to get up to London. Accordingly a meeting was held in Birmingham which proved so successful that it leads one to hope that many similar meetings may be held in the future.
MEDICAL COUNCIL OF CANADA

First Announcement, July 1st, 1913

Relating to Registration under the Canada Medical Act and the Examination for the License of the Medical Council of Canada

GENERAL NOTICES

The following announcements are made under the provisions of the Canada Medical Act (1-2 George V, Chap. 16), endorsed and supplemented by the Acts passed by the various Provincial Legislatures of Canada.

(a) Any person who secures registration on the Medical Register of Canada by examination is entitled to register without further examination, in any province of Canada, on complying with the necessary regulations pertaining thereto, including the payment of the provincial registration fee.

(b) Any person who was duly registered in any province of Canada prior to the seventh day of November, 1912 (the date under which the Medical Council of Canada was first legally constituted under the Canada Medical Act), but who was not so registered ten years prior to the seventh day of November, 1912, may be registered on the Medical Register of Canada, either by examination, or without examination, on the completion of ten years after the date of his provincial registration.

(c) Any person whose first provincial registration is subsequent to the seventh day of November, 1912, can become registered under the Canada Medical Act only by passing the examinations of the Medical Council of Canada.

(d) Any person who secured registration on the Medical Register of Canada by provincial registration of ten years standing, (Sec. 18, Clause 2, Can Med. Act), is entitled to register without further examination in any province of Canada on payment of the necessary fee, and subject to the following proviso of Sec. 18, Clause 2 of the Canada Medical Act:

"Provided that if the Medical Council of any province is not satisfied with the period of years prescribed by the sub-section, such Medical Council may, as a condition to provincial registration, exact an examination in final subjects from practitioners registered
under this sub-section, and the said examination shall be held according to the provisions of the by-laws or rules of the respective Provincial Councils."

REGISTRATION

Those entitled to register without examination.

Any person who on or before the 7th of November, 1912, was the holder of a license or certificate in any province of Canada and who has been in active practice in Canada shall, ten years after such provincial registration, be entitled to register without examination.

Certificates in blank will be provided by the Registrar of the Medical Council of Canada upon application.

A form of affidavit, and a photograph of the applicant for purposes of identification shall be attached to certificates from candidates for registration or examination.

EXAMINATIONS

1. The Council shall at its annual meeting determine the place or places and dates for the next examinations of the Council, and shall appoint the examiners necessary for the proper conduct thereof.

2. Candidates for the examinations of the Council must present either (a) license of a Provincial Medical Council or Board of Examiners, or (b) a certificate from the Registrar of a Provincial Medical Council, or Board, that the requirements of that Council or Board in regard to preliminary education matriculation, medical curriculum and graduation have been complied with.

Certificates in blank will be provided by the Registrar of the Medical Council of Canada upon application.

3. Applications for examinations, together with the necessary certificates and fee must be deposited with the Registrar at least four weeks before the date set for the commencement of the examinations.

4. Candidates who hold diplomas obtained outside of Canada must present certificates from the Registrar of a Provincial Medical Council the same as is required of graduates of the Canadian Universities.

5. No member of the Medical Council of Canada shall act as an examiner or a Deputy Registrar for the Council.

6. The Council shall determine from time to time the subjects for examination and shall adopt rules and regulations for the guid-
ANCE OF THE REGISTRAR, DEPUTY-REGISTRAR, BOARD OF EXAMINERS, AND FOR CANDIDATES WHEN IN THE EXAMINATION HALL.

7. The qualification granted by the Medical Council of Canada shall be known as the "License of the Medical Council of Canada" (L.M.C.C.).

8. Candidates who intend to be examined by the examiners in homeopathics shall signify their intention to the Registrar at least four weeks before the commencement of the examinations. These candidates shall be examined in therapeutics, and in all examinations where therapeutics are involved, by examiners approved by the majority of the homeopathic representatives in the Council.

SUBJECTS OF EXAMINATIONS

9. Physiology, anatomy, hygiene and public health, pathology and bacteriology, midwifery and gynaecology, surgery, medicine, including therapeutics.

10. The examination shall consist of two examinations in each subject:

(a) Clinical in the subjects of medicine and surgery.

(b) Oral in the subjects of: physiology, anatomy, hygiene and public health, pathology and bacteriology, midwifery and gynaecology.

11. Sixty per cent. of the marks in each of the examinations in each subject shall be required to pass.

12. A candidate who fails in not more than two of the subjects of examination, may present himself at a subsequent examination for those subjects in which he has failed. Failure in more than two subjects will necessitate re-examination in all subjects.

13. The values awarded by the examiners to the answers of the candidates are not to be subject to revision.

(Sections 14 to 22 refer to "Rules for candidates when in the examination hall.")

FEES

23. The fee for the examination, including subsequent registration, shall be One hundred dollars ($100). In cases of failure requiring re-examination, half of the original fee, that is Fifty dollars ($50), will be payable.

24. No candidate shall be admitted to any examination until the fee for such examination has been paid in full.

25. All fees must be paid in lawful money of Canada to the Registrar of the Council.
26. Any person who has received a license or certificate of registration in any province previous to November 7th, 1912, and who has been engaged in the active practice of medicine in any one or more provinces of Canada, shall, after ten years from the date of such license or certificate, be entitled to be registered without examination, upon payment of the sum of One hundred dollars ($100).

R. W. Powell, M.D.,
Registrar.

180 Cooper Street, Ottawa.

It is reported in the public press that two patients have been discharged from the lazaretto at Tracadie, New Brunswick. One, a man aged thirty-nine, left a year ago, after receiving twenty injections of nastin. He has been twice examined since his discharge and remains well. The other patient was a man of sixty-seven years of age, who was discharged last November. He received sixty injections and he also remains in good health. The physician in charge of the lazaretto is Dr. Langis.
Book Reviews

Applied Pathology. Being a Guide to the Application of Modern Methods to Diagnosis and Treatment. By Julius M. Bernstein, M.B. (Lond.), D.P.H., Assistant Physician to the West London Hospital, Lecturer in Clinical Pathology to the Postgraduate College, etc. Illustrated. Price, $3.75. London: University of London Press.

It is not easy to classify this book. It is not intended to be a practical laboratory manual, but is rather written from the clinical point of view, a book in which the practitioner or senior student may obtain a survey of the applications of clinical research. Consequently, all detailed descriptions of technique are omitted except those which have to do with the preparation of specimens. Although the outcome of the author's lectures at the West London Postgraduate School, it has few of the defects of the lecture method. The author takes the view that the position of clinical pathology needs to be more clearly defined, and deprecates the tendency to make of it a specialty no longer intimately associated with and subservient to clinical medicine. Under such circumstances the clinical pathologists are apt to degenerate into "hewers of paraffin and drawers of blood." The ideal which he has in mind is the training of the scientific practitioner or "physician-pathologist." Modern methods of diagnosis and treatment, and the principles underlying them, are clearly explained. There are excellent chapters on bacteriotherapy, on the new chemotherapy, and on the use of tuberculin. The illustrations are good and helpful, and it is interesting to note that those showing the presence of spirochetes and trypanosomes in the fresh blood are taken from cinematograph films.


This is a most interesting and well written little book consisting of two essays, the longer one on flatulence, and a short one on shock, amounting in all to about fifty pages. There is, however, a close relationship between the two subjects. The subject of flatulence stands in need of elucidation; we need to clarify our
notions as to the source of the gas that distends the stomach, or that is eructated. "Fermentation" is no adequate explanation. The author believes that in many cases actual secretion of gas from the walls of the stomach or intestines is an important factor, and that in all these cases three systems are involved—the vasomotor, the autonomic nervous, and the adrenal. The second essay deals with shock as distinct from collapse, and chiefly from the medico-legal aspect. It aims to show that a definite connexion exists between sudden death from inhibition, surgical shock, post-operative ileus, the curious cases of delayed shock, deaths from pneumonia after some injuries, and traumatic neurasthenia. The author advises an attempt to estimate the "shock value" or suggestibility of persons who are to be insured against accidents.

Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


Dr. Chavasse's Advice to a Mother on the Management of her Children. Revised by T. D. Lister, M.D. Illustrated; price 1s. 6d. net. London: J. & A. Churchill, 1913.


Res Judicatae

THE PUBLIC HEALTH ACT OF ONTARIO

The most important new features of the Ontario Act revised last year are:

1. The provision whereby the province is divided into districts each with a trained medical officer. There are seven of these. Each officer gives all his time to sanitary work within his district.

2. The reduction in the numbers of members of the local boards, there being five members for places of four thousand population and upwards, and three members for places of smaller population, including the townships. The medical officer of health is a member of the board and its executive officer.

3. The tenure of office of the medical officer of health is made permanent. This official cannot be dismissed except for cause and with the consent of the provincial board. He must be paid a reasonable salary. Provision is made whereby the municipality pays his expenses for attendance at the annual conference of health officers. This year about three hundred were in attendance.

4. The medical and surgical attendance upon indigents cannot in future be saddled upon the practitioners of a community. The council is required to provide for this.

5. The period given to report communicable disease has been shortened to twelve hours instead of twenty-four. Measles and tuberculosis are made placardable diseases.

6. Isolation hospitals are placed directly under the control of local boards of health and arbitration is provided in case of dispute as to their location outside the municipality.

7. The onus of placarding premises for communicable disease is placed directly upon the medical officer of health.

8. Under the regulations the medical officer of health has power to commit a tuberculosis patient to a hospital or sanitarium under certain circumstances.

9. Power is given to a municipality to regulate and inspect its meat supply.

10. Perhaps as important a part of the Act as any is that relating to the establishment of waterworks and sewerage systems. Neither of these may be begun without the approval of the provin-
cial board, and under certain circumstances the board has power to order a municipality to establish a water supply or sewage disposal system.

11. For the first time in the history of the province, a sanitary engineer has been appointed under the provincial board.

The reports of communicable diseases and births and deaths made by the medical profession are very incomplete. The importance of this question cannot be denied. Some medical men claim they should be paid a fee for such reports. The Ontario Health Officers Association recently passed a resolution asking the government to pass legislation requiring a fee of fifty cents for each report of a communicable disease, a birth, or a death. This question should in my opinion be freely discussed here. All I have to say about it is this—that the members of the profession will in the future be required to obey the law. So, if they believe themselves entitled to a fee for such reports, they will get it only by making their influence felt in the same manner as other organizations do. If they follow their usual business tactics and wait for Providence to help them, they will get no more recognition than at present. These remarks are made with a view to provoking discussion.*

John W. S. McCullough,

Chief Officer of Health, Ontario.

*Read before the Section on Public Health at the annual meeting of the Canadian Medical Association. A resolution that medical men should be paid for the notification of infectious diseases was the outcome of the discussion.
PROVINCIAL MEDICAL BOARD OF NOVA SCOTIA

The annual meeting of the Provincial Medical Board of Nova Scotia was held at Halifax on July 16th with a large and representative attendance. In the absence of the president, Dr. John Stewart, who had been called to Edinburgh to receive the honorary degree, LL.D. from his alma mater, Dr. W. B. Moore, of Kentville, acted as chairman. The usual reports from the registrar, treasurer, and the education committee, were read and adopted. In connexion with these reports the following matters received attention: first, the question of the preliminary examination; for the last two years investigations have been carried on by the General Medical Council of Great Britain into the scope and standard of this examination, and the nature of the papers set by the numerous bodies throughout Britain and the various possessions, whose certificates have hitherto been accepted by the Council, with the result that some of these bodies have been struck off the list, and a number in the meantime are conditionally recognized. It was decided to extend somewhat the requirements of the examinations conducted by this Board, especially in connexion with the languages, and all the examiners are to be requested that in setting the papers in their particular departments, they will each see that the questions shall not be merely such as to test the memory of the candidate, but rather the ability to make practical use of knowledge.

In the registrar's report it was announced that information had been received from London that New Brunswick had joined with Nova Scotia, Quebec, and Prince Edward Island, in the recognition of British registration, and that reciprocity between Great Britain and that province would also soon be in force, as has been now for some time the case between Great Britain and the other three named provinces. In this there was also reference to the Canada Medical Act and the Medical Council of Canada, which was supplemented by a more extensive statement from the registrar, who was one of the representatives from Nova Scotia to the Council. The following resolution which represents the feeling of the Board and of the profession generally in Nova Scotia was passed unanimously by the meeting:
“That this Board is pleased to know that the Medical Council of Canada has been definitely organized under the Canada Medical Act, and would congratulate Dr. Roddick on the measure of success which has at last attended his efforts to bring about inter-provincial recognition of medical practitioners. The Board regrets, however, to understand that the Canada Medical Act has been so amended, that instead of it being one of the prime objects of the Act, it is now really ultra vires for the Council to consider reciprocity conditions with Great Britain.

“The Board further considers that the Council is not carrying out the plain purposes of the Act, nor even the intention implied in its own regulations, viz., the establishment of a definite qualification attainable only by examination, when it gives to men who are entitled simply to registration the same qualification as is provided for those who are compelled to undergo an extensive high standard examination. The result necessarily follows that as the diploma issued does not indicate on the face of it that it was obtained by examination, it is not directly registrable.

“This Board also regards it as a mistake that examination should be demanded in any but final subjects, especially when it is made impossible that examination in such subjects as anatomy and physiology may be taken by students in course.

“The Board will not assume that it is the intention of the Council permanently to establish the conditions adopted with regard to the first examinations to be held in October next, in limiting them to one centre, Montreal, but at any rate must protest that no examiner has been selected representing any province or institution east of Quebec.

“Finally, and notwithstanding the exceptions above taken, this Board, in accordance with the special legislation adopted in this behalf in 1903, will accept the registration certificate of the registrar of the Medical Council of Canada, and without further examination will register the holder thereof, on his complying with the ordinary regulations with regard to payment of fee, proof of identity, etc. This decision will apply to all ‘ten-year men’ registered in the Canadian Medical Register as well as to those registered after examination, subject only to the reservation already indicated with regard to recognition of the qualification which is being granted by the Council.

“The Board therefore deprecates the fact that one province, British Columbia, on account of existing local legislation is unable to accord this same general recognition to all holders of the Council’s certificate.”
It was also further unanimously decided:

"That, with reference to the certificate which will be required of persons who, while not yet registered with this Board, may yet be possessed of such academic and other certificates as would entitle them to come up for the final professional examination of this Board, such certificate will, in the meantime be furnished by this Board without charge."

According to the registrar's report there were ten additions to the register during the year, but there being also ten erasures on account of death, the numerical strength remains at six hundred and seventy-one, the same as on June 30th, 1912. Of this number only about four hundred and forty are resident in Nova Scotia, the remaining two hundred and thirty-one are to be found chiefly in the United States, but scattered more or less everywhere. Their names, however, still remain on the provincial register and they retain their legal rights to practice in the province.

There were no cases of irregular practice necessitating actual legal proceedings, but several minor cases were disposed of by correspondence. The serious results attending the practice of unqualified and ignorant women as midwives throughout the province, was under consideration and it was recommended that the county medical societies as well as the provincial association, should petition for legislation to enable the Board to deal with this class of persons.

According to the treasurer's report the Board has a balance of $1,470 after paying examiners, members' fees, registrar's salary, etc.; a very satisfactory condition when it is considered that the only receipts come from examination and registration fees, that these are moderate, and further that there are no annual fees exacted.

Dr. John Stewart was re-elected president, and Dr. A. W. H. Lindsay registrar and secretary-treasurer.
Obituary

Dr. Jerrold Ross Waddell, of Chatham, Ontario, died July 13th in the twenty-ninth year of his age. Dr. Waddell graduated from McGill University in 1907. He practised for two years in New Mexico, and for the past eighteen months had been doing research work at the Montreal General Hospital.

Dr. Gerald Ballon, of Toronto, died July 5th. Dr. Ballon was sixty-seven years of age and had followed his profession in Toronto for more than thirty years.

Dr. George K. Butler, of London, England, died at Halifax July 19th. He was the son of Nathan Butler, of Yarmouth, Nova Scotia, and a graduate of McGill University. From McGill he went to St. Thomas's Hospital, London, and for the past thirty-seven years had practised in London. Dr. Butler arrived from England on Thursday, July 17th; he contracted a cold which developed into pneumonia and death resulted two days later. He was in the sixty-second year of his age and is survived by a widow and one son.

Dr. A. T. Watt, superintendent of the quarantine station at Williams Head, died July 27th. Dr. Watt was born in Hamilton on August 9th, 1860. He was a graduate of the University of Toronto and apart from his professional work had attained some repute as a writer. He was appointed superintendent of the quarantine station in 1897.

Dr. Frederick Fenton, of Toronto, died at the Wellesley Hospital, July 27th, in the forty-fourth year of his age. He was the third son of County Crown Attorney Frederick Fenton and received his early education at Jarvis Street Collegiate. Afterwards, he went to Trinity Medical College. From 1892 to 1893 he was house surgeon at the Toronto General Hospital. He was associate professor of obstetrics and gynaecology in the University of Toronto and had charge of the department of gynaecology and obstetrics in St. Michael's Hospital. He leaves a widow and two children.

Dr. A. B. Carscallen, of Enterprise, Ontario, died July 23rd. Death was due to paralysis. Dr. Carscallen was a well-known practitioner in Enterprise, where he had resided for more than twenty-seven years.
News

MARITIME PROVINCES

At a meeting of the Westmoreland County Municipality, held at Dorchester, New Brunswick, July 22nd, a grant of two thousand dollars was made to the Moncton Hospital, subject to ratification by the Legislature at its next session.

Dr. A. F. Miller, superintendent of the provincial sanatorium at Kentville, Nova Scotia, has been invited to assist the committee appointed to select a suitable site for and to direct the building of the tuberculosis sanatorium which is to be established in Prince Edward Island and for which the funds have been provided by Hon. Charles Dalton. The matter will be taken up at once and the plans prepared as soon as possible.

ONTARIO

It is probable that within a short time the public schools of St. Catharines will be medically inspected. The matter is under consideration, and a plan has been proposed whereby the consumptive sanitarium and the school boards will each bear a share of the cost of such inspection.

Dr. Marcellus, of Ottawa, has been appointed chief medical officer at Port Nelson in the Hudson Bay.

The plans are being prepared for alterations to be made to the Hamilton Hospital.

The Western Medical College, which was founded at London thirty-two years ago, is now under the direction of the Western University, the university paying an annual rental of $750 for the use of the college buildings and land. The dean of the new medical faculty is Dr. H. A. McCallum, the registrar is Dr. W. E. Waugh, and the executive committee, Dr. McCallum, Dr. Waugh, Dr. Hadley Williams, Dr. H. Meck, Dr. F. P. Drake, and Dr. H. W. Hill.
THE CANADIAN MEDICAL

QUEBEC

The question of establishing a civic hospital again came up for consideration at a meeting of the Quebec Health Committee, held July 16th. The city architect was instructed to prepare plans for the proposed hospital but no definite decision was made concerning the site.

Dr. W. A. G. Bauld is acting as superintendent of the Montreal Maternity Hospital, in the place of Dr. M. T. McEachern, who has been appointed superintendent of the Vancouver General Hospital.

Over eleven thousand visits were made by nurses of the Victorian Order in Montreal during June. The cases treated numbered one thousand, four hundred and thirty-five. Twenty-six patients died.

Three new wings are being added to the Children's Memorial Hospital at Montreal. This will almost double the accommodation of the hospital. An infants' ward was opened a short time ago.

A fire which broke out in the basement of the Old Medical Building at McGill on August 2nd, was extinguished before any serious damage was done. The loss will not amount to more than a few hundred dollars.

MANITOBA

Eleven cases of smallpox were reported in Winnipeg during June. Several of the cases were of somewhat severe type and one death occurred. Other contagious diseases reported during the same month were: scarlet fever, 91 cases, 7 deaths; diphtheria, 15 cases, 3 deaths; typhoid fever, 6 cases; erysipelas, 6 cases, 2 deaths; measles, 71 cases, 2 deaths; chicken-pox, 16 cases; mumps, 6 cases; phthisis, 24 cases, 11 deaths.

One hundred and sixty-eight patients were admitted to the Brandon hospital during the month of June; one hundred and sixty-five patients were discharged, eleven births and nine deaths occurred. On June 30th, there were eighty-two patients in the hospital. It is proposed to expend about $100,000 on new buildings.
SASKATCHEWAN

The buildings of the provincial asylum at Battleford are almost completed. The medical superintendent is Dr. J. W. MacNeil, of Hanley.

The contract has been awarded by the Dominion government for a hospital and school for Indians, to be built at The Pas. The cost will be about $76,578.

ALBERTA

The accounts still unpaid by patients who have received treatment at the Victoria Hospital at Prince Albert amount to over $7,000. At the July meeting of the board, a committee was appointed to take active steps to collect this money. Owing to financial stringency, it has been found necessary to discontinue for the present the building of the new isolation hospital.

The following statistics are given by Dr. Mahood, the medical officer of health at Calgary: 187 births, 69 deaths, death rate 11 per cent.; cases admitted to isolation hospital, 60, including 8 cases of diphtheria, 18 of scarlet fever, 17 of measles, 15 of chicken-pox, 2 of erysipelas. The cases of infectious disease reported during the month numbered two hundred and fifty-six.

The hospital at Camrose is to be extended. The cost will probably be about five thousand dollars.

BRITISH COLUMBIA

A hospital is to be built at Comox by the Sisters of St. Joseph. For the time being, a temporary building will be used and the permanent building will be erected a little later on.

Dr. Glen Campbell has been elected president of the British Columbia Medical Association.
Canadian Literature

Original Contributions

Dominion Medical Monthly, August, 1913:

Many views relative to jealousy, divorces, delusions, erotomania and other interests. J. S. Sprague.

Public Health Journal, July, 1913:

The examination of sputum in Ontario. C. D. Parfitt.
Tuberculosis in Toronto. E. H. Dyke.
Medical organization during rearguard actions in civilized and savage warfare. W. C. Beevor.
The disposal of garbage and refuse in towns. W. R. Hill.

Western Medical News, June, 1913:


Canada Lancet, August, 1913:

The great need of the physician’s active cooperation in public health work. R. E. Wodehouse.
Appendectomy (a personal experience). E. A. Hall.
On the reducing endo-enzyme of internal respiration. Fraser Harris.
MONTREAL MEDICO-CHIRURGICAL SOCIETY

The thirteenth regular meeting of the society was held Friday evening, April 4th, 1913, Dr. D. J. Evans, president, in the chair.

Living Case: Paralytic club-foot cured by inserting a silk tendon, by Dr. J. Appleton Nutter.

The child whom you see was referred to me by Dr. Bazin last December suffering from paralytic equinovarus, the result of an attack of infantile paralysis coming on during her first year and affecting the face, right arm, and left leg. The varus was marked, but offered little resistance to correction: the equinus was but of moderate extent and compensated to some degree for an inch of shortening in her left leg. An examination of the foot revealed the presence of a strong tibialis anticus which was plainly the cause of the deformity. Its action was strongly to invert the foot, and it was practically unapposed. The peronei were paralysed, also the extensor muscles of the toes. The tibialis posticus had some power, the exact amount of which proved difficult to estimate. The muscles acting through the tendo Achillis were of normal strength. Inasmuch as the peronei were constantly being stretched by the varus position, these muscles were first given a chance to recover by putting the foot up in an everted position. Opportunity was also taken to stretch the tendo Achillis. After about two months of this the plaster was removed and it was found that some strength had returned to the muscles going to the outer border of the foot, notably the peroneus tertius, and the outer part of the extensor longus digitorum. The peroneus longus and brevis remained inactive. There was not, however, sufficient muscular strength to balance the tibialis anticus and a return of the varus deformity could be confidently predicted.

At the end of January I operated, giving the tibialis anticus tendon an attachment to the outer border of the foot through the medium of a heavy silk cord. This silk had been prepared after the method of Professor Lange in Munich, by being boiled first in sublimate, dried, and then boiled again in paraffin. The tendon of the tibialis anticus was exposed above the ankle and the silk strands quilted up and down. After being twisted they were passed under
the skin to the region of the tuberosity of the fifth metatarsal, emerging at an incision here. A heavy straight needle was then driven through the bone close to the outer border of the foot, and the silk strands were passed through, pulled tight enough to hold the outer border of the foot well up, and were then knotted. After closing the tendon sheath and skin incisions the foot was put up in plaster in an everted position. The opportunity was taken of stretching the tendon Achillis.

The plaster was kept on two months. The foot is now unsupported by bandage, is held straight, and the little patient walks very well indeed. A contraction of the tibialis anticus lists both inner and outer borders of the foot equally. The varus shows no intention of returning and the action and strength of the artificial silk tendon are well shown.

Discussion. Dr. J. M. Elder: I quite understand that so long as this silk lasts it will act properly, but when the silk wears out what is going to happen? Does the silk act here as silk does in connexion with nerves and cut tendons, namely, as a framework along which living tendon tissue will develop, so that a living tissue replaces the silk? One thing, however, is definitely gained by this operation, and that is, the deformity of the bones is prevented which is bound to ensue in a growing child with this condition.

Dr. J. Appleton Nutter: I think it probable that the piece of silk will remain in there very many years, possibly for ever; but we have not used silk prepared in this way sufficiently long to be able to state exactly how many years it will last. What has been done experimentally, however, shows that the silk will become covered by fibrous tissue which will probably not arise from the tendon itself, but from the surrounding connective tissues through which it runs. It is not expected that the tendon itself will sprout and grow along the silk cord. The silk has been made sufficiently strong in itself to fulfil its purpose.

Pathological Specimens. Dr. A. M. Burgess exhibited the following series:

A series of four cases of syphilitic aortic disease. When syphilis affects the aorta the vessel presents a wrinkled surface and resembles washed leather with deep puckering and depressions. Two of the cases illustrate what can happen as the result of syphilitic disease of the aorta.

1. From a man, aged fifty-two, along with several other manifestations of tertiary syphilis,—multiple nodules beneath the skin
over shins and definite meningitis; enlarged fibrous spleen and also an aortitis; in cerebral cortex areas of whitish exudate in the sulci.

2. Man, aged forty-five, died of lobar pneumonia; aorta presents a marked syphilitic aortitis. The aortic valve at the beginning of the aorta in the first case is also shown.

3. Heart shows fairly marked dilated arch of the aorta showing complete obliteration of the left carotid with very marked constriction of the innominate artery accompanying the syphilitic aortitis. This was diagnosed in life, both subclavians being practically pulseless and completely blocked off. A possible result of a syphilitic aortic disease is seen here, namely, the dilatation of the arch and also the complete blocking off of the carotid artery.

4. This specimen also illustrates the syphilitic process, a large thrombus occurring on the site of ulceration just above the aortic valve; this gave rise to infarction both in the spleen and kidney and also to an embolism of the mesentery which completely blocked off a large portion of the nutrition of the intestine, and death resulted as a consequence of the mesenteric embolism. The arch of the aorta, in this case a few inches from the original lesion, shows another area with another thrombus upon it. Here again is still another result of syphilitic aortitis when the ulcerative process is well marked.

5. Two cases of tumour of the neck; one from Dr. Elder's clinic and one from Dr. Hutchison's.

Both cases were of rapid development having grown in less than six weeks. At operation both surgeons found in the side of the neck these large masses and the growth was found to involve the glands down behind the sternum and into the mediastinum. The diagnosis of these cases, to use the ordinary term, is lymphosarcoma. I was asked in both cases whether or not the disease was Hodgkin's disease and I wish to show slides both from these cases and from a typical case of Hodgkin's disease, which as you know is a chronic enlargement and not an acute enlargement of the lymph nodes of a certain region. Both nodes show a few small necrotic opaque areas, but in general they are homogeneous and fairly firm. The rapid growth and extension of these and the number of mitotic figures present in the growth seem to leave no doubt that here we are dealing with a true malignant tumour. You will see, however, from the sections, that the typical histological picture, which has been described as pseudo-leukæmia, or Hodgkin's disease (the presence of marked fibrosis and eosinophile leucocytes.
and large multinuclear cells, many of which are in mitosis), is present in one of these entirely and in the other partially.

DISCUSSION. Dr. J. M. Elder: Clinically speaking, I do not think the differentiation of Hodgkin’s disease from lymphosarcoma is of very great importance. Both conditions should be left alone. This case of mine was a man, stout, fine-looking, from the Townships, who said that he had noticed within a few weeks two masses, one at the root of the neck on the left side and a smaller mass growing in the axilla of the same side. The question came up at once, is this lymphosarcoma or Hodgkin’s disease, or is there any differentiation between them? They are both essentially malignant. One thing, in diagnosing from a clinical standpoint, is the enlargement of the superficial veins. It is in the neighbourhood of this tumour, over the front of the chest, that they are enormously enlarged. This, to me, nearly always spells sarcoma. I do not know why the sarcoma definitely interferes with the deep circulation, but there it is. These glands shell out just as easily as enlarged syphilitic glands and look white and bloodless. Another case has since consulted me with a similar history of rapid growth in the root of the neck and some dysphagia, but no difficulty in breathing. In his case he reported a loss of weight but whether it was due to the fact that he had pretty strenuous treatment for indigestion, I do not know. In his case I made a fluoroscope examination of the chest and a marked shadow could be seen away down in the mediastinum, which was evidently continuous with the dark shadow which corresponded with the tumour in the neck. I did not operate on this man. The case reported, upon whom I did operate, is now going down hill rapidly.

Dr. A. M. Burgess: Mention has been made of the prevalent view that Hodgkin’s disease is an intoxication and not a true tumour and it is with that in mind that I brought up this case as evidence of the neoplastic nature of the disease. The papers mentioned on this subject have been further supplemented by a Congress of Pathologists in Germany in which they practically all agreed that Hodgkin’s disease was an intoxication and not a neoplasm. It is in an attempt to present a small amount of evidence on the opposite side that I brought up these cases this evening.

PAPER: The paper of the evening was read by Dr. Wm. Hutchinson on "Genito-urinary tuberculosis from the general practitioner’s standpoint." [See page 473.]

DISCUSSION. Dr. J. M. Elder: I would just like to add my word of appreciation. The paper, as the title states, is directed to
the general practitioner, and is a timely one. I have already raised my protest in this society against the danger into which we are all drifting, more especially the men who are now students of medicine; I refer to the danger of neglecting the ordinary methods of observation and examination in arriving at a diagnosis, and relying entirely on extraneous methods of examination. Dr. Hutchinson states that apparently tuberculosis of the kidney can be at least suspected and fairly accurately diagnosed from symptoms and history without the use of the cystoscope. Many of us remember old Sir Henry Thomson's lectures on urinary diseases, to which we owe so much. There never was a better example of good inductive reasoning than these lectures afford: for instance, the picture he draws of tuberculosis of the kidney in a young adult,—aching pain, frequency of micturition, failing strength, and another symptom which does not often occur, namely, haematuria. One other thing to which Thomson drew attention was that these patients, if carefully watched and the temperature regularly taken, would show a regular nocturnal fever.

Dr. E. W. Archibald: I need hardly do more than mention what has already been emphasized in the discussion, I refer to Dr. Hutchinson's most timely warning to the general practitioner that renal tuberculosis may be diagnosed in its early stages. That perhaps is the most useful part of the paper. I would like, however, to speak about one or two other points. Towards the use of tuberculin, which Dr. Hutchinson would recommend in the early stages, I confess to a feeling of distrust; on the one hand because of the unreliability of tuberculin itself, and on the other because of the fact that early kidney tuberculosis is rarely seen; that is, by the time it has been diagnosed it is no longer really early. Lesions have occurred in the kidney of a destructive nature. Frequent micturition with pyuria (the irreducible minimum for diagnosis), means breaking down, and under such circumstances it becomes a question whether one should take the time necessary to treat the patient by the ordinary hygienic measures, including tuberculin, or whether one should advise the removal of the kidney. Personally I lean towards the latter view. The operation of nephrectomy is really on the whole a very safe one, particularly in those early cases to which we are referring. The danger of leaving the diseased kidney is greater than the danger of taking it away. I have had a moderate experience of cases of tuberculous kidney in whom the disease has arisen as a complication in the course of pulmonary tuberculosis; and very excellent results on the whole have been
obtained by nephrectomy, in cases which might at first sight be considered as unfavourable. This has encouraged me to believe that the radical operation was all the more permissible in the early cases where the lungs were not involved and the patient was otherwise in good condition.

Dr. Wm. Hutchinson: In regard to the question of blood in the urine in cases of tuberculosis of the kidney I may say that it was present in thirty of our forty-four cases. As you see it is present in a fair percentage of the cases, but it is not a diagnostic symptom; on the other hand pus is one of the two diagnostic signs of tuberculosis. As to the nocturnal temperature, fifty per cent. at least show an evening rise, this being more marked in the acute than in the chronic cases. Pain is not a valuable symptom as many cases go on to complete destruction of the kidney without any pain being noticed. Concerning tuberculin I believe it should be tried in the early stages and particularly in those very acute cases.

Case Report: Gangrenous pancreatitis, by Dr. A. E. Garrow.

Discussion. Dr. E. W. Archibald: This report is to me most interesting. First of all what strikes one is that nothing was found abnormal in the biliary passages. We all know that since Opie's observations, which associated the occurrence of pancreatitis with occlusion of the ampulla of Vater by a gall-stone, thus driving the gall back into the pancreatic duct, the impression has become general that in all cases of pancreatitis there are either stones present or there have been stones present which have passed. That is certainly an error. Whatever value may be attached to this observation as a cause of pancreatitis, the fact remains that the association of gall-stones with the disease is less than fifty per cent. The important question is, why do we have pancreatitis occurring where no gall-stones are present? In a recent paper I pointed out that the sphincter of the ampulla of Vater, which has been anatomically demonstrated for many years, can withstand a very high hydrostatic pressure, a pressure rising occasionally to as much as six times that under which the bile is excreted. Under such circumstances the bile might be dammed back into the pancreatic duct and set up pancreatitis. I have recently obtained in the McGill laboratory of experimental medicine evidence of a nature to confirm this theory. In Dr. Garrow's case, it seems to me important to point out, first, that there were no gall-stones; secondly, that there was apparently duodenal congestion (which of course may have been secondary to the final attack, but which may perhaps have been of a chronic nature and associated with the history of
indigestion); and thirdly, that this man had had for twenty years similar attacks, but all this time without gall-stones. I interpret these clinical findings in the following way: for some reason or other, there occurred, as the prime cause of the attacks, a spasm of the sphincter of the ampulla of Vater resulting in a damming back of the bile temporarily into the head of the pancreas. Under ordinary circumstances bile mixed with gall-bladder mucus will not produce any great disturbance, and the amount of disturbance would correspond more or less well with the degree of the clinical symptoms we so frequently see; that is, the attack of pain, acute, subacute or mild, in the epigastrium, passes off in a few hours, in one, two or three days, as the irritative process subsides, leaving again a practically intact pancreas. In other words the effect of bile on the pancreas might be compared to that of a chemical irritant producing an aseptic inflammation, with tension and pain. In the majority of instances this irritative inflammation does not go on to infection, which is a rare thing in pancreatitis, nor does it lead to destruction. It is only finally, when the pitcher has gone pretty often to the well, that under accidental circumstances infection does enter in, or that tissue destruction without infection occurs. Then somehow trypsinogen is activated and in that way there is brought about self-digestion of the pancreatic cells. Once even one cell is destroyed in the pancreatic tissue there may occur liberation of trypsinogen, which if activated may lead to advancing destruction, with erosion of vessels and ultimately pancreatic haemorrhages. This may or may not be complicated by infection (in this case by the bacillus aerogenes capsulatus). What I desire to emphasize is that very frequently we see recurring attacks of pancreatitis before the ultimate end from haemorrhage; and that these recurring attacks are in all probability caused by the entrance of bile into the pancreatic duct, driven there by the resistance of the sphincter of the ampulla, and that the whole process is usually uncomplicated by infection and represents rather a phase of cell irritation with inflammatory exudate.

Dr. MacKay: This marked cyanosis associated with severe epigastric pain, vomiting, and difficulty in moving the bowels, are symptoms which are frequently referred to in the clinical history of these cases, and this, I think, is a typical one.

SASKATCHEWAN MEDICAL ASSOCIATION

The seventh annual meeting of the Saskatchewan Medical Association took place at Regina, July 16th, 17th, and 18th, under
the presidency of Dr. D. Low, of Regina. The meeting was a successful one and was well attended, about sixty members registering. In the presidential address, Dr. Low spoke of the success already attained by the Association and indicated certain directions in which beneficial changes might be made. After the reports of committees had been submitted, the following were nominated:

Committee on Credentials: Drs. E. E. Meek, J. A. Valens, and J. C. Black.


Committee on Publication: Drs. A. Wilson, H. MacLean, and W. R. Coles.

Committee on By-laws: Drs. E. R. Peterson, D. Low, and A. Wilson.

Committee on Medical Ethics: Dr. A. R. Roberts, F. W. Hart, and J. W. Turnbull.

It was decided to increase the fee for professional services from $2.00 to $3.00. The Western Medical News was chosen as the official organ of the Association; the editorial board will be nominated from the different parts of the province, the editor-in-chief being Dr. Harry Morell, the present editor.

On Wednesday evening, July 16th, the mayor gave a hearty welcome to the members of the Association, and it was felt by all who were present that much of the success of the meeting was due to the generous support given by the city officials.

The following is a list of the papers which were read at the various sessions: “Hospitals,” by Dr. W. A. Dakin, Regina; “Sanatorium treatment of tuberculosis,” by Dr. W. M. Hart; “A case of saus patella,” by Dr. O. E. Rothwell, Regina; “Reports of some scarlet fever cases and serum treatment,” by Dr. E. E. Kells, Regina; “Transverse myelitis and laminectomy,” by Dr. J. A. Cullum, Regina; “Report on some interesting appendix cases,” by Dr. F. A. F. Corbett, Regina; “Report of a case of sudden death in labour,” by Dr. J. W. Turnbull, Regina; “Report of a case of tetanus,” by Dr. A. W. Hicks, Halbrite; “Some mistakes in diagnosis,” by Dr. J. Wark, Moosomin; “Anaesthetics,” by Dr. G. R. Peterson, Saskatoon; discussion led by Drs. J. W. Turnbull, Regina, R. H. Smith, Moose Jaw, and T. A. Patrick, Yorkton.

“Infection of the antrum of Highmore,” by Dr. G. P. Bawden, Moose Jaw; discussion led by Drs. E. R. Morse, Saskatoon, and J. W. Pennington, Moose Jaw. “Intestinal obstruction,” by Dr.
D. S. Johnstone, Regina; discussion led by Drs. J. W. McCulloch, Moose Jaw, R. L. King, Prince Albert, and H. E. Munroe, Saskatoon. "Gonorrhea in the female," by Dr. Andrew Croll, Saskatoon; discussion led by Drs. C. R. Paradis, Regina, F. A. F. Corbett, Regina, P. D. Stewart, Saskatoon, and F. W. Hart, Indian Head.

On Thursday afternoon, an "At Home" was given by His Honour Lieutenant Governor and Lady Brown, and this was followed in the evening by a banquet at the Parliament Buildings restaurant. The conference closed with an "At Home" given by Dr. and Mrs. Low at two o'clock on Friday afternoon.

Dr. G. R. Peterson is the new president of the Association. The next annual meeting will be held at Saskatoon.

BRITISH COLUMBIA MEDICAL ASSOCIATION

The fourteenth annual meeting of the British Columbia Medical Association was held on Thursday and Friday, July 17th and 18th, 1913, in the Board of Trade rooms at Vancouver. About two hundred members were present and the meeting was a most successful one from every point of view. Dr. A. S. Monro presided.

After the registration of members and the reading of the minutes, the reports of committees were submitted and the general business conducted. A committee was appointed to arrange joint meetings with the Tri-State (Pacific) Medical Association.

The following are the papers read at the various sessions: "Some points on the early diagnosis of pulmonary tuberculosis," by Dr. C. H. Vrooman; "Infant feeding," by Dr. C. F. Covernton; "Some impressions of Sir Arbuthnot Lane," by Dr. R. V. Dolbey; "Distention of gall bladder" and "Goitre and its treatment," by Dr. C. H. Mayo; "Some observations on the question of acidosis," by Dr. J. W. McIntosh; "Cysts of the kidney," by Dr. A. Rorke Robertson; "What the general practitioner should know about mastoiditis," by Dr. A. E. Burns; "Accurate renal diagnosis in surgical practice," by Dr. G. S. Whitesides; "Some advances in urinary surgery," by Dr. G. S. Gordon; "The duty of the State to public health," by Dr. A. P. Procter.

On Friday morning a clinical meeting was held at the Vancouver General Hospital and the following cases were shown: Omentopexy for cirrhosis of liver, by Dr. Riggs; Four cases of degeneration of different columns of the spinal cord, by Dr. Brody; "Fracture of hip in a tabetic with Charcot's joint," by Dr. Seldon;
“Achondrodystrophy,” by Dr. A. W. Hunter; “Fractures of the femur and leg,” by Dr. Monro.

A very successful luncheon was given on Tuesday at the University Club and speeches were made by Dr. C. H. Mayo, Hon. H. E. Young, and Dr. A. G. Burns, of Seattle. On Friday afternoon, about seventy-five of those who had attended the meetings visited the hospital for the insane at Coquitlam, which was opened last April. They were received by Dr. C. E. Doherty, the medical superintendent. The hospital has accommodation for six hundred patients; male patients only are received; it is beautifully situated and entirely modern in every respect.

The election of officers of the Association resulted as follows: president, Dr. J. Glen Campbell, Vancouver; vice-president, Dr. Holden, Victoria; treasurer, Dr. P. A. McLennan, Vancouver; secretary, Dr. H. W. Riggs, Vancouver; executive committee, Dr. W. F. Cory, Vancouver; Dr. Mackay, New Westminster, and Dr. F. X. McPhillips, Vancouver.

PRINCE EDWARD ISLAND MEDICAL ASSOCIATION

The annual meeting of the Prince Edward Island Medical Association was held on July 23rd, at Summerside. There was a large attendance. There was a short business session in the morning of a purely routine nature, which was convened shortly after the arrival of the train from Charlottetown. The president, Dr. A. A. McDonald, presided at this meeting, at which twenty-four doctors were present.

After the presentation and discussion of reports the election of officers took place as follows: president, Dr. W. J. MacMillan; vice-presidents, for Queen’s County, Dr. C. J. Murchison; for King’s County, Dr. D. R. Fraser; for Prince County, Dr. J. B. Champion; secretary, Dr. J. C. Macdonald; treasurer, Dr. F. P. Conroy; members of the executive committee, Drs. Houston, Yeo and Dorsey; medical council, Drs. McLellan, Yeo, Johnson, McMillan, McNeill, Jenkins and J. R. Jardine.

The examinations by the Medical Council for candidates for registration to practice in the province were fixed to be held on August 6th next.

After an adjournment for dinner, the association resumed its deliberations, meeting this time, however, on the open shore at Bedeque, whither they were taken by the arrangement of their Summerside colleagues for a little outing, involving the ferry trip and a clam bake on the shore.
This session opened with the presidential address of Dr. Macdonald, who dealt interestingly with the past, present and future outlook of medicine. He made fitting reference to Dr. Friedmann's supposed cure for tuberculosis, and referred also to the stand taken upon that question by the association. On this matter Dr. Macdonald made reference to the Hon. Charles Dalton's generous gift towards the building of a sanitarium. He urged the establishment of a provincial laboratory for chemical and bacteriological examinations, and on his recommendation a committee was at once appointed to interview the government on the matter. The members of this committee are Drs. Johnson, Jenkins, Dewar, MacMillan and Carruthers.

After the president's address several interesting papers were read and case reports made. Dr. McEwen read a paper on "Obstetric experiences," and this was followed by a case report by Dr. H. Johnson, on death from tetanus, who made the point that cases of tetanus were exceedingly rare in this province, but that they had always been fatal. Dr. Johnson also made a report on two cases of mastoid disease. Next, a case report was read by Dr. Jenkins and also by Dr. Tanton on "Ectopic gestation." Then Dr. Houston contributed a valuable paper on "Alcohol, its place and value in medicine." This was followed by a symposium on typhoid fever; its history, bacteriology and pathology being treated by Dr. J. F. McNeill, while in a valuable paper its treatment was dealt with by Dr. McGuigan. There were interesting discussions on each report and paper.

The business concluded, the members of the association returned to Summerside, and visited the Prince County Hospital.

NEW BRUNSWICK MEDICAL SOCIETY

The thirty-third annual meeting of the New Brunswick Medical Society was held at St. John, July 15th and 16th, under the presidency of Dr. G. R. J. Crawford. About seventy-five members attended the meeting, which was a most successful one. The address of welcome, which was delivered by the mayor, was followed by the presidential address. Dr. Crawford chose as his subject, "Preventive medicine in its relation to the transmission of disease," and his remarks were followed with great interest.

The officers elected for the year 1913-14 are: President, Dr. G. C. VanWart, Fredericton; first vice-president, Dr. G. W. Fleming, Petitcodiac; second vice-president, Dr. W. W. White, St. John; recording secretary, Dr. J. S. Bentley, St. John; corres-
ponding secretary, Dr. D. C. Malcolm, St. John; trustees, Dr. H. E. Gilmor, St. Martins, Dr. W. A. Christie, St. John, and Dr. B. H. Dargan, Harvey. The representatives to the executive of the Canadian Medical Association are: Dr. C. T. Purdy, Moncton; Dr. S. C. Murray, Albert, and Dr. T. D. Walker, St. John. The following papers were read and in many cases were the subject of interesting discussions: "Methods of infection," by Dr. G. G. Melvin, St. John; report of a case, by Dr. G. C. VanWart, Fredericton; "Bacterial vaccines in general practice," by Dr. F. H. Wetmore, Hampton; "Prostatectomy by the abdominal route" with specimen, by Dr. D. R. Moore, Stanley; "Typhoid fever: its management," by Dr. W. H. Irvine, Fredericton; "The treatment of syphilis by salvarsan," by Drs. G. S. Strathy and Gordon Bates, Toronto; "Some references to the scope of the medical profession in relation to preventive medicine," by Dr. G. E. DeWitt, Wolfville; "Gastric and duodenal ulcer," by Dr. J. W. DeWiss, Boston; "Pyloric and duodenal ulcer," by Dr. A. J. A. Hamilton, Boston; "The use of the Roentgen ray in diseases of the intestinal tract," by Dr. A. W. George, Boston; "Pathology of diseases of the genito-urinary tract," by Dr. J. D. Fraser, Montreal; "Some experiences in abdominal surgery," by Dr. J. C. Webster; "A few notes on obstetrical experiences," by Dr. G. W. Fleming, Petiteodiac; "Ectopic gestation," by Dr. M. A. Morris, Boston; "The treat-ment of uterine displacements," by Dr. T. D. Walker, St. John.

The report of the Medical Council was submitted by Dr. S. S. Skinner, the registrar. As the standard maintained by certain American medical colleges is below the requirements for registration in the province of New Brunswick, it was determined that only graduates of those colleges which were recognized by the Council of Medical Education should be permitted to present themselves for examination, and the following amendment to the Medical Act was made at the last session of the Legislative Assembly: "The Council of Physicians and Surgeons shall admit to registration, upon payment of the registration fee, any person desirous of practising in New Brunswick, who is duly registered by the General Medical Council of Great Britain." The following candidates have successfully passed the examinations of the Council: Dr. M. Beaton, Blackville; Dr. D. A. Brumund, St. Stephen; Dr. O. Comeau, Caraquet; Dr. F. A. Duston, St. Stephen; Dr. L. S. Foster, Montreal; Dr. C. E. Gaudet, St. Joseph; Dr. A. Leger, Shediac; Dr. D. Townsend, River Glade; Dr. A. Desrochers, Shippegan. Mr. J. G. Langis, Tracadie, passed the preliminary examination. The medical register now contains 264 names.
REPORT OF A SERIES OF ABDOMINAL CÆSAREAN SECTIONS

BY FREDERICK FENTON, M.D.

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The cases which I am about to report constitute a consecutive series of abdominal Cæsarean sections from July, 1909, to the present time. I will make the report of each case as concise as I can and afterwards have a few remarks to make regarding the operation itself and its possibilities. I have omitted cases prior to the above date because the technique followed since then has been a marked improvement over that formerly used, and I felt justified in reporting this group in which the detail is the same throughout as affording a better basis from which to draw deductions than a mixed group of cases. For the same reason I have omitted vaginal Cæsarean sections altogether.

1. Mrs. A. F., III-para, two previous labours at term and one five and a half month miscarriage. A delicate little woman with external pelvic measurements two or three centimetres below the average. Both labours severe. First baby lived eight months; said not to have cried for a month after birth, and was thought at the time to have suffered injuries to head at birth. Second baby lived only one day and died suddenly; also because of birth injuries. Patient intensely desirous that baby should be safeguarded. Abdominal Cæsarean section done at term (July 19th, 1909), after test of labour for five hours with failure of head to engage. Baby weighed five pounds. Patient had attack of catarrhal
jaundice with diarrhoea and a good deal of abdominal distension following operation, attended by moderate elevation of temperature, 100° to 101°, from third to eleventh day. This patient has since been delivered per vaginam of a four and a half pound baby (January, 1911), without assistance. Both of these children lived and thrived.

2. Nellie S., O-para, single, age nineteen years. Pelvic measurements: ant. interspinous, 21 cm., intercristal 23 cm., external conjugate 17 cm., diagonal conjugate 10 cm. Head not engaged and cannot be pressed into brim even under a general anaesthetic. Effect of labour tried for six hours, but head still moveable above brim when abdominal Caesarean section done. Baby weighed eight pounds. Living. Mother's convalescence uncomplicated. This patient is reported a second time under No. 23 in this paper.

3. Bridget C., married, age thirty-six, IX-para, labours normal. Admitted to hospital November 1st, 1909, with very severe hæmorrhage due to placenta praevia. Hæmorrhage ceased soon after admission, and being under seven months pregnant and a Catholic, it was urged that if possible we temporize till the child should be viable and deliver by section rather than by version, and thereby improve the chances of the infant. Patient kept strictly in bed and no further bleeding occurred for thirty-two days, when two or three ounces were lost early in the morning of December 3rd. As pre-arranged section was done at once, and a living, viable child secured. Child lived about three days. Blood examination: on admission r.b.c. 900,000, at operation 1,300,000, Hb. 30 per cent. Puerperium uneventful. Blood condition showed steady improvement, the red cells rising to 3,450,000 in seven weeks.

4. Rose G., married, II-para, on both occasions delivered by craniotomy. Rickety flat pelvis. Abdominal Caesarean section at term (May 26th, 1910). Recovery uneventful. Baby eight pounds, living and well. This patient reported a second time under No. 21 in this paper.

5. Mrs. G., married, II-para, labours somewhat tedious but not regarded as abnormal. The first child lived one month and the second ten days. Both said to have died of some disease or malformation of bowel or bile ducts. When about eight months pregnant began to have painless bleeding from uterus which became more free from day to day until September 8th, 1910, two weeks before estimated date for confinement, it was judged unwise to allow it to proceed unchecked any longer. Rest in bed, morphia, etc., having failed, delivery was decided upon. The os was rigid,
and would not admit one finger. Abdominal Cæsarean section was performed, following a somewhat severe flooding five hours previously. Baby weighed nine and a quarter pounds, and recovery was uneventful but for abdominal distension, which was troublesome.

6. Mrs. B., October, 1910. (History mislaid, so that details cannot be given, but mother and baby both did well.)


8. Nellie G., coloured, married. Had been a prostitute formerly. Abdominal Cæsarean section done three years before by late Dr. J. F. W. Ross because of an almost complete atresia of vagina, due to scar following extensive injury. Patient admitted to St. Michael’s Hospital, November 19th, 1910, in labour, and suffering great dyspnœa due to old mitral disease. Heart stimulants given and abdominal Cæsarean section proceeded with. Operation completed and patient back in bed in twenty-five minutes. There was some rise of temperature following operation which was never alarming, but the patient’s circulation progressively failed and she died five days after operation. The abdominal and uterine wounds were in satisfactory condition. There were adhesions of omentum to both the abdominal and uterine wounds of first operation but nothing to give one any trouble. The baby weighed seven pounds and is living.

9. Sarah G., married, age thirty-two years, O-para, April 12th, 1911. Patient admitted to hospital at term, having been in labour for many hours, the vertex was presenting at pelvic brim in L.O.A. position, but had not properly engaged, and could not be pushed into brim. Membranes unruptured. Abdominal Cæsarean section. Recovery uneventful but for slight elevation of temperature reaching its highest, 100·3° on eighth day. Baby living.


11. S. G., age thirty-two years, I-para, three days beyond estimated date. Previous labour difficult instrumental delivery, and dead baby. Admitted to hospital after some hours labour with head still at brim. Patient very anxious that baby’s life
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should be saved. No internal interference having occurred, abdominal section was at once proceeded with. Baby alive; weighed seven pounds, ten ounces. From sixth to eighth days temperature varied from 100° to 100'2°, otherwise convalescence uneventful. Mother and baby left hospital in two weeks.

12. R. B., age twenty, I-para. Former labour induced at term, difficult instrumental delivery. Baby lived two days and died from cerebral injuries. Patient allowed to go into labour, internal examinations being refrained from, and at the end of twelve hours head was not engaged in brim. Abdominal Cæsarean section done May 9th, 1911. Baby living, eight pounds. This patient had symptoms of toxaemia during last two weeks of pregnancy, but no albuminuria till after delivery. Convalescence uneventful. She is a small woman, five feet in height, and weighs ninety-five pounds. She is again pregnant, and will return for operation in July.

13. Rosa F., Italian, age twenty-six, I-para, admitted July 7th, 1911, being eight months pregnant, with very severe flooding. Placenta praevia centralis diagnosed. Abdominal Cæsarean section done as soon as preparations could be made. Baby living, weighed five pounds two ounces. Baby died in two days. Convalescence uneventful, though somewhat protracted owing to anæmia. This patient was delivered naturally in June, 1912, the baby presenting by the breech.


15. Same patient as preceding, delivered by abdominal section, May 29th, 1913. Baby weighed seven pounds six ounces. Both left hospital well on twelfth day. There was scarcely any evidence internally of previous operation; no adhesions either to abdominal or uterine scars and no thinning of uterine wall at line of incision. At her request patient was sterilized by division and suture of tubes.

16. Maria C., primipara, three weeks beyond term. Pelvic measurements (external) slightly below average. Labour commenced March 28th, 1911, about 1 a.m., the membranes rupturing almost at once. At noon the cervix was still small and the head not engaged in spite of strong pains. Abdominal Cæsarean section at 2.30 p.m. Baby living, eight pounds, seven ounces. In this case rupture of the uterus was evidently imminent, the lower
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uterine segment being found to be extremely thin and Blandl’s ring very marked. Rather free post-partum haemorrhage requiring introduction of hand for purposes of compressing uterus, otherwise convalescence uneventful till the tenth day, when a high temperature developed which proved to be due to a mammary abscess. This proved very troublesome and patient was unable to leave hospital for two and a half months. Baby did well.

17. Jane D., age forty-two, XIV-para, having had two miscarriages at five and six months, respectively, and twelve confinements at full term. The record of her confinements is interesting. The first, second, third, eighth and tenth children were born alive and lived; the fourth was born alive but died shortly; the fifth, sixth, seventh, ninth and tenth were delivered by mutilation. The twelfth I delivered myself seven years previously with very great difficulty. It is still alive but cannot talk and shows other evidences of cerebral injuries. This woman is a very typical example of spondylolisthesis both in her obstetrical history and physical signs. She was delivered by abdominal Cæsarean section before the members of the Ontario Medical Association, at that time in session, on May 23rd, 1912, and she and her baby left the hospital well on the seventeenth day. Convalescence was somewhat disturbed by the occurrence of a pleurisy on the seventh day after operation.

18. Mary J. T., age twenty-nine, II-para. She is a rickets dwarf, being four feet seven inches high, with well marked signs due to rickets both in her pelvis and elsewhere. Both previous children delivered by craniotomy. Abdominal Cæsarean section done at term May 30th, 1912. Baby living, nine pounds eleven ounces. Recovery uneventful, both leaving hospital well in two weeks.

19. Mrs. S., age twenty-seven, I-para. Had had two severe floodings on preceding day. Central placenta praevia diagnosed and demonstrated to be so at abdominal Cæsarean section on July 25th, 1912. The patient was not in labour and the os not readily dilatable. The baby was born alive and weighed seven pounds three ounces. There was a rather troublesome post-partum oozing requiring manual removal of clots from the lower uterine segment about ten hours after operation; convalescence otherwise uneventful. Patient was in bed for twelve days and left hospital with her baby on the sixteenth day.

20. Mrs. McL., age twenty-eight, I-para, strong, healthy woman with a normal pelvis. Previous labour two years before was
very long and severe owing to breech presentation and very large head. In this labour she had very extensive pelvic injuries involving cervix, vagina, perineum and rectum and the baby was dead. For a time her physician and friends feared that she would lose her reason, to such an extent did she fret over the loss of the child. It was not till about six weeks before the birth of the second child that she ceased making regular trips to the cemetery to put flowers on the grave of the child which had been born dead two years before. She insisted that no chances should be taken which might in any way lessen the probability of this child being delivered not only alive but uninjured. On palpating two weeks before the expected date of confinement I found the baby to be presenting as did the first one, viz., by the breech. There existed a distorted condition of the cervix which was said to have been present at the first labour and which was possibly due to a penetrating vaginal wound during childhood, and I felt that the prospects of success this time were not much better than on the first occasion and advised Cæsarean section. This was concurred in by Drs. Adam Wright and McIlwraith, of Toronto, and Dr. Chipman, of Montreal, and the operation done on November 23rd, 1911. Baby weighed nine pounds four ounces. Convalescence uneventful.

21. Rose G., III-para, this is same patient as reported above (Case 4). A second Cæsarean section (abdominal) was done on January 13th, 1913, being just under nineteen months since the previous operation. Some adhesions of omentum to abdominal wound and to uterine scar were found, but gave no trouble. At patient's request she was sterilized by dividing and suturing tubes. The baby weighed seven pounds, twelve ounces, and left the hospital with its mother in two weeks after operation. For a few days there was a good deal of trouble with abdominal distension but otherwise convalescence was uneventful.

22. Clara W., a little woman only four feet, eight inches in height and weighing seventy-five pounds, was admitted to hospital early in January last, and on routine examination was found to have a justo-minor pelvis with external measures: interspinous 20, intercristal 22, and ext. conjugate 16 cm. Being a primipara she was allowed to go into labour, which commenced early in morning of January 30th. At the end of six hours the head was not engaged in spite of good contractions and it could be readily felt overlapping the brim of the pelvis. The membranes were unruptured, though at the operation I remarked on an unhealthy discoloured appearance of the membranes which covered the lower
pole of the uterus. Convalescence was very stormy, and six days after the section I opened Douglas' pouch with some apparent benefit, but the temperature still remained up and gave us much anxiety for nearly four weeks. Recovery eventually appeared to be complete, and the mother and baby are both well and thriving to-day.

23. Mrs. M., reported above, Case 2, as Nellie S. Abdominal Cæsarean section done for second time on May 2nd last, at term. No adhesion found and uterine scar scarcely noticeable. At patient's request tubes cut and sutured. Baby weighed six pounds eight ounces. Living. Convalescence uneventful. Stay in hospital fourteen days.

24. Maud H., married, I-para. First confinement took place just one year before Cæsarean section which was on January 12th last. Her labour proceeded apparently quite normally until the outlet was reached, when progress ceased and difficulties presented themselves. I was called to deliver her and did so after a very difficult time with forceps. The outlet was so narrow that it was with difficulty that one's hand could be passed between the bones (6 cm.). The baby was finally delivered alive but with many evidences of both extra- and intra-cranial injuries from which it died in convulsions about a week later. The first baby which was lost weighed nine pounds, ten ounces, and the one delivered by section, nine pounds, four ounces. Convalescence uneventful. Stay in hospital sixteen days.

25. Pearl H., abdominal section at eight months for accidental hæmorrhage with a rigid os and living child, on November 22nd, 1912. Patient left hospital in three weeks, but the baby only lived a few hours.

26. Mrs. B., age twenty-seven. Two miscarriages at about five months. On routine examination pelvis found to be much below average, interspinous 21 cm., intercristal 23 cm., and ext. conj. 16 cm., diagonal conj. 10 cm., from which true conj. was estimated as about 8 cm. Being her first labour at term she was allowed to go into labour, and after a test of four hours good pains, the head not having engaged in the brim, a Cæsarean section was done. Baby six pounds, nine ounces. Convalescence uneventful.

Of the twenty-six operations, sixteen were done because of obstruction to delivery owing to contractions in the bony pelvis; six were done on account of ante-partum hæmorrhage with undilated os; and one each for eclampsia at term, large baby, and stenosis
of soft tissues; one case is unclassified owing to loss of history.

Five cases were second operations on the same patient and two patients have subsequently delivered themselves unaided. All of the children were delivered alive and all but three left the hospital in good condition. The three who died doing so during the first two or three days from prematurity.

One mother died, but it might fairly be claimed that her death was not due to operation.

All of the cases might be classed as primary operations in that they were either done before the membranes had ruptured or before any attempts had been made *per vaginam* at delivery, or more than one or two vaginal examinations made and those under the strictest precautions.

The operations were performed in various places, one being in the Toronto General Hospital, one in the Western Hospital, one in the Cottage Hospital, one in a private house and the balance in St. Michael's Hospital.

*The Operation.* The technique of operation has been the same throughout this series and consisted of the following steps:

(a) Sterilization of the skin by thorough scrubbing with soap and water, followed by alcohol and bichloride of mercury or tincture of iodine.

(b) The incision was very rarely more and often less than four inches in length. The place selected for it was about an inch to the right of the middle line, with the centre of the wound opposite the umbilicus. Intestines were never encountered in opening the abdomen, and omentum on only two or three occasions where it was adherent to the line of scar of a previous operation.

(c) The uterus was opened *in situ* and the child delivered by grasping a leg, no attempt being made at *haemostasis* until the placenta and membranes had been removed. The finding of the placenta attached directly under the line of incision was of frequent occurrence, but gave no trouble. The hand was simply pushed through it or around it, as seemed best, but without any delay, and child and placenta removed together usually under such circumstances.

(d) As soon as the placenta and membranes were removed the uterus was grasped and delivered through the abdominal wound. The first assistant immediately applied his palms to the sides of the uterus, compressing it firmly in such a way as to evert the cut surfaces, thus rendering the introduction of sutures easy,
but what is perhaps of greater importance, stopping the bleeding from the uterine wound and obliterating the uterine cavity and maintaining such obliteration until such time as the firm contractions of the uterus had made such compression no longer necessary. By this means the formation of clot within the uterine cavity is prevented and much discomfort saved. Latterly I have been in the habit of giving 15 minims of pituitrin hypodermically as soon as the child is delivered, and have by this means induced contraction of the uterus in a very few minutes and shortened greatly the time necessary to keep the uterus compressed, much to the relief of the assistant whose duty in that respect not infrequently became very exhausting.

(e) Three rows of sutures were used in the uterine wound, all being of No. 2, ten day, chromic catgut. The first was a continuous suture embracing the inner half of the muscle only. The second were interrupted sutures securing the outer half of the muscular coat and emerging on the peritoneal surface. The final set approximated the peritoneal edges, where necessary, and were also interrupted. By the time the sutures were in place the uterus almost invariably was firmly contracted, and where pituitrin was used the contraction occurred earlier and was more effective.

(f) The uterus was then returned to the abdominal cavity, blood and liquor amnii, if such had entered, sponged out, and the abdominal wall closed in layers as is customary with other abdominal operations.

I do not rupture the membranes before opening the uterus nor do I, as a rule, dilate the cervix. On only one occasion was any dilatation of the cervix done, and in that case it would not admit one finger and I was a little afraid of blood being forced through the uterine wound in the event of clot forming in the uterine cavity, and strong contraactions occurring in the effort to expel the clot. There has been a good deal of discomfort in a number of the cases from abdominal distension but this was usually over in twenty-four hours. Otherwise the patients expressed themselves as being comfortable, were able to take nourishment freely, being usually on full diet by the fourth day. Stitches were removed by the eighth or ninth day and most patients were out of bed on the twelfth day and able to go home in a very few days after getting up.

There are just a few remarks that I would like to make about one or two groups of cases. First as regard pelvic contraction. It may be remarked that I have not gone much into detailed report of pelvic measurements. It is not that I do not
use the pelvimeter and value its findings, but I am more and more using it mainly as a means in routine examination of detecting those cases which may have deformed pelves and indicating with what cases to be especially on my guard. As soon as one commences to lay down definite rules for procedure based upon the true conjugate or any other diameter of the pelvic brim or outlet, then, I think, its usefulness is in a fair way to be lost and it may be the means of leading one into trouble. By far the best internal pelvimeter is the head of the child that has to pass through that pelvis. If the head will pass through the pelvis what difference what contraction exists? And on the other hand, if it cannot do so without serious injury the most convincing demonstration that the pelvis is ample for an average child will not assist very much in the delivery. In badly deformed pelves it is a simple matter to decide upon a course of action but in the slightly contracted cases it is not so easy. The woman’s previous obstetric history is a very important factor in arriving at a decision, but even here, and in all primiparæ in this class, I always feel that labour should be given a fair trial with the exercise of strict precautions against the introduction of sepsis before proceeding to operation. On more than one occasion I have been surprised at the facility with which a woman succeeded in delivering a child through a pelvis which without doubt was not a little below the average in point of size.

In regard to the cases of ante-partum haemorrhage I wish to say that I think there is a place for Caesarean section in their management. Given a primipara at or near term with a placenta praevia, the patient not being in labour or the cervix readily dilatable, I am convinced that the mother’s risk can be greatly reduced and the baby’s life all but guaranteed by section, whereas by other procedures the chances for the child are small and dangers to the mother very considerable. The success attendant upon repeated sections on the same patient and the safe passage through a subsequent normal confinement of other cases, serve to demonstrate that there is not much to be feared from the supposed weakening of the uterine wall, and justify us in proceeding by this method where such seems to offer the best chance for mother and child, without much fear of complications arising as a result of the operation during a subsequent pregnancy or labour, where conditions may be different and not such as to preclude delivery by the vagina.
A NEW AND RATIONAL METHOD FOR THE
STUDY OF THE FUNCTIONAL DISEASES
OF THE NERVOUS SYSTEM

By Goldwin W. Howland, M.D., M.R.C.P.,
Physician to the Outdoor Department for Nervous Diseases, Toronto
General Hospital

DURING the period of time that I have been teaching medicine, there is a fact that has always impressed me and which becomes more and more apparent as experience grows wider, and that is, that the terms neurasthenia and hysteria as denoting certain functional diseases of the nervous system have outlasted their usefulness, and are now a source of error in diagnosis and a block to the further knowledge of the causes of nervous disease, and to the recognition of the finer functions of the nervous system. It is my object to prove this contention, namely, that the terms neurasthenia and hysteria should be relegated to the history of disease, and to briefly show you in what direction it is advisable to advance our methods of study of functional nervous disturbances. In the first place I shall urge that the present study of these so-called diseases is largely in a wrong direction, and is leading to the production of sub-classes that are misleading and are not along the lines that lead to advance in our scientific knowledge.

In the earlier study of diseases the natural method of research has been to collect together groups of symptoms, common probably to many different diseases, a method which may be termed generalization, while later in the advance of knowledge these symptoms become recognized as distinct disturbances of function, which are either found to be characteristic of definite pathological conditions, or the pathological change may not be arrived at, being a temporary or simple metabolic change. The completion of our knowledge is attained when there is found, in addition to the morbid functional and anatomical conditions, the actual cause producing them, in which case we have succeeded in the isolation of a definite disease.

Read at the annual meeting of the Canadian Medical Association, London, Ont., June, 1913.
For instance, take the diseases "arthritis," originally a great group of joint diseases with certain characteristic general signs—swelling, pain, tenderness and so on. As knowledge grew these general signs were discovered to be due to disturbances of function of definite anatomical structures, for instance, of the synovial membrane or the cartilage or the bone. Having reached this stage of discovery our scientific energies are directed now in the pursuit of the causes, and we are gradually separating infectious arthritides from one another and from metabolic arthritides of various forms, e.g., notice the late discussion in the British Medical Journal between Sir James Barr and Dr. Luff. So also in lung diseases with haemorrhage, expectoration, and dyspnœa, these were found to be disturbances of function occurring in different anatomical regions of the respiratory system, and these functional disturbances were gradually allied to pathological changes. But it was only when we reached the cause that the diseases were finally and definitely separated the one from the other.

But when we turn to neurasthenia and hysteria, we find that science has not followed the same natural method of advance, and instead of gradually reaching the true termination and dividing these diseases according to their causes, the tendency has been to widen the enormous field which these terms include, either by separating from them other classes such as psychasthenia, based on a similar collection of general symptoms, or by subdividing the functional diseases and forming classes such as cerebrasthenia and somasthenia, sexual neurasthenia, etc. Such subdivisions are not the result of an attempt to make cause the basis for the separation, for you will at once realize that sexual neurasthenia is by no means caused by sexual conditions alone, nor gastric neurasthenia by stomach malfunctioning. These subdivisions are simply the extension of the plan of collection, generalizing into diseases, and then separating such into groups arranged according to disturbances of similar functions.

Yet let me recall the fact that Sigismund Freud has evidently tried to avoid this unsatisfactory method. He has isolated anxiety neuroses and masturbation neurasthenia from the group, truly a division based on cause, but unfortunately one whose value is limited, as he has obtained such a small number of groups based on cause for such a great disease as neurasthenia. With hysteria the length of its scientific life has evidently placed the disease beyond any attempt at a similar recovery.

Sufficient stress cannot be laid upon this point. The functional
disturbances of the nervous system must be separated into diseases classed according to cause, not on the present basis of calling a collection of symptoms a disease. So that in advising the relegation of neurasthenia and hysteria into the field of obscurity I do so in the first place because the natural method of advance is, firstly, the collection of symptoms and their separation according to specialized function; secondly, the determination to see if a general nervous function is at fault. I refer here to such general conditions as irritability, tone and so on; thirdly, when possible the association of such functional derangements in specialized centres to pathological conditions be they gross or minute; and finally, and always most important, the discovery of the cause. Never stop short of this supreme object of finding the cause for the functional derangement complained of by your patient.

While discussing this feature of the ultimate division of all diseases under the cause, another great class of diseases comes into view, I refer to the insanities; a group that should not be separated either in text-books or in teaching from the nervous diseases. Why should alcoholism be placed under mental disorders for psychical symptoms and under nervous disorders for neuritis; and consider also similar absurd cases, namely, where toxic conditions affect the brain and spinal cord; cerebral diplegia with mental or nervous symptoms; epilepsy and epileptic insanity, and so on; perhaps I might even suggest general paralysis and tabes. There can be no separation between psychical and nervous disorders except on the basis of disturbances of specialized functions.

These mental disorders are practically in the same class as the functional nervous disorders, they are nearly all divided according to the groups of symptoms; "manic depressive insanity," "dementia praecox"; and there is no true scientific cure, all are treated by symptoms, and there will be no success till the causes are differentiated. Let me add, the mental men are working along that line. Recently one writer has claimed the cause of dementia praecox to be due to particles of the sexual glands in the blood. The trend is in the direction I point to, although there is little effort being made to delimitate the physiological disturbances according to general function.

The second reason for laying aside the diagnosis of neurasthenia and hysteria is that one is turned aside from a great opportunity for studying and differentiating the diverse functions of the nervous system. If one collects the symptoms which fall into a specific functional group of the nervous system—and by these specific
groups I refer to motor, sensory, vasomotor and such visceral
groups as the sexual, genital, respiratory, cardiac and so on—
take, I repeat, all the signs found of malfunctioning in such a group;
collecting them from all cases of functional nervous disease, and
you will find that you have many different types of general function-
al disturbance of the nerve cells, conditions of increased irritability
and of diminished irritability, of loss of tone, of involuntary action,
and of sub-voluntary action, besides other conditions which I
shall not refer to.

You will find on taking up other groups that a parallellity of
general functional disturbance runs through group after group,
and studying them, not only is your knowledge of the functions of
the nervous system wonderfully broadened, and not only does one
recognize the similarity of action throughout the nervous system
in a most interesting manner, but also on the other hand one recog-
nizes that this is one method by which we shall approach the de-
sired issue of localizing new functions and associating the same
with groups of nerve cells which at present have no defined action.
For instance, take the interesting work that Kinnier Wilson has
lately done, showing that organic disease affecting the lenticular
nucleus leads to a certain form of tremor. We shall be able by
this new method, I believe, to determine also the seat of many
conditions now termed under the fullness of our ignorance hyster-ical or functional.

In the third place, in the teaching of students by the present
method we find that they begin to look on neurasthenia and hysteria
as a token for all that is uninteresting in medicine. As a type of
case which has nothing tangible behind it. But if you commence
teaching disturbance of function, you give the men some definite
problem to work out, and you show them the necessity of arriving
at a cause, and you have men keen and interested in the various
cases they previously scoffed at.

The fourth reason for my urging this change in procedure is
an important one, it is to avoid mistake in diagnosis. In my
experience the worst mistakes that I have come across have always
been in diagnosing as neurasthenia and hysteria diseases that were
of a most serious nature; and the cause for this has been that where
you have a group of symptoms such as neurasthenia covers, a
group, I repeat, which frequently precedes the onset of more ad-
vanced signs of other diseases, and which the physician is inclined
to use as a diagnosis to save him the attempt to find a cause, in
these cases the most terrible mistakes occur. Let me emphasize
this by giving a few that I have lately come across.
Case 1. A lady, sixty years of age, treated for one year for neurasthenia, seen by one of the most celebrated London, England, consultants, and again diagnosed as the same disorder. Three days afterwards examined by a nose and throat specialist and cancer of the oesophagus found.

Case 2. A woman of forty years, seen by a nose and throat specialist, diagnosed neurasthenia, treated as such by myself for six months and returned to nose and throat specialist who found cancer of the oesophagus.

Case 3. A man of forty years, treated for neurasthenia by well-known physicians. X-ray examination showed large mass in region of oesophagus, from which he died.

Case 4. A woman, forty-eight years, with the general signs of neurasthenia for some ten years, undergoing several rest cures, examination showed gummata on legs, Wassermann reaction positive.

Case 5. A girl, thirty years of age, gradual onset headache, tiredness, general pains, diagnosed as neurasthenia, given careful examination by most intelligent physicians; died in three weeks of meningitis which could have been diagnosed if spinal fluid had been examined.

Case 6. Lady of fifty-two, with what are called typical symptoms of neurasthenia, treated as such for a year. Serious signs finally developed and she died from bulbar paralysis.

Case 7. A woman, thirty-eight, in a large hospital for three weeks, diagnosed as neurasthenia of typical nature, whom I was called to see a week after she left the hospital. Pelvic examination showed mass in pelvis, later proven to be tuberculous.

As to cases of toxæmia, early typhoid, general paresis, arteriosclerosis, and many other similar conditions, the mistakes made in these directions are as frequent as they are unfortunate. And yet if the intention in all these cases had been to consider the symptoms complained of as disorders of function, then I believe that in the more careful search for the cause which would naturally be demanded to complete the diagnosis, few if any would have reached so hapless a conclusion.

The fifth error that impresses me, is that in using the terms hysteria and neurasthenia, the doctor regards them as if they were definite diseases, and normal for a definite type of individual. Now while there are unhappines who exhibit the characteristic disturbances that have been isolated through the study of hysteria and neurasthenia, and exhibit them from the time of birth, forming
the congenital cases, yet it is equally true that individuals who are absolutely normal may at some period of their lives through some cause, be it toxic, psychic, or metabolic, temporarily develop the definite functional disturbances covered by these terms. Ordinary hysterical convulsions are common in practice. Nervous asthma, pelvic attacks of nervous origin, cardiac conditions, forms of tremors, and many other line conditions are frequently observed, yet the individuals suffering from them have always been normal persons, mentally and nervously, before some unusual cause produced the extreme condition for which you were called to see them.

Again, let me urge in the sixth place, that in these diseases the typical, functional disturbances which they include are not necessarily present in the same individual. The nervous irritability and the nervous exhaustion of neurasthenia are frequently combined as, also in gastric conditions you may have a combination of hypersecretion and hypermotility; but over and over again patients are seen in whom irritability is the only function affected, while in others exhaustion in some specialized function may be present, quite apart from any disturbance of the nature of irritability.

Lastly, in the seventh place, note that the individual you at one time termed hysterical, may at another give you symptoms typical of neurasthenia. I judge you have noticed how much more commonly the defects covered by the name of hysteria are found in youth, while as age advances one is much more likely to meet conditions characteristic of neurasthenia.

In conclusion, I should like to say that having given my objections, and I consider they are strong and well-balanced, it is natural for you to ask what is the remedy. This opens up at once the subject of what are the general functions of the nervous system, and I use the term general to separate such conditions as irritability, tone, involuntary action, and so on, conditions, which are common to every nerve cell, from specialized functions such as motor, sensory, etc., which are the property of certain nerve cells in definite anatomical regions. Let me say that I intend to bring this subject of the remedy before you at a subsequent meeting, but I should like to say that so far in my work I have found a wonderful change in the interest which I and my students take in working from this new basis. I feel satisfied that this method is the correct one and regret that time will not allow me to enter on such a large subject now.

I finish by claiming that I have put forward a strong case for my plea that the terms neurasthenia and hysteria should not be
used as diagnostic conclusions but should be entirely omitted, and that the time has come for reviving the study of the general functional disturbances of the nervous system, using the vast material which we have acquired: we should also endeavour to make more definite research into the specific difference of function belonging to nerve cell groups in different parts of the nervous system, and there should be further advances made in associating these functional disturbances with chemical and physical changes in the nerve cells themselves. And finally, and most important of all, we should decide only to classify our functional nervous diseases according to Cause.

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It is probable that a by-law will be submitted to the ratepayers of Winnipeg in December, to grant $275,000 to the Winnipeg General Hospital. Extensive additions to the hospital have been made recently and the cost has been greater than was estimated. $605,000 have been expended on the main buildings, $54,000 on a nurses' home, and $14,000 on a residence for the medical superintendent. About $450,000 has been received already by the board, but there exists also a mortgage of $60,000 so that a sum not less than $275,000 is required to pay off existing liabilities. A good many of the patients treated in the hospital come from points outside Winnipeg, and it is suggested that the provincial government might very properly give some further assistance.
THE TREATMENT OF TUBERCULAR SPONDYLITIS OR POTT'S DISEASE

By W. G. Turner, M.D.

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For many years, and in fact in certain quarters up to date, the treatment of Pott’s disease has been carried out in a more or less perfunctory way either by a varying period of rest in bed on a hard plane or by means of plaster corsets or braces. The early diagnosis has been a matter of speculation and especially the progress and pathological condition present. One must confess, also, that there has been considerable neglect in the attention paid to the region affected; that is to say, especially in the cervical and upper dorsal. Variations must also be made as to the age of the patient, whether infantile, juvenile or adult.

Before going farther it will be absolutely necessary to briefly review some of the pathology of the question.

Pathology: I will just briefly mention some points of advance in this branch. Owing to the work of Brackett we have some clue to those puzzling cases of Pott’s disease with early paraplegia. From a study of a number of specimens he draws attention to the fact that, whereas in the greater number of cases the involvement is towards the anterior part of the vertebral body and gradual extension of the disease is above, below, and backwards, until the gradual collapse of the front vertebral column produces the hump clearly recognized; yet in a certain percentage of cases the primary focus is to the centre of the body of the vertebra, or farther back. When this occurs, combined with the extension backwards, quite a different condition results. Here the vertebral column has a solid column of bone up the front composed of the intact part of the anterior portion of the bodies; posteriorly a corresponding buttress composed of laminae, spinous processes and ligaments. This almost preserves the symmetry of the column and causes the clinical condition of “straight back.” The deceptive factor is that in a certain number of cases the disease progresses backwards and early invades the neural canal with the resulting complication of paraplegia.
In a large number of cases the caries progresses as such, with the production of granulation tissue and a small quantity of cold abscess pus. When this latter is in greater amount the progress of the cold abscess is along the path of least resistance; thus, in the cervical region a retropharyngeal abscess must always be sought. In the dorsal region the diagnosis of this extension is much more difficult, as here it is frequently concealed in that silent area of the posterior mediastinum. The dorso-lumbar and lumbar region are much more accessible for examination, and the well-known psoas abscess follows one of two courses: palpable in the lumbar region just above the anterior superior spine and thence through the crural canal to Scarpa’s triangle; or it descends into the pelvis, emerges through the great sciatic notch to be palpable under the gluteal muscles.

In the different regions the treatment must be very much modified. Thus the cervical region presents the support of the diseased vertebrae, plus the weight of the head; from the seventh cervical to the seventh dorsal vertebrae the problem is the difficulty of support, as here there is the weight of the head and the forward give of the shoulders increasing the tendency to the hump deformity. The dorso-lumbar and lumbar regions are more amenable to treatment or fixation, as in them the support is built up from a solid pelvic base and embraces firmly the parts above and below the disease.

Treatment of the Lesion: In infantile cases, up to the age of six to eight years, our regular method has been that advocated some years ago by Lorenz and emphasized so much by Finck, of Cracow, in 1905. This applies whether the lesion be cervical, dorsal, or lumbar. The child is laid face downwards on the table; a layer of sheet wadding half an inch thick is then placed on the patient, a plaster mould is then carefully constructed by overlaying layer after layer of plaster of Paris bandage from the top of the head to the cleft of the nates. This is carefully moulded around head, back of neck and back, and reinforced wherever any weakness is found. As the plaster is setting the child’s legs are held up in order to hyper-extend the spine. As soon as the plaster has set the mould is removed, trimmed, any roughness smoothed off and then carefully padded. It is well trimmed down opposite the arms and neck. This gives an accurate mould of the patient, and a strap over the head and one over the body prevent any licence being taken. Every morning and evening the patient is rolled over on its face, the mould removed, the back and head carefully sponged, and the
mould replaced. This is what constitutes the well-known "liegen bett" of the German clinics. In case of soiling the lower portion can be covered by waterproof material. This allows any transportation of the patient with the greatest comfort and we know of no contraindication for its use.

After the above age we are face to face with the ambulatory or recumbent question. Certain cervical cases, dorsal below the level of the eighth dorsal vertebra, and lumbar cases, when carefully selected, may be treated by the ambulatory method. Nerve pressure, cord pressure, progressive abscess formation, increasing deformity, the signs of toxic absorption, are the contraindications.

As a working basis in the course of treatment it is wise to consider the condition as a focus of tuberculosis with local and constitutional signs. Thus we find a certain analogy between pulmonary tuberculosis and the treatment of tuberculous spondylitis, or in fact surgical tuberculosis. For this purpose it has been our custom in the Orthopedic Clinic at the Royal Victoria Hospital to take those two sets of observations, commonly called the double sextette. They are all familiar to you but I will just tabulate them:

**General**

1. Anæmia.
2. Anorexia.
4. Loss of weight.
5. Evening temperature.

**Local**

1. Pain, local and referred.
2. Tenderness, local.
3. Rigidity.
4. Deformity.
5. Abscess.

If these local signs are combined with general signs there is only one treatment to follow—absolute rest with fixation and approximate hygiene. In fact, throughout your treatment these two groups go hand in hand in the direction of your case. This régime was first suggested to us after some visits to Saranac Lake. Our fixation is almost uniformly the plaster of Paris jacket or the "liegen bett." Months after all signs have disappeared we allow a Taylor brace.

Guided by the above double sextette of signs, careful treatment is followed until one year after all signs have disappeared, and the back is protected by a brace for one year after that time. I may say that in the clinic a number of the patients are wage earners as long as there is progressive improvement, and they must
report at regular intervals, supplemented by a home visit at intervals by a nurse. The cervical and upper dorsal cases are extremely difficult to treat and it is surprising how even with the greatest care deformity progresses. This appears especially so between the ages of eight and fifteen, as the patients at that era are difficult to dominate.

When fixed rigid deformity is present hyper-extension is of value in only a small percentage of cases. Our custom has been to have all patients wear shoulder straps to hold them well back against the back of the jacket. This is not essential in recumbency.

Before going on to the main subject of this paper—the radical treatment—it would be wise to briefly review the treatment of the complications.

The gravest of these probably is paraplegia, or spinal cord pressure. What causes this? A review of museum specimens is of decided value. The Royal College of Surgeons, London,\(^3\) has between twenty and thirty good specimens of the condition. In only one, No. 2,070, is there marked narrowing of the neural canal, and this was caused by a small triangular sequestrum. There was moderate sensory disturbance in this case, no motor. In St. Thomas's Hospital there were ten specimens, with no sequestra and no spinal narrowing of the canal. Guy’s Hospital had two specimens showing rectangular deformity, no sequestrum but the canal was smaller than normal. In the Berlin Museum there were few Pott’s specimens and the Dupuytren Museum in Paris shows the same results as the Royal College Museum.

The autopsy records of the above mentioned institution, and the findings in the Boston City, Massachusetts General, and our own hospital, point out conclusively that the most probable cause is the intrusion of a mass of granulation tissue in the canal, occasionally cold abscess, rarely bone sequestrum, and rarely penetrating of cold abscess or granulation through the dura.

The pressure signs vary from slight motor disturbance to complete paralysis to the level of the lesion. Sensory impairment is less marked. As is mentioned in the pathological remarks, at times there is rapid spinal cord involvement with little deformity. The most marked case in our own clinic was that of a girl, aged seventeen, who had absolute paraplegia to the level of the sixth dorsal vertebra. Her history stated positively that this condition dated eight to nine weeks from the time when pain was first noted.

Fixation, absolute rest in recumbency and hygienic régime,
are the rule. Prolonged suspension has proved a failure. As to laminectomy, Menne's figures\(^4\) show that of one hundred and thirty-two cases 56 per cent. were cured or improved, and 18 per cent. temporarily improved. The above régime should be continued until and beyond the time when pressure signs have disappeared. It is rare that treatment does not produce results. Nerve pressure is treated in the same manner.

Never hurry to invade a cold abscess. When this is prominent, puncture, but if in the abdominal area, this should be done through open incision. Three years ago when operating thus on a patient a flap of peritoneum was found to extend for nearly two inches over the prominence of the abscess. Closure should be complete and in two or three layers.

Toxic absorption, fever, and rapid pulse must be counteracted by absolute rest.

Our present treatment of the lesion is gradually taking two definite lines, the conservative and the radical.

Our present radical treatment is a great advance. Two years ago Hibbs, of New York,\(^5\) began his work on an ingenious plastic operation of taking periosteal flaps from the spinous processes, turning them up and down, and thus fixing the spine. His cases, which I saw collected some months later, contained some splendid results. In March, 1912, Albee,\(^6\) of New York published his first paper demonstrating his method of transplanting a bone splint from the crest of the tibia into the vertebral column. I have seen a number of his cases and some dog cases, and was much impressed with the value of the operation.

The suggestion of this method of treatment followed a paper by Lange,\(^7\) of Munich, at the May, 1910, Congress, on the treatment of tubercular spondylitis by means of buried steel rods on each side of the spinous processes, and a paper by Bracket\(^1\) reviewing the attempts of nature to heal these cases. The material was from the rich supply of the Warren Museum, Harvard University. The specimens show that a firm, bony bridge had been thrown out ankylosing the spinous processes, though there was no caries at that site. In other words, given a solid posterior bridge there will be no crushing forward on the diseased vertebrae, rest is assured for the diseased area and healing is rapid and complete.

It is needless here to enter into the discussion of the fate of the bone graft, but mention must be made of the two camps. Macemen, Kausch, Marchand, and others, maintain that the implanted bone persists and lives as such. Murphy, Skeeda, and
others, hold that it merely becomes a scaffold for the formation of new bone along the same. In any case a permanent supporting bone splint is obtained. In one of our own cases an x-ray picture ten days after operation showed a faint shadow of the graft, where four weeks later there was a dense shadow.

"With the patient in the ventral position, the spinous processes are reached by a curved incision to one side and the turning up of a skin flap. Care is taken not to incise the supraspinous ligament (which is the prolongation of the ligamentum nuchæ) to one side. Then with a scalpel the cartilaginous tips of the spinous processes are split in centre, also the above-mentioned supraspinous ligament, leaving each part of it attached to the halves of the spinous processes. The interspinous ligaments are split into equal parts to a depth of about three-quarters of an inch, without disturbing their attachments to the spinous process. Very little haemorrhage results, because only dense ligamentous tissues have been incised; which is in considerable contrast to the haemorrhage resulting from the separation of the muscles from the spinous processes in a deeper operation, such as a laminectomy. With a chisel and mallet each process is split longitudinally into equal parts for a depth of about three-quarters of an inch, care being taken that green-stick fractures are produced on one and the same side of all the spinous processes. A separation of the tips of the halves of each spinous process produces a wedge-shaped cavity, into which the prismatic shaped transplant is later placed. It is important that the spinous processes be split in situ with all the ligamentous and muscular insertions undisturbed, as in this way none of the natural supports of the spine are taken away, and the ligaments afford, by means of strong ligatures, an excellent medium for firmly fixing the bone splint in place. A hot saline pack is placed over the back wound until the bone insert is obtained. With the patient still in the ventral position, the leg is flexed on the thigh and an incision over and down to the crest of the tibia is made. The fascia and subcutaneous tissues are carefully separated from the periosteum of the anterior—internal flat surface of the tibia. With a sand bag in the popliteal space and behind the leg a prismatic-shaped piece of the tibia is removed with a sharp chisel. A motor saw also affords a very rapid and exact method of securing the graft, and this we have found of decided value in our own cases. The length of graft varies according to how many vertebrae are to be spanned, its breadth from two-thirds to three-quarters of an inch, according to the size of the patient; its thickness, from one-third
to one-half for the same reason. The longest graft in our cases at the Royal Victoria Hospital was 16 cm. All diseased vertebrae and one healthy one on each side should be included within the insert. The graft is inserted between the halves of the interspinous ligaments and the spinous processes with its edge anterior or innermost. It is held firmly in position by interrupted sutures of heavy or medium kangaroo tendon or catgut, which are passed through the supraspinous ligament and the posterior edge of the half of the interspinous ligament on either side near the tip of a spinous process. The suture is brought over the graft posteriorly and into the same ligaments on its other side. The ligaments are then drawn over the insert posteriorly by tense sutures, placed together. If there is a moderate kyphosis of short duration, it is entirely obliterated, any kyphosis of a few years or less duration becomes much diminished either at the time of operation or the first few weeks after or both (Albee\(^8\)).

In three instances tuberculosis tissue, with cold abscess formation, was entered in the region of the spinous processes. The grafts were inserted as usual and primary union resulted in each case. In several of the later cases where a kyphosis too old or too great to be entirely corrected has existed and it has been impossible on account of the angulation of the spine to secure a straight splint properly, in place of the spinous processes a very broad bone splint has been taken (in some instances the complete width of the tibia) then moulded with a sharp rongeur bone forceps, into the segment of a circle. The graft, however, is always straighter than the kyphosis, and the spine is straightened and drawn to the bone splint by means of the heavy ligatures. When the deformity has been too great, even for this method, the graft has been placed with its wider diameter in a lateral rather than antero-posterior plane, and then bent into place between the halves of the spinous processes and held with heavy kangaroo tendon as above indicated.

This has been accomplished successfully in children where grafts of the following dimensions were used, \(4\frac{1}{2}\) by \(\frac{3}{8}\) by \(\frac{1}{4}\) inch. In later cases of all ages, especially adults, where it is necessary to bend the graft, it has been found preferable to saw one half the way through it on what is to be its concave side four to eight times, at the place where it is to be bent (as the carpenter does when he bends a board). The distance between these saw cuts has varied according to the size of the graft, from one-eighth to three-quarters of an inch. The transplants have varied in size from four to seven and one-half inches in length; three-eighths to one-half inch in
width; one-fourth to one-half inch in thickness. Care is taken that the insert has some bone marrow; the importance of this has been pointed out by several German investigators.

Before placing the transplant in its bed, its periosteum is incised in many places so as to allow the underlying osteogenetic cells exit for proliferation. In adults when we do not wish the bone graft to grow longitudinally the incisions are made lengthwise of the graft. In the case of children they are made crosswise. After pressing the graft in place the dense supraspinous ligament, with the posterior part of the halves of the interspinous ligaments, is drawn over the graft with interrupted sutures of heavy kangaroo tendon. It is thus firmly embedded under tension in the spinous processes and the dense intraspinous ligaments, and affords immediate and excellent fixation of those vertebrae involved, even before union takes place. The immediate fixation thus obtained must be far more perfect than that secured by any external orthopedic means, as plaster jackets, etc. This has been especially confirmed by the immediate disappearance of pain in adults and pain and night cries in children (i.e., within a few days). The environment of the spinal insert thus placed is most favourable, it is not only wedged into well nourished, healthy spinous processes which are less than three-quarters of an inch apart, but is also surrounded throughout its whole extent by ligamentous tissue, which is normally attached to bone. The conditions are very favourable to a rapid establishment of an Haversian blood supply from the spinous processes to graft. In one of our cases at the Royal Victoria the end of the graft slipped from the cleft between the split spinous process, but the radiogram clearly showed a bridge of callus from the end of the callus to the cleft above.

Our own experience has been very gratifying, the complete relief from all signs beginning forty-eight hours after the operation. The after-treatment we have followed has been, eight to ten weeks in a "liegen bett." It has also seemed wise, unless otherwise indicated, to delay operation until the seventh or eighth year. This is merely a theoretical action based on the report of the Buda Pesth Congress on the results of arthrodesis at a younger age.

Provided the bone graft be not unnecessarily long, I cannot see that the fixation of four vertebrae would materially affect the growth of a patient in the juvenile class of cases. In young cases, when the deformity is of considerable extent the operator must assure himself that the tibia is long enough to provide the requisite length of graft. In some cases also the greatest care must be observed to prevent decubitus sores.
The question of the fate of the graft is one which is very puzzling to me. I mentioned one case above, but since then I have had the opportunity of having an x-ray picture taken in four others, ten days to two weeks after operation. These have all shown just a faint shadow of the graft, almost imperceptible. Clinically also the flexibility of three other patients three to four months after operation is against the complete bony ankylosis and yet the improvement, local and general, has been marked in all cases. The conclusions I would arrive at would be to advise the operation in adult cases where the deformity will permit the graft being thoroughly inserted, and in juvenile cases where the same can be accomplished, but especially in upper dorsal cases. In the infantile case I feel strongly in favour of the "liegen bett" from the results I have had.

Operation in the cases where sinuses with mixed infection are present must be judged from the surgical standpoint. The question of temperature and increased pulse rate as an index for the constitutional effect must be carefully and thoroughly judged before major surgical procedure can be advised.

References:

THE RUNNING SUTURE—AND THE BLOODLESS OPERATION

By F. N. G. Starr, M.B. (Tor.)

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For many years I have been endeavouring to eliminate, as far as possible, the ligature, and with it the knot, from my wounds, believing as I do that the knot is a frequent source of irritation that may lead to suppuration, for I suppose it is a well recognized fact that most wounds contain bacteria when an operation is finished. If, then, one is able to eliminate a mechanical irritation, one should also succeed—with other care—in eliminating, with greater regularity, failure in primary union.

My excuse for bringing such a simple matter before this Association is, that time and again surgeons who have been present at my operations have commented upon the simplicity of the technique, the absence of ligatures and the freedom from haemorrhage.

When the incision is made in any part, all bleeding points are caught in forceps—preferably Ochsner's—and these are usually left until the completion of the operation, though often even this is not necessary. Towels are then clamped over the skin edges to prevent infection from the cut margins.

When one comes to close a central, abdominal incision he begins with a long suture of plain iodine catgut No. 1, at the lower end of the peritoneum and fixes it with a single half turn, leaving an end three or four inches long caught in the forceps. At the upper end the last loop is kept slack until the needle is again passed through this loop and drawn taut. Believing that in the last analysis the recti muscles are the great protectors against ventral herniae, the edges of these are approximated. In this suture great care should be exercised—most surgeons suture the muscles too tightly—and one of two things must happen under such circumstances, either the suture will cut through in a few hours, causing great pain, or the muscle so constricted will slough. In either case the end sought after will not be attained. The suture is carried

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Read at the Annual Meeting of the Canadian Medical Association, June, 1913.
down to the lower end, the last one is put through double and tied with a half knot to the original loose end. Then the aponeurosis is sutured with the double thread, leaving a loop again at the top, and one strand is cut so that a single thread comes on each side of the loop, and these are tied in a reef knot. With the single thread one goes down through the fat and subcutaneous tissue, taking care to surround any vessels that may bleed, and catching here and there the already-sewn face of the rectus sheath, thus obviating any dead space. At the bottom the knot is completed. Thus one has a knot at the bottom and at the top of the wound and none along the edges, and no bleeding, as well as an absence of dead space.

The same method may be used in closing a hernia or in sewing up after a thryoidectomy. Speaking of the goitre operation, I know of none that lends itself so well to the running suture as a method of controlling hæmorrhage. During the early progress of the operation all bleeding points are caught in forceps, and as early as possible the superior thyroid is secured, ligatured and cut. From that on it is not necessary to use a single ligature. I have not used any for years. The capsule is stripped back and the gland dissected to a pedicle. This pedicle is then clamped with an Ochsner forceps, or two if needed, and the gland is cut away. The running suture is tied under the point of the forceps and then one surrounds the clamp with the running suture, as in the operation described by Pilcher for hæmorrhoids. The clamp is then withdrawn from the loops and the suture drawn tight and tied. The capsule is sewn over the raw surface of the gland and all former bleeding points held by forceps are caught in loops of the suture till all the forceps have been disposed of and there results a perfectly smooth, dry surface with no more than three knots buried about the gland. Closure of muscles and skin may then be proceeded with.

In removing subserous fibroids the running suture has proved a most excellent help. The serous coat is stripped down near to the base of the tumour, and then a forceps—depending upon the size of the tumour—catching the serous coat on each side of the tumour—is clamped home and extrudes the growth. The running suture is then applied, the forceps withdrawn, and the suture drawn tight. There has been no bleeding and the uterus has a smooth, nicely approximated serous coat.

I succeeded in removing seven such growths—the largest about the size of a pineapple—from a uterus four months pregnant, with so little disturbance to the uterus that pregnancy continued
until the very day of expectancy and terminated with the presentation of a nine pound boy. The specimens as they appear are not nearly as attractive from a museum point of view as would be the patient’s uterus with a window showing the foetus in utero, but the mother is much happier in the possession both of her normal uterus as well as her sturdy child.

Again, in hysterectomy for fibromyoma, an Ochsner forceps is clamped on the broad ligaments, including or excluding the ovaries, as may be required, being careful to have the point of the forceps grasp the uterine artery. The tumour is cut away and a piece of No. 2 plain sterile catgut doubled catches the outer edge of the cut broad ligament. The forceps are then oversewn, the last loop at the forceps’ point surrounding the artery. The forceps are then slipped out of the loops and the suture drawn tight. The suture thus catches the cut cervix, including the edge of the reflected serous coat, across the cervical stump, at the edge of which it surrounds the uterine artery of the other side, and continues in loops about the other forceps, which are then withdrawn, and the loops are pulled tight and the suture is tied, when it is found that not only is the hysterectomy completed but the toilet of the stump as well. I have not put a ligature on the uterine artery for seven or eight years. All that remains is to close the abdomen and the operation is finished in from fifteen to thirty minutes, according to the primary difficulty one may have in delivering the growth from the pelvis.

I use the same method of haemorrhage control in pan-hysterectomy. A loop is made surrounding a tube, passed into the vagina, with a knot on each side of the tube so that there will be no relaxation of the sewn vagina and broad ligament, when the tube is withdrawn. In the removal of a gall-bladder that is intimately connected with the liver one may begin with the running suture as soon as he starts to detach the gall-bladder. By detaching the gall-bladder with one hand he may follow with the continuing suture in the other hand, controlling haemorrhage as the dissection proceeds. When the gall bladder is detached and ready for removal, if there are still any bleeding points, one simply returns along the former line of suture until all oozing has ceased, the first line of suture giving a firmer base into which one may sew when working in such friable tissue.

The same procedure is followed in rupture of the spleen, where haemorrhage is so free, or when a tumour or cyst has been removed. If the first line of suture is not sufficient sew some more, and keep
on sewing till all oozing has ceased. By this means a portion of spleen, that one would otherwise require to remove after ligaturing the pedicle, may be saved.

In resection of the bowel—even the extensive operation where the entire colon is removed—I have found the continuous suture most useful. The mesentery is clamped between a double series of Ochsner forceps, cutting between the forceps as one proceeds, and the bowel is quickly removed. With a double strand of No. 2 iodine catgut one begins by oversewing each pair of forceps, then removing the forceps and drawing the suture tight. When the suturing is complete and the surgeon is ready to tie the proximal and the distal ends of the mesentery, he finds the bowel ends to be anastomosed, not only approximated but resting in their proper relative position, with no tendency to an imperfect rotation. The anastomosis is then easily and quickly accomplished.

I do not claim any originality for the introduction of the running suture, or for the oversewing of the clamps, although I did have a paper partly prepared describing a treatment for hæmorrhoids when Pilcher's paper appeared in the Annals of Surgery. I have merely brought this matter forward with a view to demonstrating how it can simplify procedure in certain operations that, judging by the way in which the surgeon storms and fumes at the nurses and assistants, seem to present great difficulty under the usual and better recognized methods.
CLINICAL ASPECTS OF THE REGENERATION OF BONE, AS MANIFESTED BY A STUDY OF THE UNION OF FRACTURES

By E. Stanley Ryerson, M.D., C.M.

Toronto

SINCE the publication of Sir Wm. McKeown's monograph on the "Growth of Bone," efforts have been made along various lines either to corroborate or disprove his theories. It occurred to me that some information might be gathered from a study of the x-ray plates of fractures in which union is taking place. As most x-ray plates of fractures are taken within a day or so of the occurrence of the fracture and are usually for the purpose of diagnosis, the number that were available for my study were comparatively few. In looking over the plates of the Toronto General and St. Michael's Hospitals, I was only able to find a small number that illustrated the changes in relation to the periosteum for which I was searching. The question that was uppermost in my mind when carrying out this examination was as to whether the new bone seemed to be developing from the periosteum or whether it came from some other source.

My conception of the tissue changes that occur in the union of a fracture has been along the following line. The end of the bones are first surrounded by blood clot; in this connective tissue forms which becomes transformed into osseoid tissue or callus, either directly or after passing through an intermediate stage of cartilage. After the deposition of some calcium salts from the blood the osteoblasts, which come from the medullary canal, the bone itself and, it was always thought, the periosteum bring about the change into bone. During the earlier stages of these changes while the connective tissue is forming, the x-rays will show practically no changes beyond perhaps some rarefaction and rounding off of the ends of the bones; but as soon as the actual bone formation begins, then a shadow will be thrown on the plate. In studying the x-ray plates of fractures, the line of the periosteum is usually

Read at the annual meeting of the Canadian Medical Association, London, Ont., June, 1913.
only seen if it is stripped up from the bone, when it appears as a thin linear shadow running up or down from the line of fracture for a greater or lesser distance. The acute angle at the point where the periosteum joins the bone is called the osteo-periosteal angle.

If the periosteum were osteo-genetic, then in the healing of a fracture this osteo-periosteal angle should be one of the first positions in which the x-rays would show new bone formation. That this is the case is demonstrated by two cases in which the fracture occurred in infancy. In both of these cases which were in the Hospital for Sick Children, the x-rays showed a shadow quarter inch wide beneath the stripped up periosteum of the femur and extending well into the osteo-periosteal angle, which is explained by the fact that at this age a rapid growth of bone occurs from the large number of osteoblasts which can be demonstrated histologically beneath the periosteum.

In the plates which I have examined I have found that the first parts of the area in relation to the fracture to show evidence of new bone formation are the medullary cavity and the surface of the bones in relation to the line of fracture. The ensheathing callus begins to show close to the bone, and gradually extends out until it reaches the periosteum. If the periosteum is intact, the outer limit of the callus is definitely marked off by it from the muscular and subcutaneous tissues, whereas if the periosteum is torn, the callus extends irregularly out into the soft tissues. The most important point, however, is to my mind the fact that the last part of the space about the fractured ends of the bones which becomes obscured by the shadow indicating new bone formation is the osteo-periosteal angle. In some cases this part of the space has remained clear for weeks or even months after the occurrence of the fracture.

The argument is this. If the periosteum were osteo-genetic, then new bone would be produced beneath it over the area where it is stripped up from the bone and the osteo-periosteal angle would be one of the first parts to be filled up. That this is not the case is manifested by the plates which show that the osteo-periosteal angle is actually the last part of the space to be filled with a shadow, indicating new bone formation. From this, therefore, the natural inference is that the periosteum is not osteo-genetic in character. The plates of the two infants where the osteo-periosteal angle and the area beneath the periosteum showed new bone so early are the exceptions which serve to prove the rule, because in infants numerous osteoblasts can be demonstrated histologically beneath the periosteum.
AN EPIDEMIC OF JAUNDICE

BY MALCOLM MACKAY, B.A., M.D., C.M.
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SINCE Hanning analysed eighty-six epidemics of jaundice in 1890, a great many similar occurrences have been reported in medical literature. The severity of the cases has varied much from the severe forms with jaundice, nephritis, hepatitis, severe prostration, and even death, to the mild catarrhal form with but little fever and slight general disturbance.

One of the most interesting series published is that reported by Barker and Sladen in 1909. Although in this epidemic there were but six cases, an opportunity was given to make a complete bacteriological study of each patient in reference to the blood, urine and stools; as well as animal inoculations from the blood, and examination of the blood serum for specific agglutinins. In addition, from the circumstances of the case definite statements could be made in regard to the possibility of contagion and common sources of infection. The conclusions drawn from this series are well sustained and seem to indicate: (a) the infectious character of the disease; (b) the evident presence of gastro-enteritis; (c) the obstructive type of jaundice characteristic of catarrhal jaundice with gastro-enteritis; (d) the source of infection was meat or water with the probability in favour of meat; (e) the only positive serum result suggested the bacillus paratyphosus as the invading organism.

Hecker and Otto conclude from their cases that it is a non-contagious infectious disease. Leslie with an experience of one hundred and thirty-five cases thinks the disease may be transferred by exhalations and excretions of jaundiced patients. Pinninger in reporting eight cases considers it an infection such as occurs in an epidemic of low virulence, and seems to exclude food or exposure. Hallowes reports twelve cases with several occurring in the same house, but he does not say that he considers it to be contagious.

During the months of March and April, 1911, I had seventeen
cases of acute jaundice under my care. Of these five were males and twelve females, thirteen of the number being between the ages of fifteen and twenty-five years. No two of them were seen in the same house. The symptoms varied in details, but all were seized with nausea and vomiting, accompanied by lassitude, headache, and anorexia, griping abdominal pains, and pain in the back and legs. The temperature varied from 101° to 104° and the jaundice began on the third or fourth day, followed by acholic stools. The liver was usually a little enlarged and somewhat tender, but no enlargement of the spleen was detected. Bile was invariably present in the urine and albumin and casts were found in two instances. There seemed to be no tendency to hæmorrhages but in two cases the itching of the skin was intolerable. The temperature usually became normal in a week but in the more severe cases it lasted a fortnight. The jaundice disappeared after the patient was up and around for some time, and in four cases did not clear up for five or six weeks. The patients all lost weight. My first patient was the only one who acknowledged any indiscretion in diet, and he attributed his illness to eating a quantity of ham of inferior quality.

I heard of so many other cases occurring at the same time, that I sent a series of questions to all the doctors in the city, receiving nine replies containing details of eighty-two more cases. As the population of Sherbrooke is about 17,000 and Leslie3 allows five cases of jaundice of every sort per annum to every 2,000 inhabitants, we should expect some forty-three cases during the year, whereas we have ninety-nine cases reported in about two months. There must have been some common cause for this epidemic.

Including my own cases I found on analysis that there were thirty-four males and sixty-five females—proof that it was not acquired in the ordinary round of a workman’s life rather than at home. Of children under fifteen years there were forty-five cases, and only thirteen cases in adults over twenty-five years, the remaining forty-one being between the ages of fifteen and twenty-five years. The disease then was more apt to attack the young.

In twelve cases a definite history of indiscretion in diet could be obtained, but without any common cause.

In practically all cases the onset was rather sudden with lassitude, headache, and anorexia, the jaundice appearing in from two to five days. In thirty-two cases the temperature was rather high (102-104°) at the onset, and in but ten cases was it normal. Nausea
and vomiting was invariably present, and accompanied in fifty-one cases by griping pains. Diarrhoea was present in less than half the cases, but headache and dizziness in all. Urticaria was found in fifteen cases and herpes in two. Loss of weight was quite general, and the liver was large and tender in more than 60 per cent. of the patients. The spleen was recorded as palpable in only a few. Albumin was present in seventeen cases and casts in four. No blood was found in the urine, but bile always. The temperature kept above normal in febrile cases from three days to three weeks, the usual time being five days. Convalescence was always established before the jaundice vanished, this latter occurring in mild cases in one to three weeks and in the more severe cases from three to six weeks.

More than one case in a house was reported six times by one physician, three times by another, and once by another, while a fourth had five cases in a small orphanage. These physicians believe the malady was contagious and one of them was able to trace contact in seven of his thirteen cases. About 50 per cent. of my own cases were known to have been associated with others similarly affected, either in the office, school or home. The other men were not able to see any element of contagion in the epidemic.

Climatic changes were blamed for the condition, as the streets were alternately slush and ice at this time of the year, and the air full of moisture, coughs and colds being very prevalent. Influenza taking the form of gastro-enteritis was also considered as being the aetiological factor.

One striking fact was noted, namely, that only one reported case occurred on the east side of the River St. Francis, where the population is 3,900, the greater majority of the cases being found in the north ward (population approximately 3,500). The water supply is the same for both sides of the river, and climatic conditions are naturally identical. Milk and meat infection on investigation could not be traced.

No cultures or inoculations were made in the series, but the comparatively limited area covered by the epidemic in the short time during which it was prevalent would suggest its spread by personal contact.

The following fairly obvious conclusions may be drawn from this series:
(a) The disease is infectious.
(b) Gastro-enteritis is present.
(c) The jaundice is of the obstructive type characteristic of catarrhal jaundice.
(d) The disease is possibly contagious.

References:

The new health by-law makes it compulsory that all cream and milk sold, or used for butter making, in Calgary shall come from cows which have been submitted to the tuberculin test. This rule, however, does not apply to other places in the province and therefore an amendment has been prepared which makes it no longer necessary that cream used only for the purpose of butter making shall be subject to the above prohibition. It is intended that this amendment shall remain in force until the tuberculin test is made compulsory throughout the province.
Case Reports
CONGENITAL CARDIAC DISEASE
By D. Grant Campbell, M.D.
and W. G. Hepburn, M.D.
First Assistant Pathological Laboratory, Montreal General Hospital

The case is one of pulmonary hypoplasia, stenosis of the conus of the right ventricle with supplementary cusps, defect of the interventricular septum at the base with Rechtslage of the aorta, and patent foramen ovale. It appears to be of sufficient interest both clinically and pathologically to warrant our bringing it to your attention.

The patient, E. H., aged sixteen years, was first seen on January 17th, 1913, when he was suffering from a typical attack of influenza; on that occasion the following history was obtained. He was born in Worcester, England, January, 1897, being a premature, eight months' child. The labour was normal, except that it was a breech presentation. When two months pregnant, the mother had a threatened abortion and had lost considerable blood. The day following his birth, he was noticed to be blue and has always since remained bluish, and has been subject from birth to dyspnœic attacks and a spasmodic cough with glary tenacious sputum, often slightly blood-tinged. At ten months of age, he had a severe attack of measles, the rash of which was purplish in hue, and at three years of age is said to have had a fall resulting in complete paralysis of the lower limbs for about one week. At the age of seven, he had pertussis, and at nine was in the contagious hospital with diphtheria followed by scarlet fever during his convalescence. Two years ago, he had a very severe attack of pneumonia accompanied by marked abdominal pain. He came to Canada one and one half years ago, and since that time his general health has been better. He has all his life been subject to bronchitis following the least exposure, while the dyspnœa has always been so great on exertion, that to walk three or four hundred yards was sufficient to exhaust him completely.
The family history has one interesting feature: He is the eldest of five children, the next three—a boy of fifteen, a boy of thirteen, and a girl of nine are healthy—but the youngest died eight hours after birth having been remarkably cyanosed during her few hours of life. The father has always been healthy and the mother fairly so, though she had an oophorectomy done in the General Hospital last summer. There is a history of cancer and tuberculosis in the mother's family.

The present condition of the patient at that examination showed an undersized, poorly nourished boy with very marked cyanosis—quite a deep purplish colour of the lips, ears, and fingers, while the skin of the whole body showed a bluish tendency. The hands were quite cold and clammy with long tapering fingers and very marked clubbing of the ends. The right thumb was deformed, the distal phalanx being absent. There was no pulse to be felt in the right wrist and no right radial artery was discoverable. There was no glandular enlargement. The chest was much deformed, being of the pigeon-breasted type, and asymmetrical due to a left lateral scoliosis of the spine. This deformity of the spine had only been noticed in the last few years. The lungs at this examination showed numerous fine crepitations scattered throughout their whole area. The examination of the heart showed a well defined apex beat just outside the nipple line. No thrill could be felt. The measurements of the cardiac dullness showed slight enlargement, upwards into the second interspace on the left side of the sternum 1.5 cm. to the right and 9 cm. to the left of the mid-sternal line. On auscultation there was a loud purring systolic murmur heard over the whole praecordium, but of maximum intensity just to the left of the sternum in the third interspace. The murmur seemed to be transmitted about equally in all directions and was so loud as to make any other sound indistinct. Unfortunately no blood count was made. The tongue was clean, but quite cyanosed: the abdomen was negative. The boy's intelligence was above the average, as exhibited in his samples of wood carving and pyrography.

On February 9th he was seen again on account of an acute attack of bronchitis due to exposure during a short sleigh ride. The patient was fairly sick and deeply cyanosed. Later in the day he began to cough up glary, blood-tinged sputum, and at six the next morning he complained of a sudden sharp pain in his right side, he felt "as if something had broken," and died in less than an hour.
The autopsy showed passive congestion of all the organs, oedema and congestion of the lungs, chronic pleuritis and acute bronchitis. The heart was of peculiar shape externally, having a rounded apex, formed equally by both ventricles, and a broad base with a deep auriculo-ventricular groove behind which the auricles lay well backward. The right auricle was hypertrophied and much dilated. The auricular septum presented a large, crescentic, patent foramen ovale. The right ventricle was greatly hypertrophied, 1·7 cm. thick and 3 cm. thicker than the left. The tricuspid valve was abnormal, its infundibular cusp being wanting. A large defect admitting the finger 1·8 cm. occupied the base of the interventricular septum, lying just below the left posterior aortic cusp. The aorta, a thick-walled vessel 5·3 cm. in circumference, arose above this defect, two-thirds from the right ventricle and one-third from the left, and received blood from both chambers through the defect.

The conus of the right ventricle was reduced to a small triangular cavity lined by tendinous endocardium which was divided off from the main body of the ventricle by a much constricted portion, which presented two distinct semi-lunar cusps; one of these, placed on the muscular wall of the septum, was well developed being 1·7 cm. long, and had a deep sinus of valsalva behind it; the other, placed on the opposite wall, appeared more like a pocket of endocardium. The base of the pulmonary valve lay 1·8 cm. above the upper margin of these cusps. The pulmonary orifice was 2 cm. in diameter and was closed up by two thin and apparently competent cusps; these, however, were asymmetrical, one being longer and shallower than the other. They were also badly differentiated at its base from the ventricular wall.

An interesting point in view of the analogy to the heart of the shark (see below), is that the muscular wall of the conus is prolonged into the root of the pulmonary artery as far as the free edge of this bicuspid valve. The pulmonary artery is small and thin-walled. It expands above the level of the valve to a circumference of 2·4 cm.

The left auricle is remarkably hypertrophied, its muscular wall about 2 cm. above the base of the mitral valve measuring 5 cm. in thickness. The left ventricle is thick-walled. The mitral valve is anomalous, its left posterior segment being represented by a valvular fringe with many chordæ tendineæ. Its right posterior segment, however, which is strong and large, screens the defect.
Clinically the interest of the case centres round the following features:

1. The marked resistance shown to infectious diseases. This is a characteristic feature of pulmonary stenosis cases. While there is an equal liability of infection, there seems to be an increased rather than a decreased resistance to all infections except pulmonary tuberculosis.

2. The relatively long duration of life. Of the similar cases reported only five outlived fourteen years, of which the oldest died at twenty. On the other hand when the interventricular septum is closed the duration of life is relatively longer than in this group.

3. The associated defects of the osseous system. In regard to this point there is room for doubt regarding the scoliosis having been congenital, but the defect of the right thumb at all events was there at birth.

4. The close correspondence of the symptoms and physical findings with the symptom complex in the few cases with similar lesions already reported. In Dr. Abbott's\(^1\) statistics of four hundred cases of congenital cardiac disease there are twenty-two having the same major defects of which four showed exactly similar lesions in detail; twelve were male, nine female; the oldest twenty, the youngest eleven months; five gave a history of recovery from infectious diseases; thirteen showed evidence of marked cyanosis, and six of marked clubbing of the fingers; fifteen gave no cardiac thrill while seven did, and four showed anomalies of the vessels.

Remarks. The interest of the anatomical findings in this case may be said to be two-fold. Firstly, the type of pulmonary stenosis presented is that in which the conus is a separate chamber cut off from the body of the right ventricle by a constricted portion provided with two distinct cusps. The appearance of these cusps is apparently unique in the literature, and it is of the greatest interest from the developmental standpoint, for while there is no stage in the development of the heart at which cusps are present at this point, the condition presents a remarkable analogy to the two chambered heart of the shark. In this animal the bulbus cordis of the common arterial trunk is a muscular chamber provided with three sets of valves, the uppermost of which remains as the permanent semilunar valves while the lowest marks the boundary between the bulbus and the chamber of the ventricle. The cusps, situated at this point in the present case, can be explained only on phylogenetic lines as an instance of a peculiar atavism,
which gives force to the argument of Greil\textsuperscript{2} and Keith\textsuperscript{3} that the bulbus cordis in the embryonic human heart becomes submerged in the conus arteriosus of the ventricle, and that this submergence constitutes a critical stage in the development of the heart, whereby through some interruption in growth various types of conus stenosis may result.

The other point of interest is the combination of the three conditions; congenital pulmonary stenosis, defect of the inter-ventricular septum and Rechtslage, or deviation to the right of the aorta, so that it comes to arise as it does in this case more or less from the right ventricle. This constitutes the commonest combination of all cardiac anomalies and is the condition usually present in cases recognized clinically as "la maladie bleue," and is explained by the simple facts of development as described by Born, His and others. It will be remembered that in the early stage in which the heart is a two chambered organ, the common ventricle lies below and in front and gives off the common arterial trunk from its right upper angle, while it receives the blood from the common auricle through the common auriculo-ventricular orifice which lies on its left and posteriorly. With the development of the cardiac and aortic septa a shunting of the parts towards the median line takes place; the common arterial trunk comes to lie more to the left and the common ventricular orifice more towards the right, the two structures approaching each other, so that by the growth downwards of the aortic septum and the growth upwards of the interventricular septum, and finally the union of these two, the aortic and mitral orifices come to be placed in the left ventricle and the pulmonary and tricuspid orifices in the right ventricle. A defect of the interventricular septum may be due to a primary arrest of growth of the parts, but much more frequently it is due either (a) to a failure of this shunting of the parts towards the median line, so that the common arterial trunk does not come to lie over the common auriculo-ventricular orifice and the aortic cannot unite with the interventricular septum (Rechtslage of the aorta and the septal defect) or (b) to a malposition of the aortic septum within the trunk, so that a smaller pulmonary artery gives off a large aorta (developmental pulmonary stenosis with septal defect). Under either of these conditions, Rechtslage of the aorta on the one hand or pulmonary stenosis on the other will necessarily result, and will form an essential part of the defect. The two conditions, namely, a failure of the shunting of the parts toward the median line and a malposition of the aortic septum, may
readily occur together and will lead to the combination seen in the present case, Rechtslage, or deviation to the right of the aorta, developmental pulmonary stenosis, and septal defect.

The writers' thanks are due to Dr. Maude E. Abbot and Dr. A. M. Burgess of McGill University for their very kind and able assistance.

References:


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A hospital has been built at Ashcroft, B.C. The necessity for one has been felt keenly for the past year, for not only is the population of Ashcroft increasing rapidly but there are many construction camps in the neighbourhood and it was important that some provision should be made in case of accidents. The hospital was opened on August 16th, by Hon. Dr. Young. It has accommodation for nearly fifty patients.

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The next Annual Meeting of the Canadian Medical Association will be held at St. John, N.B., July 7th, 8th, 9th and 10th, 1914.
THE SEVENTEENTH INTERNATIONAL MEDICAL CONGRESS

The press, both lay and medical, has paid so much attention to the International Medical Congress in London, that while so important an event might well demand a notice in this *Journal* extending over several pages, we may, without serious loss to our readers, be brief in our review of the event. But attempting to be brief, it is difficult to know from what aspects the Congress may best be treated. "Was it a success?" is the stock question addressed to those who were participants. Compared with the last meeting, thirty-one years ago, when Pasteur, Lister, Koch, and Huxley made notable pronouncements, it might well be held that this meeting did not compare with its predecessor; the day of the giants might well seem to be passing. We may be wrong: we may from our very nearness be incapable of appraising our leaders of to-day, but certainly it seems as though of those who took a leading part in the Congress, one alone—Ehrlich—belongs to the same class as Pasteur, Lister, and Koch. But saying this we must realize the extraordinary changes which have occurred in the one generation. Thirty years ago he who thought he had made a notable discovery might safely wait to announce his gospel before the most important Congress of the year: to-day such is the scientific activity all over the world, that to obtain priority it is necessary to cable news of a discovery to the various capitals even before time has been given for confirmation of results by control tests. Inevitably, therefore, an International Medical Congress of to-day offers to the profession little that is
not already known, and the individual has not nearly the same chance of appearing in the lime light.

And so the main functions of the medical congress have become reduced to two, namely, and first, to employ the interest excited in the popular mind by the meeting together of a vast number of physicians from all parts of the globe, to bring authoritatively to the public notice the more recent advances in medicine; and in the second place, to afford a meeting ground for the leaders and representatives of our profession from all parts of the globe, that they may come to know each other and interchange views, not so much at the actual meetings of the Congress, but between times, in social intercourse.

Now the International Medical Congress fulfilled both these functions admirably. More particularly interest in medical matters has increased extraordinarily within the last few years, and the amount of space given to the proceedings of the Congress by the leading journals of various countries has been very remarkable; indeed, it may be said that already as a result of the prominence given to one matter in one section of the Congress, the British Government has declared itself prepared to establish a Royal Commission upon the subject of venereal diseases. Most suggestively two great daily papers, the Times, and the Morning Post, which in matters of form and worship of Mrs. Grundy stand pre-eminent, have at length during the course of the Congress printed the word "syphilis" in their columns in place of various absurd periphrases. We shall not be surprised if in the years to come the London meeting will stand out more especially as initiating a universal campaign for the suppression of venereal diseases.

And as regards the second function, namely, the meeting together of medical men, without doubt the Congress will for long years hold the record. More than eight thousand members were enrolled and took part in the twenty-three sections. We may safely say that no city in the world could
have accommodated so large a number, and that, without any apparent disturbance to the ordinary life of the city. The Congress was simply engulfed in the great metropolis. What, again, must have impressed every stranger, was the perfect organization. Without officialdom, and without red tape, everything appeared to be prepared on a proper scale, and those who had experience of recent International Congresses at Lisbon, Rome, and elsewhere, could not but be impressed by the marvellous difference; could not but realize that the success of the British in the world must depend upon this practical power of organization. The success of the meeting did not depend upon Government support—such support amounted merely to a dinner for five hundred guests at the Hotel Cecil. It did not depend upon any expert office staff: Dr. Herringham, the general secretary, with no previous experience of arrangements on so huge a scale, had to arrange everything, and for his labours deserves at least a baronetcy. But great as was his work the success did not depend merely upon him. Everyone from Sir Thomas Barlow, the president and the presidents of the different sections down to the secretaries, and, indeed, their wives, appeared to work away quietly and cordially to ensure success. The hospitality to strangers was on a most lavish scale: dinners given by individuals to one hundred and two hundred guests occurred each night, not to mention innumerable smaller parties, and it was this private hospitality that gave the opportunity for social intercourse. As Canadians we may well feel proud of our great representative in London, Lord Strathcona. One of the most delightful affairs of the whole Congress was the reception given by him to the whole Congress in the Royal Botanic Gardens which were converted into a veritable fairyland for the occasion. The Congress was a memorable success.
FIRST SIGNS OF INSANITY

It is a strange anomaly that physicians who have specially
to do with the care and treatment of the insane are the
very last who have an opportunity of observing the first
signs of insanity. Indeed, the family physician is himself
a late comer upon the scene. The first witnesses to a patient’s
aberration are his family, his friends, and the lay members
of the community in which he lives, but it is rare for them to
suspect the true cause of the symptoms which they observe.
Dr. Bernard Hollander has written a book* in which he
demonstrates how fine is the distinction between the normal
and abnormal mind, between rational and irrational thought,
between wholesome and perverted feelings, between responsi-
ble and irresponsible conduct.

In the majority of cases patients come under treatment
for insanity at a time when the possibility of a cure has passed
away, and the law makes things worse by insisting that a
hard and fast material line exists between the sane and the in-
sane; and that all persons who can be certified as insane
shall be deprived of their liberty and immured in an asylum
of one kind or another. This system is an inheritance of
folly from the days when ignorant and sentimental persons
gained control of the public ear with the cry that persons
were habitually held under control for reasons unconnected
with their state of mind. Rich people can evade the law
by procuring treatment in the secrecy of their homes: the
poor are practically helpless until their mental condition is
disclosed by some gross disorder of conduct. Insanity is bad
enough in itself: the public and official stigma of lunatic
makes it still more dreadul.

Dr. Hollander’s book is not one which is designed for
the profession alone. It is written in so engaging a style,
and in so reasonable a spirit, that it will gain entrance within

a far wider circle. It will make the profession and the public more alert, and it is quite conceivable that an individual in whose family there is a neurotic taint should become intelligently watchful for those earliest signs of the approaching malady. Each man is the most familiar with his own mind, the secret springs of his conduct, and the normal course of his life. It is for him to set a watch upon himself, to check an abnormal reaction to any given stimulus, or, if that is impossible, to avoid the irritation which leads to disordered conduct.

There are many persons who, in the long course of an even life in the country, conform absolutely with a normal mental standard. When they return to town and are at the mercy of every one who can gain access to a telephone within a radius of four hundred miles, when their eyes and brains are blinded by the electric glare and are denied the calm of the huge and thoughtful night, when they are obliged to attend entertainments which they do not desire and give entertainments which they cannot afford, and are in continual peril of their lives from the abyss in the street and the general disorder of a growing city, their self control breaks down. Such persons should immediately flee to some place of refuge.

There is yet an earlier sign of insanity than any Dr. Hollander has mentioned. It reveals itself in the letters which a man writes. When a man who has always written urbanely and temperately writes a letter which appears to be foolish, vulgar, or impudent, the recipient may well suspect that he has before him evidence of aberration of mind which may be temporary but may be the forerunner of worse symptoms which are to follow.

The London County Council has decided to close its Reformatory for Inebriate Women at Farmfield, because in the opinion of an investigation committee the results did not justify the expenditure. Of the six hundred cases which have
been detained at Farmfield, less than one fifth have done well, and about one half have relapsed; 15 per cent. of the cases could not be traced.

Physicians, as a class, are not long-lived, but a notable exception is reported from a town in Illinois, where Dr. W. T. Linn died recently at the age of one hundred and eight. He is said to have practised medicine for more than seventy-five years.

La Société des Médecins Chefs des laboratoires de Radiologie et d'Electro-radiothérapie des Hôpitaux de Paris announces the inauguration of a course in medical electricity, radiology and radium therapy, to be given in the Paris hospitals from November 3rd to December 2nd. The course, which is free to physicians, will be repeated twice yearly in May and November. Information may obtained from Dr. Delherm, Hôpital de la Pitié, Paris.

We are accustomed to read of the criticism of governing boards of public hospitals, but the following which is taken from an account of a meeting of such a board in a western city is, we hope, unusual. "The only other matter of importance which came up was a letter from the Trades and Labour Council, protesting against the action of the hospital board in having a Chinese cook on the hospital staff." The italics are ours.

The Board of Health of Ontario is making good use of the powers invested in it by a recent Act. Recently a municipality was instructed to undertake a work in the interest of public health, and to remedy a situation which amounted in fact to a nuisance. It was loath to spend money on such an object. The Board of Health thereupon had the work
done, and sent the bill to the municipality which will have to pay the cost. Similarly, many hotels in outlying districts have been compelled, much against the will of the proprietors, to improve their sanitation.

The Government of Queensland has issued a proclamation pursuant to the provisions of the Health Act, declaring that in Brisbane and its immediate neighbourhood venereal diseases shall be compulsorily notifiable under the Act. The regulations provide that if the commissioner or any medical practitioner suspects that a person is affected with venereal disease, the commissioner may in writing require such person to submit herself or himself for examination by clinical and bacteriological methods. Any breach of the regulations is punishable by a penalty not exceeding £20.

Beginning this fall Harvard University and the Massachusetts Institute of Technology are to maintain in cooperation a school for public health officers. The facilities of both institutions are to be available to students in the school and the Certificate of Public Health (C. P. H.) is to be signed by both President Lowell and President Maclaurin. The object of this school is to prepare young men for public health work, to fit them to occupy administrative and executive positions such as health officers or members of boards of health, as well as secretaries, agents, and inspectors of health organizations.

Owing to the untimely death of Dr. Nathaniel Alcock, professor of physiology at McGill, and to the moderate remuneration that generally falls to the lot of the scientific worker, his family has been left wholly unprovided for. His widow has to face the upbringing and education of four young children, the eldest seven, and the youngest two years of age.
It is thought that the most appropriate form a memorial could take would be that of a fund to enable his three daughters and one son to receive an adequate education. Professor Alcock's colleagues in England have sent out an appeal to his friends asking them to contribute to a fund for this purpose. The appeal is signed by Sir J. Rose Bradford, Professors Starling, Waller, and Bayliss, Dr. Willcox, of St. Mary's, Dr. Ellison, and Principal Peterson. Dr. J. G. Adami will gladly receive and acknowledge any contributions to this fund, forwarded to him at the McGill Medical College, by Professor Alcock's friends in Canada.

The first examinations of the Medical Council of Canada under the provisions of the "Roddick" Bill will begin on Tuesday, October 7th. There will be fourteen English and fourteen French examiners. The number of subjects is seven, namely: anatomy, physiology, surgery, medicine, midwifery and gynaecology, hygiene and state medicine, pathology and bacteriology. All the written and oral examinations will be held in the new McGill medical building and the clinics in the four great hospitals. The number of candidates qualified to enter is seventy-six, hailing from every province in the Dominion, besides a few Canadian graduates residing in the United States. According to the regulations, "there shall be two examiners in each subject, who shall conjointly set and examine each paper and conjointly examine the candidates in the oral and clinical examinations. The percentage in each examination in each subject shall range from 0 to 100, sixty per cent. of the total marks in each subject constituting pass marks." It is expected that the examinations will extend over ten days at least. Dr. Powell, with his deputy registrars, English and French, will be in full charge throughout.
Book Reviews


The generation of electric currents at each contraction of the heart muscle was demonstrated by Köllicker and Müller nearly sixty years ago, and modern methods in recording and interpreting those currents is the outcome. This monograph of Dr. Lewis is the last word in scientific precision of diagnosis. He does not pretend that a good working knowledge of the heart can be obtained in no other way; but he puts forward the claim that no hospital can afford to neglect the use of the galvanometer if it aims to rank amongst institutions whose design is efficiency.


Blood pressure well deserves a book to itself, since an instrument for measuring blood pressure has come to be as necessary as a stethoscope in many cases. In examinations for life insurance its employment is a matter of routine, and insurance companies are the last to be carried away by new inventions. Dr. Nicholson's book contains a complete justification for the employment of this method of precision.


Professor Ballet is perhaps the leading authority in France upon the subject of which he writes. He is a member of the faculty of medicine, physician to the Hôtel Dieu, and was president of the Société de Neurologie. His book is well known. Three editions in French have been published, and this translation by Dr. Campbell Smith is from the third edition. The original title was "L'Hygiène du Neurasthénique," but in course of time the additions to the work became so considerable that a more generous term was demanded, although it has become a convenient name to cover much
erroneous, or incomplete, diagnosis. The thesis of the book is that a good moral and physical hygiene, a well conceived dietary, and suggestion do more for the neurasthenic patient than "a confused multitude of discordant drugs." The book is so beautifully written—as most books in French are—and so well translated that the reading of it is an intellectual treat apart from the knowledge it conveys.


This systematic study of tuberculosis is translated from the second German edition of "Die Klinik der Tuberkulose" which succeeded the first edition after little more than a year. It gives a complete clinical description of every form of tubercular disease; it considers tuberculosis as a pathological entity, and obliterates the distinctions formerly drawn between the medical and surgical forms of the disease. In the process of translation certain omissions have been made, especially of sections dealing with German sanatoriums, and legal regulations in connexion with public health in Germany, which are of secondary importance in English speaking countries. The book has had a large vogue in the medical world, and has attained the distinction of having been translated into Spanish. This is not Dr. Hunt's first essay in translating, and he has performed his difficult task with much distinction. At a time like the present when the subject of tuberculosis is exciting so much interest, this book, coming from such high an authority, will be eagerly welcomed.


This book contains a fresh study of diseases of the ear by an author who has newly come into the literary field. It is an attempt, and a successful one, to present this difficult subject in the light of the more recent advance in knowledge. And that advance has been considerable in the last six years in the laboratory, and in the consulting room. During that period the subject of syphilis has
awakened a new interest, and it has been subjected in all its phases to such a scrutiny as it has never hitherto received. The static labyrinth has come in for a fresh inquiry, and there are many investigations in progress upon the influence of autogenous vaccines, and leucocytic extracts upon certain phases of auricular disease. In times gone by the auricular surgeon confined himself within the limits of the tympanum and mastoid process, but of late he has entered the more hazardous field of intracranial surgery, and the yet more delicate and difficult work upon the auditory labyrinth itself. Parts of the field which have hitherto received rather summary treatment come in for more detail in this book. The physiology of the labyrinth, the suppurative diseases, and the surgery of that organ, are considered in three chapters which occupy a considerable section of the book; and the suppurative lesions of the brain and meninges are given more consideration than is usually allotted to them. In the description of an operation each successive step is illustrated, and this does something to help practitioners who are denied the advantages of large surgical clinics. The illustrations are for the most part done from original drawings by Miss Fry. The general surgeon will find in it a wealth of information and a sure guide to the best practice.


This is the kind of book one likes to see. It is written by a professor in a Canadian school, intended in the first place for his students, and printed in his own town without pomp of text or binding. It is a workmanlike book, and contains quite sufficient directions for the purpose for which it is intended. There is no unnecessary material in it, and it has been tested and approved of by many generations of students, who, after all, are the best judges of their own needs.


The thesis which Dr. Lees seeks to establish is stated in his own words to be:
1. That the existence of an incipient pulmonary tuberculosis can be easily demonstrated by careful percussion (provided that during the examination of the front of the chest the patient is in the recumbent position with relaxed muscles) long before any bacteriological evidence is obtainable, and while the auscultatory evidence is still insufficient for a diagnosis.

2. That a negative bacteriological report is often fatally deceptive, and that to wait for the demonstration of bacilli in the sputum is like postponing the diagnosis of cancer until the glands are involved.

3. That in the earliest stage of a pulmonary tuberculosis it is always possible, and in a somewhat later stage usually possible, to obtain prompt and permanent arrest of the disease by the employment of the method of continuous antiseptic inhalation. The evidence on which this statement is based is given in the table of seventy cases, and the clinical facts are stated in the papers reprinted as appendices to the lecture.

HEADACHE. ITS VARIETIES, THEIR NATURE, RECOGNITION AND TREATMENT. A THEORETICAL AND PRACTICAL TREATISE FOR STUDENTS AND PRACTITIONERS. By Dr. Siegmund Auerbach, Chief of the Polyclinic for nervous diseases in Frankfort. Translated by Ernest Playfair, M.R.C.P. One of the Oxford Medical Manuals, 208 pages, 1913, price, $1.50. Toronto: D. T. McAinsh & Co.

This important little book will do much towards a clearer differential diagnosis of the various forms of headache. Until that is done an adequate treatment of this troublesome condition must be difficult, if not impossible. The author assembles much information and comments upon it with great wisdom.


It is only necessary to mention that a new edition of Dr. deSchweinitz's "Diseases of the Eye" has appeared. This is the seventh edition, and the changes are considerable. They deal with the important discoveries and observations which have been
made in the last three years, such as the use of vaccine therapy, of salvarsan, and the septic origin of iritis and uveitis. In addition there are paragraphs upon lesser matters, and the result is to keep the book, as it has always been, a standard for the student, the practitioner, and the specialist.


Everything a sanitary officer requires to know—and much more—is contained in this book. Although it is written by a lieutenant and a major in the Royal Army Medical Corps, its usefulness is not limited to military life. It is in reality a handbook, a thing of every day utility, and an admirable supplement to the more elaborate treatise upon the subject.

A Text-Book of Biology. For Students in Medical, Technical and General Courses. By William Martin Smallwood, Ph.D. (Harvard), Professor of Comparative Anatomy in the Liberal Arts College of Syracuse University, and in charge of Forest Zoology in the New York State College of Forestry at Syracuse. Octavo, 285 pages; illustrated with 243 engravings and 13 plates, in colours and monochrome. Cloth, $2.75, net. Lea & Febiger, publishers, Philadelphia and New York, 1913.

This is a new book, and we cannot introduce it better than by making a repetition of a part of the publishers’ announcement: "Biology is now recognized as one of the fundamental sciences in the study of medicine, and most of the medical colleges either require a knowledge of it for entrance, or include it as part of the preliminary instruction. This has given a new stimulus to the teaching of this subject, and has awakened a broader interest in it. The appearance of a new text-book, written in accordance with the most modern ideas, and designed to meet the needs of the medical student, is therefore timely. Professor Smallwood’s work is unique in the excellence of its instruction and the high standard of its numerous illustrations. The method of imparting the facts leads the reader to think for himself and cultivates his powers of obser-
vation. To the physician who graduated before biology was generally taught in the medical curriculum the book should be of especial interest and value.” Dr. Smallwood’s book is more than a companion for students; it enunciates many of the principles which underlie human society, and is in reality a philosophical treatise. Fact and inference are nicely joined and many an evening can be spent upon it, if only for the pleasure of reading a well-written book.


There are specialties within specialties, and it is now the custom for a specialist to give especial attention to some particular portion of the field which he has chosen for his own. In the general subject of diseases of children, there are no higher authorities than Doctors Garrod, Batten, and Thursfield, although each has cultivated with fine care some particular part of it. They have associated with them more than a score of other physicians, all but two of them being resident and practising in London. The joint result is this noble volume of near twelve hundred pages, beautifully illustrated and printed, and bound as only an English binder can. It is difficult to believe that a specialist in diseases of children should be willing to continue to practise his specialty without informing himself of the opinions which are expressed by these distinguished authorities.


This book is more than a translation of Dr. Wegele’s “Therapie der Magen und Darm Erkrankungen.” Extensive additions have been made; a chapter on the oesophagus is added, also a chapter upon x-ray diagnosis, upon the pancreas, and upon parasitic diseases, and diseases of the intestinal blood vessels. It is a thorough piece of work and embodies the best German and American practice. The tables are elaborate and the directions for treatment minute and full.

This book is one which might be called scientific, as the author has taken infinite pains with his work, and he must have found it a very disgusting business. He seems to have been especially fortunate in finding patients who were complacent enough to submit to his incessant examinations. The results he has obtained should do something towards preventing the practice of copying errors from one book to another. The causes of sterility would appear to be many and varied and the results of treatment not very promising.


The first part of this work is a guide to the proper use of the microscope for all students, and the second part deals exclusively with histology as it presents itself to students of medicine. It contains ninety-eight plates with two hundred and eight figures, all beautifully done. The publications of the Rebman Company excel in respect of illustration, and this one is no exception. A student who owned this handsome volume might well consider himself fortunate.


In the Journal for July at page 608 et seq. may be found a full description of this work which was described as "a new book done in a new way." The second, and final, volume has just appeared, and it bears out the large promise which was made in the first. It contains over eight hundred pages and both volumes together occupy seventeen hundred pages. We note with pleasure that the article upon the treatment of diseases of the cranial nerves
and organic lesions of the spinal cord is written by Colin R. Russel, neurologist to the Royal Victoria Hospital, Montreal.

*Ophthamoscopic Diagnosis Based on Typical Pictures of the Fundus of the Eye with Special Reference to the Needs of General Practitioners and Students.*

By Dr. C. Adam. Translated by M. L. Foster, M.D. Illustrated. New York: Rebman Company, 1913.

This book is dedicated to the memory of Julius v. Michel, as it puts into effect his plan of bringing into relief the relations that exist between diseases of the eye and those of the body as a whole. The real purpose of the book is that it should be a systematic guide to diagnosis, and the illustrations are intended to serve as aids towards that end. The various ophthalmoscopic pictures are used as a means of classification, and the systems observed are intended to bring out the diagnosis and to impress the clinical picture on the mind. This is in contradistinction with the usual text books which begin with clinical conceptions of disease, and then give a portrayal of their symptoms. In short, the book follows the practice of Elsching, who was the first, formally, to take the ophthalmoscopic symptom as a basis for classification. The pictures present the inverted image magnified about ten times. The plates are of extraordinary beauty, and the text is quite ample to complete a book of great utility for all members of the profession whether they be specialists or general practitioners.

*Genito-urinary Diagnosis and Therapy for Urologists and General Practitioners.*


This book sets forth in concise—even terse—terms the best practice in dealing with diseases of the genito-urinary system; but it will attract attention less on that account than by reason of the studies upon "complement fixation" which it contains. This is the first book we remember to have seen giving a full account of the technique employed for the differentiation of the gonococcus from other organisms belonging to allied strains. Every specialist in this department will like to have this clear consideration of the subject.

The discovery by Schaudinn of the spirochaete pallida, the employment of cytodiagnosis, the globulin examination of the spinal fluid, and the complement-fixation method, all of which have arisen in the past five years, have compelled a rewriting of all the text-books on syphilis. The prognosis has entirely changed, even in cases of tabes and paresis, and for all these reasons Dr. Ball's translation of Nonne's "Syphilis and the Nervous System," with his additions which it contains is timely and welcome. The deliverance of Dr. Nonne upon the use of salvarsan in tabes and paresis diseases of the nervous system is weighty: that salvarsan is of any more value in tabes than mercury has not been proven: the concensus at the present time is that salvarsan is no more of a cure for paresis than mercury and iodide. We predict for this book a large demand.


For two or three years the journals have had frequent reference by illustration and text to the diagnosis of pathological conditions in the stomach by means of the x-rays; but this is the first complete book we have seen, which deals with the subject to the exclusion of all others. It was presented originally as a thesis for the degree of doctor of medicine at Cambridge in April, 1912; and those who read it suggested that it be published, as it now is. We need only endorse the judgement of those distinguished readers, and commend the book to those who have to do with elucidating the nature of diseases of the stomach.


This is one of the amazingly good English books which the Macmillan Company of Canada is publishing in this country, and
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will even send to any practitioner free of charge on approval for fifteen days. The editors have been guided by a principle which may be briefly stated, and, indeed, is so stated in the preface. Physiology and pathology had a common starting-point in the doctrine of the cell, and then diverged, the one being occupied with certain junctions of cells, and the other with the observation of results. Within recent years the two have converged and there is at present a constant interaction of these two branches of science. The editors now propose to present the joint results which have been obtained; and physiologists, pathologists, and physicians contribute to the volume. They have performed their task most admirably and have written a book which may be read with interest and profit by every member of the profession.


This book is a translation of the second edition of “Traité de la Blenorrhagie” by Dr. Georges Luys, with some slight variations by the translator. Neither author nor translator underestimates the importance of this malady in its effect upon the individual and upon society. They properly insist that it falls within the category of infections with a local incidence but capable of extension to a general septicæmia and cardiac lesions which often are fatal. The introductory chapter gives an interesting account of the history of the disease, and it contains much curious information. The book contains twelve chapters, and no aspect of the case is neglected. It is the completest work upon the subject which is extant in any language.


The writer of this monograph utters a timely warning that the development of blood-vessel surgery should not be impeded by attempts on the part of unskilled operators to practise it, since brilliant laboratory results lure the inexperienced to try their luck, only to find that in surgery chance plays no part. His book is
directed to surgeons who are interested in vascular surgery and possess a fundamental knowledge of the subject. The technique is based upon a perfect asepsis. It was upon that Crile took his stand in 1905, and from it developed his simple method of end-to-end suture. In these few years surgeons have passed on from the treatment of aneurisms to the repair of injured vessels, the transplantation of segments, anastomosis, and the direct transfusion of blood. Of this progress Dr. Bernheim gives an admirably succinct record.


The tradition of the Edinburgh school is that the actual specimen shall be studied; it recognizes the distinction between the thing itself and the picture of it. This book is evidence that the authors have carried out that tradition faithfully; and it will be an encouragement to students to follow their example. It is quite possible, however, that the very excellence of the illustrations will be a temptation to the easier path, if the warning is not heeded, that the intention is to furnish a method of study rather than to give a complete account of the various conditions that constitute gynecological pathology.


It is not easy to classify this book. It is not intended to be a practical laboratory manual, but is rather a work written from the clinical point of view, in which the practitioner or senior student may obtain a survey of the applications of clinical research. Consequently, all detailed descriptions of technique are omitted except those which have to do with the obtaining of specimens. The book is the outgrowth of the author's lectures at the West London Postgraduate School and has some of the minor defects of the lecture method.

The author takes the view that the position of clinical patho-
logy needs to be more clearly defined, and deprecates the tendency to make of it a speciality no longer intimately associated with and subservient to clinical medicine. Under such circumstances, the clinical pathologists are apt to degenerate into "hewers of paraffin and drawers of blood." The ideal which he has in mind is the training of the scientific practitioner or "physician pathologist." Modern methods of diagnosis and treatment, and the principle underlying them, are clearly explained. There are excellent chapters on bacteriotherapy, on the new chemotherapy, and on the use of tuberculin. The illustrations are good and helpful. It is interesting to note that those showing presence of spirochaetes and other protozoan parasites in the blood are taken from cinematograph films.


This book is the outcome of the practice in Guy's Hospital. Indeed, one is informed in the preface that the bulk of the matter is an elaboration of the notice distributed to laboratory classes in in practical and applied bacteriology in that school; and the elements of the technique are presented in their logical sequence. Whilst it is quite true that technique can only be acquired by actual work and instruction in the laboratory, a collection of tried and approved methods is not only useful but necessary. The value of a book then depends upon the clearness and fullness with which these methods are set forth. In both of these respects, Dr. Eyre's work fulfils every requirement. The illustrations are worthy of special remark. All of them are clear and many of them are beautiful. As a laboratory guide nothing better could be desired.


The appearance of the fourth edition of so well known a book requires little more than mention of the fact that such an edition
has appeared, especially when the book itself has been spoken of on previous occasions, and always with commendation. The alterations are rather extensive. There is a new section on the mechanism of digestion. Fresh tables have been included. Other new subjects are duodenal alimentation, and the use of the soy bean. The subjects of salt metabolism diet in fevers, diabetes, and gout have received fresh consideration. Within the past few years many striking results have been obtained in the laboratory, and the application to clinical practice is fully studied in this book. The chapter on the acid-forming and the base-forming foods is especially important, as recent experiments seem to compel a revision of much that passed for knowledge. The obscure question of carbohydrate tolerance, especially in its relation to the pituitary body, has been much elucidated, and the results receive the prominence they deserve. There is much of historical interest in the book, and it is written with a wide comprehension of the whole subject.


The title of this book readily suggests its contents, and the author has shewn industry and skill in arranging his material. The whole field of medicine has been searched for illustration of the dependence of one pathological factor upon another, and the evil results which may follow unless that sequence is severed. The reasoning is acute and leads one to approach many problems by a new path. The book reinforces the Hippocratic maxim, that the whole body sympathizes with every member of the body, and every member with the whole.
Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


At the recent annual meeting of the Association a symposium on diseases of the thyroid was held by the combined Sections. The following is the contribution of Dr. Lewellys F. Barker, professor of medicine in the Johns Hopkins University, to the discussion on Graves' disease: Dr. Barker congratulated the Association upon the excellent presentation of the surgical side of the therapy of Graves' disease by Dr. Ochsner. He sympathized with Dr. Hoover's view that Graves' disease can no longer be regarded as a simple, true hyperthyroidism. On the contrary, the evidence is strongly in favour of the view that we have to deal in the disease with a perverted function of the thyroid gland—a so-called dysthyroidismus. The view that we deal with a dys-function rather than with a simple hyper-function has recently been supported by the experiments of Klose, in which the injection of the expressed juice of the gland from cases of Graves' disease gave rise, in especially susceptible animals (fox-terriers), to symptoms very different from those which follow upon injection of the expressed juice of the normal gland.

Our knowledge of the thyroid gland as a central station in iodine metabolism has, in the recent past, made considerable growth. It would seem that the thyroid besides performing a detoxicating function in removing unmasked iodine of food origin from the circulation, manufactures a peculiar iodine compound (normal thyroiodin) which, liberated in just sufficient quantities, promotes the welfare of the rest of the body; reaching the different organs by way of the blood, this substance is disintegrated in concentrated form in certain specific places which require an iodine influence. In Graves' disease, on the other hand, it would seem that a complex iodine compound differing from the normal one is formed, that this stands closer to inorganic iodine than does normal thyroiodin, and that when given off into the blood, iodine is set free from it in places, and in quantities, other than normal, causing the symptoms which we recognize as the thyro-intoxication of Graves' disease. This abnormally masked iodine body seems to be especially neurotropic, cardiotropic and ovarotropic in its affinities—hence the characteristic symptoms.
When patients are treated by the surgical methods which Dr. Ochsner has described, a large part of the gland producing the abnormal iodine body is removed, and apparently the normal portions of the gland left behind regenerate, so that normal thyro-iodin is again produced in larger amounts with reduction of the amount of the abnormal iodine compound formed.

Another feature of Graves' disease to which considerable attention is now being paid is its relation to enlargement of the thymus gland. It would appear that many of the patients who suffer from Graves' disease are "thymus carriers." Not that the enlargement of the thymus is the cause of the Graves' disease; on the contrary, opinion at the moment leans to the view that the dysthyroidism results in an intoxication of the genital glands (testes, ovaries), leading to a hypogenitalismus, that this in turn favours the development of a status thymico-lymphaticus, and that the dysthyismus which is a part of this leads in turn to intoxication of the body, one sign of which is the relative increase of the lymphocytes in the blood. It must be emphasized of course that ideas regarding iodine metabolism and dysthyismus in Basedow's disease are in a state of flux, and that further studies may soon extend or modify the conceptions that prevail at the moment. These conceptions, however, are interesting and stimulating to research.

As to the treatment of Graves' disease by medical or surgical measures, much depends upon the stage of the disease in which the patient is seen and the criteria upon which a diagnosis is made. Dr. Barker is of the opinion that medical men recognize and designate as Graves' disease much earlier stages of the affection than is customary among surgeons. To operate at once upon these early (and often latent) Basedowian states would be, in his opinion, bad practice, though when the symptoms of the disease are out-spoken (tachycardia, struma, tremor, exophthalmos, sweating, loss of weight, diarrhoea, etc.), and persist in spite of suitable dietetic-hygienic measures and medical treatment, he strongly favours surgical therapy.

In applying medical measures, Dr. Barker stated that the means used may be briefly summarized as follows: (1) rest; (2) a diet in which meat is somewhat restricted but which otherwise is abundant; (3) applications of small ice-bags to the gland and over the heart; (4) the administration of cacodylate of soda subcutaneously as a general tonic and to slow metabolism, especially in the cases losing weight; (5) the administration of sodium phos-
phate in small doses on rising in the morning and before the evening meal; (6) the regulation of the intestinal functions; and (7) a sojourn in the mountains (2,500 to 5,000 feet).

Another point upon which he was inclined to lay stress is this: just as in early arthritis, so in Graves’ disease, he had often found some focus of irritation or infection in some part of the body, and by treatment or removal of this focus he had seen marked improvement in the symptoms of Graves’ disease. Among the conditions sometimes associated were mentioned the following: (1) chronic tonsillitis; (2) chronic para-nasal sinusitis, nasal polyps, etc.; (3) pulmonary tuberculosis; (4) chronic appendicitis; (5) gall-stones; (6) uro-genital lesions; (7) pyorrhoea alveolaris, abscess at root of tooth, etc.

In the cases which do not respond well to medical treatment after a fair trial, or in individuals whose necessity for making a livelihood prevents them from satisfactorily resorting to medical measures, he advised surgical operation. Just as important as deciding when to operate, is the choice of the surgeon. He urged general practitioners and internists not to wait too long before turning the case over to the surgeon when the patient did not improve under medical treatment. It is a great mistake to allow the patient’s tissues to be intoxicated for years with the thyroid poisons before thyroidectomy, for then too often the organs have suffered so much from the chronic thyro-intoxication that they cannot recuperate after the operation.

He saw no reason for conflict between medical men and surgeons regarding the treatment of Graves’ disease. On the contrary, he thought there should be the heartiest cooperation of internists with surgeons in the study and treatment of these cases. On the diagnostic side, in the early therapy, and in the post-operative therapy, the internist can be of the greatest help to the surgeon, while the surgeon of skill and judgment, in turn, by suitable operation, can often secure results which are wholly inaccessible by merely medical means. He called attention to the desirability, at operations on the thyroid, of exploring the thymus at the same time. This can be easily done, without additional skin wound, by way of the jugular fossa. Especially in the cases of marked tachycardia and psychoneurotic disturbance with outspoken lymphocytosis and with only slight struma the thymus should be explored, and, if found large, removed. After removal of the thymus, the lymphocytosis is said to disappear, while if the thymus be not removed, the lymphocytosis remains despite a thyroidectomy.
Obituary

Dr. J. R. Patterson, of Port Elgin, died on July 29th, at the age of seventy-seven years. Dr. Patterson was a native of Scotland, and settled in Bruce County in the early sixties. He graduated at Queen's University and practised first at Tiverton. Dr. Patterson took keen interest in municipal affairs and also in politics. He retired from active practice some ten years ago.

Dr. Roderick McLennan died last July, at Quincy, Maine, in the fifty-fifth year of his age. The cause of death was heart disease. Dr. McLennan was born in Prince Edward Island and graduated from Trinity Medical College. For the past twenty-six years he had practised in Quincy. He leaves a widow and three daughters.

Dr. William John McKay, medical officer of health at Saskatoon, died suddenly in London, August 6th. Dr. McKay obtained a year's leave of absence and was studying at the University Hospital, London. The cause of death is stated to have been pleurisy. Dr. McKay was born in Huntingdon, Que., in 1874. His parents removed to Morden, Manitoba, and he was educated at the Manitoba College and obtained his medical degree from the Manitoba Medical College. He commenced his professional career at Winkler, Manitoba, in 1899, and in 1903 removed to Saskatoon, the next year receiving the appointment of medical officer of health. Dr. McKay was a recognized authority on public health and sanitation and a member of the provincial bureau of public health. He was also a member of the British Medical Association, the Canadian, Saskatchewan, and Saskatoon Medical Associations, the Royal Sanitary Institute, and the American Public Health Association. In short, he was man strong, capable, brilliant, an all-round athlete, whose place will be difficult to fill and whose death is much regretted. He leaves two children, a boy and a girl, each four years old. Mrs. McKay died three years ago.

Dr. Mulloy Preston, of Galt, Ontario, died August 28th. Dr. Preston was highly esteemed in Galt, where he had practised for forty years.
Dr. Hugh Matthewson Patton, of Montreal, died at Little Metis, September 5th. Dr. Patton was forty-eight years of age and was a graduate of McGill University. He was one of the founders of the Montreal Homeopathic Hospital. He leaves a widow, two daughters and a son.

Dr. Charles Young Moore, of Brampton, Ontario, died September 11th, after a long illness, at the age of sixty-six years. He was born at Derry West in 1847 and graduated from Toronto University in 1871, on which occasion he was awarded with the silver medal. For more than than forty-five years he had practised in Brampton where he was medical officer of health. Dr. Moore was a staunch Presbyterian and a Mason; he was keenly interested in educational matters. He leaves a widow and one son.

Dr. John Mulheron died at Detroit, August 1st. Dr. Mulheron was born in London, Ontario, in 1846; he was educated in Waterloo, Ontario, and later went to the University of Michigan, where he obtained his degree in medicine. In 1870 he began to practise in Detroit. He became president of the Detroit Gynaecological Society and was a member of the American Medical Association and of the Detroit Medical and Library Association.

Dr. James White, of Hamilton, Ontario, died August 17th, in the sixty-fourth year of his age, after a long, active life spent almost exclusively in his native city. He was educated at Bishops College, Lennoxville, Quebec, at Upper Canada College, and at the University of Toronto, where he obtained the degrees of M.A. and M.D. Some little time was spent in Edinburgh and in London doing postgraduate work, after which Dr. White returned to practise in Hamilton. In 1899 he was elected first president of the Hamilton Medical Association. He leaves a widow and three children.

Dr. Dougald Stewart, of Teeswater, Ontario, died August 22nd. Dr. Stewart, who was sixty-four years of age, was born near Guelph. He has practised at Teeswater for over thirty years and was much respected throughout the district.
News

MARITIME PROVINCES

An arrangement has been made whereby the Dominion Steel Corporation will build a hospital at Waterford, N.S. When completed, the hospital will be administered by a board of directors, half the members of which will be appointed by the Steel Company and half by the citizens of Waterford: an official referee will be appointed by the Steel Company in case of dispute.

The report of the Fredericton Hospital for August shows that forty-four patients were treated in the hospital during that month; no death occurred.

An effort is being made to establish a hospital at Newcastle, N.B. The sum of $25,000 has been offered to build and equip the hospital, if the city will undertake its future maintenance. An endowment of from $1,000 to $5,000 also has been promised. The matter is under consideration.

The following candidates have been successful in passing the final examinations of the Nova Scotia Provincial Medical Board: Malcolm Robertson Elliot, M.D., Harvard University, of Clarence, Annapolis County; Mary Jane McFall, M.D., Women's Medical College, Philadelphia, of Somerset, King's County; Daniel McNeil, M.D., C.M., Dalhousie University, of Glace Bay; and Frederick Daniel Parker, M.D., C.M., McGill University, of Wolfville.

ONTARIO

Twelve new private wards have recently been added to the Victoria Hospital at London.

The new wing which is being added to the Kingston General Hospital is nearly finished. It is hoped that it will be ready for occupation by the end of the year.

A hospital is to be built at Chapleau. The cost will be about $15,000.
The cases of communicable disease reported in the province during the month of August, numbered 700 only. Last year during the same month 20,005 cases were reported. The chief difference lies in the number of cases of typhoid, 259 this year and 1,022 last year. While the small number of cases reported points to an improvement in the general health, it suggests the possibility that the returns may not be quite complete.

At a meeting of the Smith Falls town council, which took place August 11th, $1,200 was granted to the public hospital and $800 to the St. Francis Hospital.

Five cases of infantile paralysis have occurred at Sudbury. The patients lived in different parts of the town; three were Canadians and two of foreign birth.

The Brant sanitarium for tuberculosis, which has been erected within a short distance of Brantford, was opened August 2nd. The building is of brick and concrete, absolutely fireproof, and contains space for a dozen beds with ample dining room accommodation. It is the intention to erect several small buildings on the grounds for patients who are in the incipient stages of the disease. The cost of the present building has been about $23,000.

During the eight months ending July 31st, over three thousand cases of measles were reported in Toronto.

A determined effort is being made to secure a public abattoir in London, in order that the meat may be properly inspected. A resolution to this effect was passed last August.

Several cases of typhoid have been reported at Fort William. The disease has been prevalent also in Ottawa and in St. Catharines.

The infant mortality was unusually high in Toronto during the month of August, when six hundred and nine infants succumbed.

A resolution was adopted at a meeting of the Toronto board of control, held September 10th, granting to the East End Hospital Association the sum of $100,000 towards a hospital for the east end, provided the Association will contribute an equal amount.
At a recent meeting of the London board of health it was decided to compel the railways, the owners of vacant lots in the city, and the city authorities, to cut down all weeds such as ragweed and goldenrod growing in their properties. It is thought probable that the pollen from these weeds is largely responsible for the prevalence of hay fever in the city. On the same occasion it was decided that bakers should be compelled to use tongs in handling bread. In Toronto the bakers are to wear white gloves when handling bread.

At the annual convention of the American Public Health Association, Dr. Hastings, of Toronto, was elected vice-president of the association, chairman of the committee on papers, and vice-chairman of the section on public health.

The regular monthly meeting of the Amasa Wood Hospital was held September 9th. The hospital is greatly overcrowded, forty-two patients being in a space which is only intended to accommodate twenty-five.

Two outbreaks of smallpox have been reported from Collin's Inlet, a lumber camp on the Georgian Bay. Both outbreaks were slight.

Several cases of typhoid fever have been reported from Wallaceburg.

During the past twelve months, four hundred and eighty-two patients were treated in the Victoria Memorial Hospital at North Bay. Thirty-four deaths occurred. Many of the cases treated are brought in from the construction camps in the vicinity. The great difficulty in administration at present is one of finance, as the hospital has a debt of ten thousand dollars.

A local board of health has been appointed at Ojibway. Dr. J. W. Brien, of Essex, is the medical officer of health.

Dr. Cathcart, of Courtright, has been appointed physician to the Indians of the Walpole Inland Reservation.

Professor Clarence Starr, of Toronto, was appointed to the Orthopedic Committee of the International Congress of Medicine which was held in London last August.
It is probable that a ward for measles will be added to the Isolation Hospital in Toronto. A homeless alien, suffering from measles, applied recently for admission to the General Hospital and had to be admitted, there being no provision at present for such cases in the city.

The governors of the Hamilton City Hospital at a recent meeting agreed that Judge Snider of that city should be asked to make a judicial investigation of the charges that have been made against the hospital.

Steps have been taken by the civic authorities to secure a site for a psychiatric hospital in Toronto. A house was leased for this purpose some time ago, but owing to objection on the part of the neighbours other arrangements had to be made. The police magistrate was obliged recently to remand five insane persons to the jail, and the present action is the outcome of this.

Several cases of typhoid have been reported in Hamilton in the vicinity of the Mountain. The outbreak is thought to be due to bad drainage and a shortage of water in the wells; there is no water connection in that part of the city.

At the annual meeting of the American Electro-Therapeutic Association, which took place September 2nd to September 5th, Dr. C. R. Dickson, of Toronto, was reëlected a member of the board of trustees.

It is proposed to expend $100,000 on improvements to the Hamilton General Hospital. Alterations will be made to the laundry, a new morgue built, and the boiler house practically rebuilt. Necessary repairs will be made, but as it is the intention to build a new hospital on the mountain, extensive alterations will not be made to the present building.

QUEBEC

Two hundred and twenty-two cases of smallpox have been reported in Montreal during the present year. Most of the cases occurred during the first three months of the year—fifty-one in March, forty-five in February, and forty-two in January. During the same period over two thousand cases of tuberculosis have been reported.
According to the provincial health inspectors, smallpox seems to be disappearing in the provinces. This is attributed to the compulsory vaccination. The number of vaccinations performed this year is more than twice that of last year.

The corner stone of the new St. Justine Hospital for babies, which is in course of construction at Montreal, was laid September 27th, by His Grace Archbishop Bruchesi. Subscriptions to the building fund amounting to over $12,000 have been received.

Typhoid fever has been prevalent in Montreal of late. Several deaths have resulted. There have also been reported several cases of infantile paralysis.

Dr. F. J. Shepherd, of Montreal, has received the honorary fellowship of the Royal College of Surgeons.

Dr. James C. Fyshe, who for the last two years has been medical superintendent of the Montreal General Hospital, has been appointed superintendent of the Edmonton hospitals.

The fifth annual convention of the Provincial Sanitary Authorities took place at Montreal, on September 16th, 17th and 18th. The meetings were well attended and were presided over by Dr. E. Lachapelle, of Montreal. Dr. E. Pelletier, of Quebec, was appointed vice-president. The following resolution was moved by Dr. Savard, and, after some discussion, the recommendations were adopted: "That the provincial government be asked to contribute to the creation of free dispensaries in the great centres of the province; that a serious educational campaign be immediately started by the district inspectors; that an appeal be made to all the physicians of the province to take part in this educational campaign; and that the medical inspection of schools and industrial establishments be rendered compulsory."

Dr. Maude Abbott, of Montreal, was elected secretary-treasurer of the medical museum at the Seventeenth International Congress of Medicine.

MANITOBA

The Canadian Conference of Charities and Corrections took place in Winnipeg last month.
The hospital at Selkirk is to be enlarged. The cost of the proposed addition is estimated at about sixty-five thousand dollars.

A hospital in North Winnipeg is greatly desired by the citizens. The matter is under discussion and it is probable that an effort will be made to collect an initial sum of $30,000.

SASKATCHEWAN

The revised plans have been approved by the hospital board of Saskatoon for the new hospital buildings to be erected at the university. Tenders for the work are to be called for as soon as the necessary funds are available, to ensure that the work should be carried through without interruptions.

Dr. Lindsay, of Yorkton, has been appointed medical officer of health and food and sanitary inspector of that city at a salary of $800 per annum.

It is the intention to establish a municipal hospital at Kindersley. The estimated cost is $25,000. The plans have been prepared for a hospital at Rosetown.

The estimated cost of the isolation hospital which is to be built at Regina is $77,600. The building will consist of two storeys and will be of brick with a concrete and stone foundation. The general hospital is also to be enlarged. A building of four storeys is to be added, constructed of brick and stone with brick and concrete foundation. The cost is estimated at eighty-eight thousand dollars.

Sporadic outbreaks of smallpox have been occurring from time to time throughout the province. As a means of preventing similar outbreaks in the future, an order-in-council has been passed making vaccination and revaccination compulsory throughout a certain area.

The infectious and contagious diseases reported in the province during the month of August were: typhoid fever, forty-eight cases; diphtheria, twelve cases; scarlet fever, twenty-four cases; measles ten cases; chicken-pox, two cases; tuberculosis, seven
cases. Only two cases of smallpox were reported, but the disease is frequently of so mild a character that in many instances no physician is called in, and it is probable that cases have occurred which have not been reported.

ALBERTA

An inspection of premises in Edmonton suspected of being unsanitary was made recently by Dr. Whitelaw, the medical officer of health. In one instance a family of nine were found to be living in one room, with only one bed. Two of the children slept in the pantry and three on the floor. In some houses the cellars were converted into sleeping bunks for men, ten being found in one and fourteen in another.

Dr. Orr has been appointed medical officer of health at Medicine Hat, to succeed Dr. McBride. The remuneration is $1,000 per annum.

Typhoid is extremely prevalent throughout the province. At Regina a temporary hospital has been erected on the grounds of the General Hospital. Some fifty cases of the fever have been reported there.

The Onoway Hospital was formerly opened on Thursday, August 7th. It has been built in connexion with the Anglican Church, but is intended for all patients, irrespective of creed.

The plans have been completed for a new hospital at Medicine Hat. It has not yet been decided whether the new building will be placed on the site of the present General Hospital or not. The estimated cost is $250,000.

The following cases of infectious disease were reported in Regina during August: scarlatina, 2; whooping cough, 23; tuberculosis, 6; measles, 1; erysipelas, 1; typhoid, 20.

The following resolution was passed in August by the Union of Alberta Municipalities:

"That we, the members of the Union of Alberta Municipalities (1) urge upon the centres of population, such as Calgary, Edmonton, Macleod, Medicine Hat, Lethbridge, to make proper provision
for the caring of their own advanced cases of tuberculosis; and (2) heartily endorse the plans of the Calgary branch of the Canadian Association for the Prevention of Tuberculosis to have a provincial sanatorium for incipient cases, such sanatorium to be under the management of a provincial board of control; and (3) pledge ourselves to do all in our power, both privately and officially, to have clauses one and two carried out to the full."

The Dominion Government has granted three hundred and twenty acres of land between Radnor and Mitford, on the main line of the Canadian Pacific Railway, on which a sanatorium for incipient cases of tuberculosis is to be placed.

A BY-LAW is to be submitted to the ratepayers of Calgary to provide $30,000, with which to build a tuberculosis hospital.

BRITISH COLUMBIA

Dr. Macpherson has been appointed medical superintendent of the Nakusp General Hospital in place of Dr. Mossman who has resigned.

The plans have been prepared for the proposed new building of the Royal Jubilee Hospital at Victoria. It is the intention to spend between $450,000 and $500,000.


Canadian Literature

ORIGINAL CONTRIBUTIONS

Journal de Médecine et de Chirurgie, July, 1913.

La Constante d'Ambard . . . . R. Falardeau.

The Canadian Journal of Medicine and Surgery, September, 1913:

Anesthetic "Dont's" . . . . R. R. Todd.

The Canadian Practitioner and Review, September, 1913:

The examination of sputum in Ontario . C. D. Parfitt.

The Public Health Journal, August, 1913:

Does vaccination protect? . . . . J. Roberts.
The Scope of Sanitary Work in the Home . C. A. Hodgetts.
How can cross-infection be prevented in a hospital for communicable disease? . M. B. Whyte.
Sanitary work among the foreign population . . . . C. N. Laurie.

The Public Health Journal, September, 1913:

Some sins against social and sanitary statutes A. P. Reid.

The Western Canada Medical News, July, 1913:

Ileo-sigmoidostomy: its indications and future . . . . E. Hall.

Dominion Medical Monthly, September, 1913:

Advances in Medicine . . . . L. K. Hirshberg.
ASSOCIATION JOURNAL

The Canada Lancet, July, 1913:

Public health legislation in the province of Quebec . . . . J. A. Hutchinson.

The Canada Lancet, August, 1913:

The great need of the physicians' active cooperation in public health work R. E. Wodehouse.
Appendectomy . . . . E. A. Hall.
The treatment of cancer by fulguration . . . . J. E. Hett.
On the reducing endo-enzyme of internal respiration. Respiration in animal tissues . . . . Fraser Harris.

The Canada Lancet, September, 1913:

Cæco-sigmoidostomy . . . . E. A. Hall.
Anaesthesia and the forceps in labour . . . . A. H. Wright.

Medical Societies

THE INTERNATIONAL CONGRESS OF MEDICINE

The Canadian members of the medical profession who have been attending the International Medical Congress, at a meeting held at the Imperial Institute on Tuesday morning, August 12th, unanimously passed the following resolutions:

Moved by J. T. Fotheringham, Toronto, seconded by J. M. Elder, Montreal:

"That we wish to offer to the president, Sir Thomas Barlow, to the secretary, Dr. W. P. Herringham, and to the whole committee, our hearty congratulations upon the great success which this meeting of the Congress has attained under their kindly and able administration. But particularly as members of the great British family do we desire to express the sense of familiar, homely
intimacy which is felt by all of us, enhanced as it is by the presence of so brilliant a gathering of the savants of other climes and races. For, as Canadians, revisiting the motherland *caelum non animum mutatum*, we deeply appreciate the real significance of the idea expressed by His Royal Highness Prince Arthur of Connaught in his gracious address of welcome, that all of us of the Empire stood together as hosts to all the rest of those attending. We noted with pleasure the repetition of this idea by the president in his address.

"On behalf of the Canadian ladies, we wish to thank the committee of ladies here for the profuse and well-ordered hospitality shown by them, and the many arrangements made for the comfort and entertainment of our wives and daughters.

"And as we part, each to his own work across the seas, we beg to offer to all our kind hosts and friends in London our cordial felicitations, thanks and good wishes."

Moved by Dr. James Third, Kingston, seconded by Dr. R. A. Reeve, Toronto:

"That the thanks of the Canadian Section of the International Medical Congress be tendered Dr. W. H. B. Aikins, Toronto, for his able services as secretary of the Canadian National Committee during seven years and member of the Executive Committee of the Seventeenth International Medical Congress."

Moved by Dr. H. A. Bruce, Toronto, seconded by Dr. H. J. Hamilton, Toronto:

"That the Organizing Committee for Canada for the Eighteenth International Medical Congress to be held in 1917, be constituted as follows: chairman, Dr. W. H. B. Aikins; secretary, Dr. H. B. Anderson; the deans of the medical faculties of the Canadian Medical Association for the years 1916 and 1917, with power to add to their numbers."

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**ALBERTA MEDICAL ASSOCIATION**

The annual meeting of the Alberta Medical Association took place in Calgary, August 14th and 15th, under the presidency of Dr. G. A. Kennedy. Among the papers read were: "Some remarks on fractures," by Dr. C. E. Smyth, Medicine Hat; "Some points in the differential diagnosis of duodenal ulcer," by Dr. J. S. McEachern, Calgary; "Metastasis in carcinoma of the breast," by Dr. W. E. Beggs, Edmonton; "Surgery of the thyroid," by Dr. Neil
McPhatter, Calgary; Hospital plans," by Dr. D. G. Revell, Edmonton; "Intestinal perforation in typhoid," by Dr. Clark, Calgary; "Frontal sinus infection—a case," by Dr. H. Orr, Medicine Hat; "Ectopic gestation," by Dr. Birch, Calgary.

The officers of the association are: president, Dr. G. A. Kennedy; first vice-president, Dr. C. E. Smyth; second vice-president, Dr. Parsons; third vice-president, Dr. Stevenson; fourth vice-president, Dr. Archer; secretary-treasurer, Dr. A. McNally, Lethbridge.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The fourteenth regular meeting of the society was held Friday evening, April 18th, 1913, Dr. D. F. Gurd in the chair.


The boy is four years of age. He was taken ill in January, 1911, and brought to the Royal Victoria Hospital in December complaining of inability to walk.

History: The child went out to play one morning perfectly well and at ten o'clock his mother noticed that he was throwing his legs around in a peculiar manner; at twelve noon he could not walk at all. Next morning at six he started to vomit and was sick most of the morning and again in the evening; it was noticed that his arms shook a great deal. He vomited off and on for six or seven weeks. The Sunday following the first attack he became worse, his whole body shaking, the eyes twitching and his speech was almost lost; he could only say a few words. He had not been able to walk alone since the attack and has been unable to feed himself. He is quite clean in his habits and not very irritable. He is the only child in the family; had measles at eighteen months. Father and mother both alive and well; no miscarriages.

When examined on December 9th he appeared well nourished, but did not look bright; sits with back bent and head doubled up; has poor colour, seems rather dull and speaks in a slow monotonous manner, pronouncing words slowly but correctly. Cranial nerves normal; no nystagmus; no paralysis at all; in motor system no paralysis. In doing the finger-to-nose test there was considerable incoördination, the same thing was noticed in doing the heel-to-knee test. Sensory examination apparently negative—pain, pin-
prick, touch, heat, cold—negative. Reflexes—arm, abdominal, epigastrics, knee jerks, ankle jerks, normal—no Babinsky, no clonus. Unable to stand alone, walks with assistance but throws his legs about.

The diagnosis rested between hysteria or some cerebellar disease. From the age of the patient and the definite incordination a diagnosis of probable acute poliomyelitis of the cerebellar type was made. It was decided that medicine would be of no use at all so we managed to get a lady interested in kindergarten work who goes down twice a week to the boy’s home, and who gives him exercises, takes him for walks, etc., and now although the child is still unable to walk alone he is able to stand alone and is much better in every way, especially in his eating, and his speech is much improved although still slow and monotonous.

2. Hyperidrosis, by Dr. A. Howard Pirie.

Dr. Pirie exhibited a case of extreme perspiration of the hands which had been treated with X-rays. The parts of the hands treated were perfectly dry while the untreated portions perspired freely. This hyperidrosis is not just ordinary perspiration of a person who gets hot, but it goes on all day long and only ceases at night. Seven years ago while treating a patient with the X-rays for a tuberculous condition Dr. Pirie noticed that after the condition had healed the part treated did not perspire. It was then tried in this condition of excessive perspiration with excellent result.

Discussion. Dr. D. F. Gurd: I know of a case of an architect where one side of the face is affected with this condition of excessive sweating and it was thought that he had some unusual terminations of the parotid gland; another case was over the thenar region and a very great nuisance.

Dr. K. Cameron: I would like to ask Dr. Pirie if he ever treated a case of bromidrosis.

Dr. McKee, Boston: In a good many cases of excessive sweating, particularly in the arm pits of women, it is accompanied by excessive odour and this is due, partly or largely, to an excessive secretion of the sebaceous glands and also to a peculiar odour in the sweat itself. The majority of the cases come from the arm pits and there is very excessive sweating. If this is treated the bromidrosis disappears. Dermatologists are pretty well agreed that there is no successful treatment outside of X-rays. Knowing that X-rays could produce atrophy of the sebaceous glands, I tried some years ago to produce atrophy of the sweat glands for hyperi-
drosis, but failed as the cases were either under treated or over treated. I have come to Montreal to learn Dr. Pirie’s technique as success lies only in the giving of enough and no more, as we have proved by experience. This is also the case with ring-worm of the scalp in which Dr. Pirie has had such success with the x-rays, the dosage must be exact.

Pathological Specimens: Series by Dr. C. C. Gruner.

1. Heart showing typical bread-and-butter exudate on the pericardium, from a case of empyema which had been existing for three months following pneumonia; organism found was pneumococcus.

2. Tumour of the bladder. Patient had been ill four months with symptoms of enlarged prostate, difficulty of micturition and occasional haematuria. Mass filled up whole of bladder, was very soft and had all the appearances of a malignant tumour. Microscopically mass appeared to be organized blood clot with one small piece of white tissue, rather solid and not pulpy.

3. Intussusception in colon in splenic flexure; annular constriction at seat of invagination; gangrenous enteritis of caecum.

Discussion. Dr. A. E. Garrow: The specimen of intussusception was from a patient who came under my care a week ago. He was admitted under Dr. McCrae in a condition of collapse, subnormal temperature, very rapid pulse, distended abdomen and pronounced toxic condition. There was a history of two weeks’ illness, but symptomatology difficult to obtain; apparently passed some blood two or three days prior to coming to hospital and no movement of bowels for eleven days. On opening abdomen there was enormous distension of small intestine requiring two or three enterostomies to empty bowel. In order to drain obstructed area and facilitate resection of bowel a colostomy was done on right side. This was done forty-eight hours after admission and after washing out stomach several times it looked as if he were going to improve when this extensive gangrenous colitis developed.

Paper. The paper of the evening was read by Dr. W. G. Turner on the treatment of Pott’s disease. (See page 852.)

Discussion. Dr. J. Alex Hutchison: I have had an opportunity of seeing Dr. Albee’s specimens, both the dead bone specimens and the living cases and I was very much impressed with the work. I saw cases of active tubercular disease in quite small children walking about the ward who had been carried in only a few weeks before with the characteristic symptoms which Dr.
Turner enumerated. I was surprised to know that such daring surgery could be done in the presence of so much disease.

Dr. A. H. Pirie: It has been a great pleasure to watch this case of Dr. Turner’s in which you see the callus passing from the graft to the spinous process; there is no doubt that the callus is well formed. Dr. Turner referred to the light area of the heart behind the dorsal region. One case at the hospital puzzled me. I thought it was an aneurysm but from the clinical standpoint it was evidently a tuberculous process. The patient has had a graft put in and I believe is doing well.

Dr. A. E. Garrow: I would like to ask Dr. Turner if he has any explanation to offer for the development of this bridge of new bone growing from the end of the graft into the crest of the vertebra above. It opens up some thought in connexion with the development of bone. Murphy is very strongly in favour of the view that if you have no framework for the development of bone between the split vertebra and the graft, bone does not grow; whereas in the picture one sees a bony bridge developing through the gap in which there is no bone splint presenting. Dr. Turner spoke of the wisdom of postponing operation in young children until six or seven years of age. I had the pleasure, like Dr. Hutchison, of seeing Albee’s cases and some of those going round the wards were but three or four years old and undoubtedly doing as well as the others.

Dr. Hingston: I saw Dr. Albee perform two or three of his operations and the difficult point was the removing of the bone from the tibia. I would like to know if Dr. Turner used a motor saw or whether he was able to chisel it out and if the operation with the chisel was at all easy. As regards cases with pressure symptoms I would like to know what Dr. Turner’s opinion is of using extension and weights to the head and legs after putting a patient in a plaster cast, and especially when the symptoms are acute; also what Dr. Turner thinks of the Calot jacket with the opening cut opposite the deformity and pressure applied there once a week or every two weeks when the pad is removed and a larger one put in its place.

Dr. Turner: In reply to Dr. Hingston I would say that the operation is really not a difficult one and I have tried both the saw and the chisel and I must say the chisel is more easy than the saw. Albee himself uses the saw. About the pressure signs, paraplegia, I have not used extension since the first year I came home. The cases we have had have not really required it, the hyperextension and absolute rest have cleared up the signs. I have
seen the double extension quite frequently and it has good results in some hands. The Calot jacket I have not used since the first year he brought it out. The original Calot operation is not surgical at all, that is, forcible correction and breaking down the hump.

**Case Report:** Retinitis Pigmentosa, by Dr. Hanford McKee.

The fifteenth regular meeting of the society was held Friday evening, May 2nd, 1913, Dr. D. J. Evans, president, in the chair.

**Pathological Specimens:** Series by Dr. A. M. Burgess.

1. Kidney. The two kidneys weighed 150 grams. From a man aged twenty-four; typical small, granular, chronic interstitial nephritis. The interesting point was the man's youth. He had a history of disease of both kidneys at seven years of age.

2. Kidney showing a large stag-horn calculus, the entire pelvis filled with the concretion.

3. Gas bacillus liver. Caused by infection with B. æroenogenes capsulatus. This originated in the uterus, a septic condition following delivery and the invasion of the liver and the general circulation by the B. æroenogenes capsulatus following a general peritonitis. Probably invasion occurred just before death.

4. Right temporal lobe and part of occipital lobe of brain. On examination over temporal lobe convolutions very markedly widened; with this exception no apparent difference from ordinary tissues of brain. This is one of those gliomata of the brain which are very poorly marked off from the surrounding brain substance. The history was not suggestive: had a fall three weeks before coming to hospital and symptoms pointed to something traumatic, but this had nothing to do with it, and the tumour was the whole cause of the symptoms.

5. Carcinoma of oesophagus with extension to larynx and with a carcinoma which lay just behind the cardiac end of the stomach. It is a secondary carcinoma which has pushed its way into the lumen of the stomach; it always pushes the intact lumen ahead of it. It is secondary to the fungating ulcerative tumour in the oesophagus. In the larynx extending up to the right side of the epiglottis and down over one arytenoid cartilage there is a definite growth which is no doubt an extension.

6. A mass removed from the breast of a young Italian boy nineteen years of age. The breast was as big as two fists and looked like a very active lactating breast; it was firm. Besides the breast the arm showed a very interesting condition; it was very large,
extending from the wrist to the breast. The growth did not at all involve the skin; it was apparently nodular, rather resilient on palpation, and had given him no symptoms except that he complained that the weight of the arm and the breast got in his way; his muscles were all right. He was sent into hospital by Dr. Shepherd, who saw him five years ago, with several distinct nodules on the inside of his arm. The diagnosis clinically was multiple neuro-fibromata, von Recklinghausen's disease. The specimen shows a stringy-looking mass very much like varicose veins. On section these masses were gelatinous and rather translucent. Dr. Burgess illustrated the case with slides of the sections.

Case Report: Metastatic gonorrheal keratitis and iritis. By Dr. Hanford McKee.

Discussion: Dr. G. H. Mathewson: Speaking of the different degrees of severity of the conjunctivitis, I do not think any of those cases one sees can be mistaken for the kind you get when the conjunctiva is directly infected; it looks beefy and cheesy, and there is not very much secretion. The keratitis is a rare condition. In cases I have seen where there was iritis, the internal administration of the iodide seemed to have a very beneficial effect.

Papers: 1. The Gibson Charts in the diagnosis and prognosis of acute abdominal conditions, by Dr. Fraser B. Gurd.

2. Insanity, its relation to the State; prevention and treatment, by Dr. Colin K. Russell.

Discussion: Dr. Haig Sims: There are two points in this last paper which I should like to speak of. None of us can help realizing the great necessity for the hospital which Dr. Russell advocates, but there seems to me to be one difficulty which will be even greater than that of obtaining funds; I speak of the obtaining of a properly trained staff. The average hospital trained nurse is completely ignorant in the matter of caring for the insane and the average institution attendant is generally very unreliable and an uncertain factor. There are a number of precautions, apparently minor ones, that need to be taken in an institution of this kind, such as keeping under lock and key all razors, knives, and matches, etc., counting all utensils for eating, and the enumeration of all marks or bruises on the body of the patient at admission, the omission of which at any moment may cause serious trouble for the hospital; and unless house men have changed very much lately, I do not think it would be easy to find a man who would realise sufficiently the necessary vigilance to be employed constantly, who would understand that every melancholic is a potential
suicide, especially during convalescence, and that a patient suffering from dementia praecox can commit more kinds of dangerous and destructive mischief in five minutes than a sane person could conceive in a week. Again, in regard to treatment, the house man has not the opportunity of obtaining the special knowledge necessary for the treatment of these cases, more especially in regard to such matters as tube feeding. It is a simple thing to pass a tube into the stomach of a sane patient; the same procedure in the insane is a very different matter. With reference to all these things, I simply wish to emphasize the fact that I think it would be advisable that all nurses in the general hospital training schools in this city should receive some instruction in the care of the insane, and it would be a very necessary thing for this projected hospital to have a trained institution man in charge as resident officer. Another thing is that there are a number of cases of the very acute insanities in which the earlier treatment is begun, the greater are the chances of recovery. At the present time it is a common thing for patients to be brought into hospitals for the insane with the intestines loaded with scybala, the bladder distended with urine, and the skin, mouth, and tongue very dry for lack of food and water and the use of hypnotics. In these cases very much can be done for the patient at once, while waiting for the committment to the hospital for the insane. I do not wish to decry the use of drugs at all. The crises of paranoia can be very often quieted by apomorphine, and I know of nothing which controls the disturbed episodes of senile delusional insanity so well as hyoscyamus and chloral. Still the acute insanities which are treated for a long time by hyoscine and morphine do not seem to be treated always in the right way. The main indication there is to remove the toxines. Of course, when mechanical restraint was abolished, it was replaced by drug restraint, and that again has been superseded by prolonged tubbing. My point then is that it is possible in the short time before committing our patients, to commence the prolonged tubbing in the patient's home, and in very many of these cases we can hasten recovery by this means.

Dr. J. G. Adami: I think that everyone here will agree that Dr. Russel has brought up a matter of very great importance, that of having an institution here where these early cases could be treated and kept under observation and really saved from themselves and saved for their families and the community. These institutions are in Boston and elsewhere, and there is a demand for such an institution in this city. I noticed the other day an account of
what they have in Glasgow, namely, in their general hospitals they have observation wards, wards in which they do not accept cases which have a homicidal tendency, and patients with dementia praecox are sent away at once; but there are a very great many cases of doubt where they can well be brought under observation in the ward. Twenty beds female and twenty beds male, in one of our big hospitals here, would afford very great service and save many cases of temporary excitement, alcoholic cases, and early cases of other unsoundness from going to the asylum. After such a ward had been in operation for some time, its value would be established and a special hospital would be the natural result. As far as I can understand, cases of suicidal mania and acute insanities are not intended to be treated here, the cases for the psychopathic clinic are the early cases and the hopeful cases, nursed by careful means back again to complete sanity and made into serviceable members of the community. It is for that reason that we certainly need some institution of this kind in Montreal.

Dr. D. J. Evans: There certainly is a great need for some step in this direction. Any man who is in active general practice is constantly worried and harrassed by these cases which try one’s patience in the extreme; it is difficult to get an environment that will make in the slightest degree for recovery, and to leave such a person in this condition with relatives and friends, is doing everything that is just wrong. There is an urgent need for some place for the treatment of these incipient cases. Montreal may not be in a position to put up a million dollar institution for this purpose, but some step should be taken in the direction of providing accommodation for these doubtful cases and giving them a chance for recovery. In this province we cannot by law take a person who is said to be of unsound mind, even to the most limited extent, out of the province, and if, on the other hand, we fulfil the law and allow the person who is mentally unbalanced from tribulation or worry to remain, we have to take them to a public institution and thus stigmatise them as lunatic in order to have them admitted. That stigma is one that no medical man will lightly place on his fellow man, and a patient must be in a serious condition before he is willing to take the responsibility of designating a person by that name; thus the physician is greatly handicapped by the condition of things as they exist in this province. It is the duty of this society to take up this matter and endeavour to have such an institution established for the treatment of these unfortunates.

Dr. C. K. Russel: In this psychopathic hospital which I sug-
gested, it is not intended in the slightest degree to compete with the present asylums. I have talked this matter over with Dr. Burgess and Dr. Porteous, and they are very keen about it. They realize that it is a great want in Montreal, and are eager to go ahead with it in any way possible. I would not suggest that we take in cases that are in any way advanced, only cases which are recognised as curable or from which something can be learnt by study and investigation. The study of insanity has always been approached from the wrong end. With a diseased heart and kidney, you can study the signs present, and then, at autopsy, you can find the cause; but with the mind they have always studied the normal brain and tried to make out its mechanisms. It is only recently that Jung and Freud have worked in from the pathological point and studied the functions of the organ from the pathological evidence during life. They have attained something; they have been able to teach us a new psychology and give us a new understanding of mental diseases. The subject is only in its infancy, but it will amount to something, and that very shortly. But in the meantime these patients are missing the opportunity that they might have, and we are missing the opportunity of studying them.

The sixteenth regular meeting of the society was held Friday evening, May 16th, 1913, Dr. D. J. Evans, president, in the chair.

Living Case: McReynold's operation for pterygium, exhibited by Dr. W. G. M. Byers.

The treatment of pterygium has been notoriously unsatisfactory. The multiplicity of operations in our text-books is the best proof of this fact. Carried out with the most scrupulous care, the various procedures introduced for this condition have been followed by relapses, to the chargin of the surgeon and with damage to the eye of the patient. The case I show to-night is an example of an operation which has been very satisfactory in my hands, and has been very generally commended, especially in America. It was introduced by McReynolds, of Texas, and is a modification of an operation performed by Desmarres in 1855. Briefly, it consists in dissecting up the pterygium and burying it beneath the conjunctiva of the globe below the cornea. In this way the growth is deflected so that any progress made by the vessels will be in a direction where they will do no harm; and, at the same time, the tissues above are made to cover the denuded portion of the globe that is
left bare by the incision, and by the removal of the vascular portion of the pterygium.

Although it is now barely three weeks since I operated on this man for a growth of considerable size, it is hardly possible to notice anything strange in the appearance of the eye.

Pathological Specimens: Series of ductless gland specimens exhibited by Dr. E. J. Mullally.

Some time ago we had, at the Royal Victoria Hospital, an autopsy on a case of acromegaly which was very interesting, and in order to show the abnormal development that occurred in the pituitary and thyroid, I thought it might be of interest to show a specimen of the normal pituitary, weighing $\frac{1}{2}$ gram. It consists, as you know, of two lobes, a posterior and anterior. The posterior lobe is composed of modified neuroglia tissue and has certain peculiar physiological actions, one of the most important of which is that when solutions of the lobe are injected into the body, a continuous and prolonged rise in the blood pressure takes place. Another action is on the uterine muscle, and a third is upon the mammary secretion. All of these actions rise from the injection of the posterior lobe. The anterior lobe gives no such results; it is purely glandular in structure, consisting of two main types of cells. The type of cell found in the condition known as acromegaly is distinctly basophylie in reaction.

This second pituitary was removed from a case of acromegaly; it weighed fifteen or twenty times more than the normal, and consists almost entirely of basophilic cells. The patient was a French Canadian woman, aged sixty-five years, who had symptoms of acromegaly for upwards of five or ten years. An interesting feature in connection with the case was the abnormal enlargement of the ductless glands, particularly the thyroid and adrenals, whilst there was almost complete atrophy of the ovary.

The third specimen is the thyroid removed from the same subject. It is cut through here and there to show the adenomatous development occurring in the substance of the thyroid. The patient had during life certain symptoms of myxœdema, great roughness of the skin, and a growth of hair over the entire body. The thyroid gland was found weighing more than ten times the normal and on section found to be adenomatous, with fibrous tissue development and calcareous degeneration here and there.

Two other specimens of thyroids are presented for your inspection, one removed from a child of fifteen years, who had had symptoms referable to the thyroid for three years previous to operation.
It consists almost entirely of a colloid goitre. She had certain symptoms of hyperthyroidism: irritability, extreme nervousness, and frequent attacks of palpitation of the heart. The second thyroid is the right lobe from a woman aged fifty-five, who had had symptoms referable to the thyroid for one year previous to operation. The symptoms were those of exophthalmic goitre: pronounced bulging of the eyes, extreme irritability and nervousness, frequent attacks of diarrhea, tremor of the hands and palpitation. There is a marked macroscopical and microscopical difference in the two specimens; the last consists of extensive hypertrophy whereas the other consists of a colloid degeneration of the gland. The two are interesting by way of contrast.

Case Report: Some thoracic cases illustrating the value of the skiagram, by Drs. C.F. Martin and D. S. Lewis.

Dr. G. H. Mathewson: In connexion with diagnosis in these doubtful cases, I may say that in an examination of the eyes we have found in several cases miliary tuberculosis of the choroid.

Paper: The paper of the evening was read by Dr. G. H. Mathewson on mastoid disease.

Discussion: Dr. H. S. Birkett: I am sure the members of this society must be very much indebted to Dr. Mathewson for presenting a subject of this kind before the minds of the members. At the present time the condition is sadly neglected and cases are brought to the aurist in such an advanced stage that a first year student should be able to recognise the disease. The recognition of early mastoid infection demands that the general practitioner shall have a fair amount of knowledge of the subject, and there are certain points that have occurred to me which I thought might be touched upon. In the first place, in these days where students are taught so much laboratory work, it is very little trouble for the general practitioner, for instance, to make a differential blood count, and this to my mind is a very essential feature as an indication of involvement of the mastoid, where the leucocyte count is very much increased and the polymorphs usually extending up to 80 per cent. Where the discharge has continued for a longer time than four weeks, it bespeaks undoubtedly involvement of the mastoid, even though there be no tenderness or even swelling of the mastoid, for the presence of such a large quantity of discharge does not bespeak the simple involvement of the tympanum itself but the extension of the suppurative process directly through to the adjoining cells. If we examine the drum head and find that after a paracentesis it still remains bulging or pouting, it is evident
that there is a definite swelling of the mucoous membrane, causing such a local condition and acting as a stasis or blocking of the pus from the adjacent mastoid cells. As to the tenderness of the mastoid, in the three points mentioned the tip, in my experience, is almost as frequent as any of the spots; and this can be demonstrated very early by the simple little method of turning the head directly to the side opposite to the ear involved, thus pressing upon the periosteum. Now the slightest pressure will very often elicit tenderness, while if it is tried with the head straight forward from the body, no result is obtained. Again, I believe in early operation for this reason, that it is the means of accomplishing what is very essential in all these mastoid cases, the preservation of the hearing. If these cases are allowed to run for six or eight weeks, the chances are for fairly normal hearing but very much diminished. Early operation does no harm to the patient or to the structure operated upon and it is the means of establishing more perfect drainage and enables one to retain better hearing than if postponed for several weeks. As to local treatment, I have found that aspiration will accomplish a great deal; a fairly free opening and aspiration of pus will often bring about healing which would not be accomplish by syringing and the Politzer air bag. This latter has practically been relegated to the past, I believe, for unless you have a very patent opening, it is often the means of forcing infecting material into the antrum. Of course in centres where we have the opportunity of applying the x-rays, we have a reliable means of recognising the early infection of the mastoid process itself. It does not supplant the clinical means of diagnosis; it is only one of the aids which in one hand has proved very useful.

Dr. G. H. Mathewson: As regards Dr. Birkett's remark about the leucocyte count, I must say I have given it up; in cases where I was in doubt, it did not seem to give much help. As far as the x-rays go, they have to be done exceedingly well to give one a plate from which you can make an absolute diagnosis, and it seems to me that when you have inflammation, you have as good a shadow as when you have pus, and that makes a difference in the treatment. With Dr. Peters I am forced to agree, that in these epidemics of measles we see a great many cases of middle ear trouble in spite of all our care, especially if the epidemic is a severe one. With little children you can do very little, but with older people you can do much. In children over ten years, a great deal can be done to cure these cases of otitis media, and even prevent them, but with younger children but little can be done.
The seventeenth regular meeting of the society was held Friday evening, June 6th, 1913, Dr. D. J. Evans, president, in the chair.

Pathological Specimens: Series by Dr. W. G. Hepburn.
1. Piece of brain showing exudate on surface; no fracture of skull. Patient died from septic meningitis.
2. Annular carcinoma of the rectum with involvement of the retroperitoneal glands; the liver weighed 6,370 grams and showed uniform enlargement.
3. Tumour involving corpus callosum. It was a glioma of the soft type and contained considerable haemorrhage but no capsule.

With reference to the first case, we only had the patient in hospital three days; on admission the temperature was 103 but fell the next morning as low as 99, then gradually rose to 107 2-5, and on this rise we made a diagnosis of probable cerebral abscess. The microscopical sections of the liver showed, so far as we have seen, only carcinoma and, so far as we could find out, no cirrhosis. The supraclavicular glands have not yet been examined for the presence of disease.

Case Reports: 1. Case of pyloric stenosis by Drs. Geo. Shanks and W. L. Barlow. Dr. Shanks read the case report which was illustrated by Dr. Pirie with lantern slides.

Discussion: Dr. A. E. Garrow: I should like to know if any microscopical or histological examination has been made of the part removed.

Dr. Shanks: The small amount of tissue snipped away was not used for microscopical examination.

2. Spleno-medullary leukaemia, by Dr. C. A. Peters.

Discussion: Dr. A. H. Pirie: May I ask if anyone has treated this condition from the standpoint of a parasite in the blood and has used salvarsan, and with what result? It is well known that in many x-ray workers the white blood corpuscles are found to be below the normal.

Dr. C. A. Peters: I have no knowledge of any such work.

3. Pancreatitis of the infective type, by Dr. A. E. Garrow.

Lambton County Medical Association

The last regular meeting of the Lambton County Medical Association was held in the General Hospital, Sarnia, on July 9th, 1913, on which occasion a large number of the medical men
of the county were present. The meeting was of a surgical and clinical nature. Operations were performed by Dr. McDonald and Dr. Logie, of Sarnia, and some very interesting cases were presented by Dr. Henderson, Dr. Bradly, and Dr. McDonald. The next meeting will be held in Forest in October.

FRASER VALLEY MEDICAL SOCIETY

The Fraser Valley Medical Society was organized at a meeting which took place at New Westminster on August 28th. The object of the society is to keep the members in closer touch with one another and to afford opportunities for discussion on subjects of interest to the profession. The officers of the society are: president, Dr. DeWolfe Smith; vice-president, Dr. A. A. King, Ladner; treasurer, Dr. A. L. McQuarrie; secretary, Dr. D. F. Carswell; executive committee, Drs. R. E. Walker, G. E. Drew, and E. J. Rothwell.

CALGARY MEDICAL SOCIETY

A meeting of the Calgary Medical Society was held in the Carnegie Library on Thursday evening, June 10th, when the following officers were elected for the year 1913-1914: president, Dr. T. J. Costello; vice-president, Dr. G. R. Johnson; secretary, Dr. E. B. Roach; executive committee, Drs. McEachern, Madden, and H. Johnson.
THOMAS SYDENHAM, THE ENGLISH HIPPOCRATES
(1624-1689)

BY WILLIAM J. FISCHER, M.D., WATERLOO, ONTARIO

"As long as Almighty God shall give me life, I shall still press forward to my avowed end of doing all the good I can in my calling."—Thomas Sydenham.

MEDICINE is a practical science, and there are two open roads that lead great, thinking minds to a better understanding of it. Every doctor, in his daily routine work, comes upon these pleasant places, and recognizes the two strong currents of thought that tend to the perfection of a science which has made wonderful strides in advancement in past centuries and the present; currents of thought at once vital and important—the one scientific, the other practical, but both necessary to the solving of problems of real benefit to the great, throbbing humanity about us. We have, then, two schools in medicine—the scientific school, of which William Harvey was the founder, and the practical, or clinical school, represented by Thomas Sydenham. "The great merit of Sydenham," writes one, "was to proclaim the great truth that science was, is and always must be incomplete; and that danger lurks in the natural tendency to act upon it as if it were complete. The practical man has to be guided not only by positive knowledge, but by much that is imperfectly known. He must listen to the hints of nature as well as to her clear utterances. To combine them may be difficult; but the difficulty is solved in minor matters by the faculty called common sense; in greater affairs, by the synthetic power of Genius."
Thomas Sydenham, then, the English Hippocrates, as he is sometimes called, occupies a unique place in the history of medicine. In the words of Horace—"medicus in omne aevum nobilis"—he was a physician famous for all time. Dr. John Brown, the essayist, calls him "the prince of practical physicians;" and it is said that Boerhaave, one of the most eminent teachers of medicine in Europe, never mentioned Sydenham without taking off his hat as a sign of respect and admiration. "Sydenham's is a name," writes another, "not for England only, but for the world."

Many pleasant memories cluster around the humble little Somersetshire village, famous because it was the birthplace of this man of genius, who lived, like Harvey, at a time when his country's heart was in a state of wild unrest, and the staid old English character was being moulded into shape by the strong influences of internal strife and disorder. Yet, withal, he emerged into the light of eminence with a character as noble as it was beautiful.

In an unknown little corner of England, at a place in Somerset called Wynford Eagle, Thomas Sydenham, the great physician, first saw the light of day. Old chronicles give the date of his baptism September 10th, 1624. Sydenham's biographers all speak of the scarcity of material at their disposal concerning his life. The history of the seventeenth century is much clouded, and the life of Sydenham, like that of other contemporaries, could stand a genuine outburst of sunshine to bring out clearly the many little details that give colour to the picture which the historian, not through any fault of his own, paints so poorly and imperfectly. Wynford Eagle is a hamlet and chapelry about eight miles from Dorchester. In the famous old Domesday Book, it is called "Wynfort." The house in which Sydenham was born is an old, gray, ivy-grown structure and stands to-day a well-preserved building. "It lies," says one, "in a hollow, sheltered by the downs and upland pastures, and is a pleasing specimen of a seventeenth century manor-house. The front is composed as usual of three parts, each surmounted by a gable. The whole building is very solidly constructed of stone and flint." Even to this day one of the fields near the old home goes by the name of "Sydenham's."

Thomas Sydenham was the fifth son of William Sydenham—out of a family of seven sons and three daughters. His mother, a woman of pious mind, was a Mary Jeffery, daughter of Sir John Jeffery, of Catherston. Tracing the genealogy of the Sydenhams backward into the Middle Ages, we find that the family contributed some distinguished names to current history. One, Richard
Sydenham, was a judge in the reign of Richard II; another was a bishop in the reign of Henry V. A daughter of a Sydenham married Sir Francis Drake in Queen Elizabeth’s reign. Then there were numerous members of parliament, sheriffs and knights. Very little is known of the early life of Sydenham except that he was under the care and guidance of honest and conscientious parents. It is thought that his early education began at the grammar school in his native village, or at Dorchester. Others, again, state as probable that, like many families of his day, he was instructed by the regular tutor living in the same house, or that the local clergyman, as was customary, instructed him in Latin.

At eighteen, Sydenham was sent to Oxford—the college selected for him being Magdalen Hall. Here he matriculated on May 20th, 1642. A turn in political events, however, soon put a stop to his academic career, which could not have exceeded a few months. The old, old struggle between the king and parliament was fiercely raging. They were stormy times. There was much fighting, much bloodshed. Think of the influences they would bring to bear upon the life of Sydenham, “who,” as one writer puts it, “brought into matters of thought and science the courage of a soldier and the independence of a rebel.” On August 22nd, the king raised his flag at Nottingham. The cry of civil war was in the air, and peace, poor, white-souled thing, spread its wide wings and fled the country. Every Englishmen with a heart in him had to decide on which side he would play his part. The young Sydenham espoused the cause of parliament, notwithstanding that Oxford and its university were followers of the king. Anthony Wood, a contemporary writer, says: “Sydenham left Oxford without taking arms for the king as the other scholars did.” Thus the lad of eighteen threw his books aside for a sword and the brilliant uniform of a soldier in one of the most memorable conflicts on the pages of history. In looking over old records we often come across the name of the Sydenhams. Here it was a brilliant victory, there a display of courage and heroism under most trying circumstances. The “fighting Sydenhams,” they were called—this father and his four brave, daring sons. Two of them died in battle—soldiers to the last. How a lonely mother-heart must have pined for the husband and the precious, valiant children!

We know very little of Mrs. Sydenham, but she must have been an heroic woman, possessing all the endearing qualities that ennoble lofty womanhood. For her, this war must have been a tragedy—awful and soul-crushing. She, herself, innocent victim, later was
killed by the hand of a Royalist—a certain Major Williams. An old chronicler roughly tells how Thomas Sydenham—the loving son—avenged the wrong done his mother. It happened that he and this very Williams chanced to meet later on in battle. "For a soldier in the field to find himself confronted in arms by the slayer of his mother would be a crisis strange and startling enough to turn even a coward into a hero," writes Payne. "It must have roused the Sydenham blood, which was not that of cowards, to an unexampled heat. What followed must be told in the words of the old narrative, since we can add nothing to them, nor have we the right to take anything away:"

"So soon as Colonel Sydenham saw Williams, he spake to his men that were next to him to stick close to him; for said he: 'I will now avenge my mother's innocent blood;' and so he made his way to Major Williams, and slew him in the place, who fell dead under his horse's feet.'" Could anything be more highly tragic than this sad event in the family history of the Sydenhams? In passing, we might note on account of its bearing on medical history, that Richard Wiseman, the most eminent surgeon of the seventeenth century—often called the Father of Surgery—acted as a surgeon on the king's side during the Civil War.

In 1646, Sydenham returned to Oxford University. He writes: "It is now the thirtieth year since the time when, being on my way to London, in order to go from there a second time to Oxford (from which the misfortunes of the first war had kept me away for some years), I had the good fortune to fall in with the most learned and honourable Dr. Thomas Coxe, who was at that time attending my brother during illness; and then, as he has been up to the present time, practising medicine with great distinction. He, with his well-known kindness and courtesy, asked me what profession I was preparing to enter now that I was resuming my interrupted studies and was come to man's estate. I had at that time no fixed plans, and was not even dreaming of the profession of medicine; but moved by the recommendation and influence of so great a man, and in some way, I suppose, by my own destiny, I applied myself seriously to that pursuit. . . . After spending a few years in the university I returned to London and entered on the practice of medicine."

The war also had its depressing effects upon Oxford University, and sadly crippled it. The halls and rooms of the colleges had been turned into military garrisons, and the songs of the merry students were drowned by the shouts of busy soldiers, the former
being very much in the minority. "Both the university and the colleges were impoverished by their quasi-voluntary gifts to the king; some of their buildings were in ruins, and there was, in Anthony Wood's words, 'scarce the face of a university left.'"

This, then, was the condition of the university in the time of Sydenham but, despite these circumstances, many bright minds lent a refreshing glow to the depressing picture. The intellectual life about Oxford, however, was a redeeming feature. Wallis, the great English mathematician, and Seth Ward, the astronomer, came over from Cambridge to add glory to it. Dr. Jonathan Goddard, Cromwell's physician, who constructed the first telescope in England, and Dr. William Petty, the economist and lecturer in chemistry, also frequented this noted seat of learning. Then, besides, there were Christopher Wren, that "miracle of a youth," the noted Robert Boyle, Thomas Willis, the anatomist, and Robert Hooke, the chemist. This group of scientific men often met of an evening at the home of Dr. William Petty, where scientific discussions generally took place upon regular meeting nights. How pleasant it would be for us to picture Sydenham at one of these meetings, surrounded by this noted circle of immortals. However, we have no record of him attending them; but we do know that he and Robert Boyle—one of the most brilliant members of the group —were fast friends.

When Sydenham attended Oxford, the Earl of Pembroke was Chancellor of the university. On April 14th, 1648, Sydenham was created Bachelor of Medicine. Some claim that he also received an M.A. degree, but Wood, the historian, denies this. "The modern reader," writes the biographer, Payne, "may wonder a little that medical degrees, involving professional privileges, were conferred as readily as honorary titles in arts or law are given at the present day. Sydenham could not at this time have made any serious study of medicine, having been barely a year resident in the university and in a time of great confusion. He had thus the rare good fortune to obtain a degree at the beginning, instead of at the end of his student's course. So much he owed to patronage. But if we consider the incalculable gain to the science of medicine involved in making Sydenham a doctor, we must admit that seldom has the blind goddess of patronage dispensed her favours with a happier hand."

In 1648, the young physician was appointed to a Fellowship of All Souls' College, and, in March of the next year, the Senior Bursarship of the college was given him.
Comparatively nothing is known of Sydenham's life at the university. We are told, however, that "when Sydenham had returned to the university after three years' absence, he had forgot his Latin, but recovered it by the obstinate reading of Cicero, translating him into English and then re-translating into Latin, correcting from the original." Cicero, it is said, was always a great favourite of his. Sir Hans Sloane tells us that Sydenham always kept a bust of him in his study. In those days Oxford offered few facilities to the student in medicine. Sir Thomas Clayton—Regius Professor of Medicine—gave bi-weekly lectures on the doctrines of Hippocrates and Galen. Then, also, there were classes in anatomy—but the study of anatomy was in its infancy almost, and little could be effected in this line. Not until Willis and Lower set to work did it gain any point of eminence. Sir Thomas Clayton, who held the chair in Sydenham's time, is said to have had a weakness which entirely disqualified him for his office, namely, that he could not bear the sight of blood. He finally resigned, and the chair fell to the famous Dr. Wm. Petty, who studied at Leyden and Paris. Chemistry and botany were also important branches in Sydenham's time.

A second military service again cut short Sydenham's career, but we will pass over it in silence for it does not bring out anything of importance that might add to or detract from the personality of this great English physician.

In 1665, Sydenham resigned his Fellowship in All Souls' College, and in the same year took unto himself as wife a certain Mary Gee—a Dorsetshire lady, it is supposed. The year following he settled down to practice his profession at Westminster. His rooms were in the immediate neighbourhood of Whitehall—the mecca of politicians, statesmen and parliamentarians. But a few blocks away lived the immortal Milton, the sweet, blind singer of "Paradise Lost." Is it not possible that the young physician might have been called in many a time to administer to the growing infirmities of the immortal bard? There is nothing left to tell us that he ever did so, but would it not be pleasant to draw so charming a picture about the life of so great a poet, and so great a physician? The neighbourhood in which Sydenham lived, had, as we will see later, a great bearing upon his own writings. He wrote mostly on fevers and agues, and the whole Westminster region—a swampy and malarious country—was a breeding spot for such diseases. Cromwell himself is said to have died of a malignant ague, probably contracted at Whitehall.
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It is now an almost undisputed fact that Sydenham studied at Montpellier as well as at Oxford. French writers assert positively that he was the pupil of the celebrated physician, Charles Barbeyrac. This Barbeyrac had a wonderful reputation throughout the whole of France and other countries as a consultant. He was not connected with the university, but formed private classes amongst his students. It is said "some ten or twelve of them used to accompany him in his visits to his patients. On the way he would give them a sort of clinical lecture on the cases and their treatment, answering the numerous questions of his pupils with excellent judgement and fluency. His ideas about many diseases were entirely novel, but lucid and well-founded. His practice was admirable, being at once simple and easy. He had discarded a large number of the useless remedies employed before his time, which served only to embarrass the sick man; making use of a few only, but those well-chosen and efficacious. These he employed so well that no physician ever had more successful and striking results from his treatment."

Barbeyrac's bedside clinics must surely have had a great influence upon Sydenham's wonderful mind. Locke, Sydenham's great friend, who also studied at Montpellier, used to say that he never knew two men more alike in opinions and character than these two physicians. M. Bouteille, a Frenchman (1776), said that Sydenham had learned his cooling remedies in fevers (choses refraichissantes) of Barbeyrac.

The date of Sydenham's return from France is not known, but we have reasons to believe that he was back in London in 1661. His observations (published later) on the weather and diseases in London begin with this year. He obtained his license from the Royal College of Physicians in 1663. The coveted Fellowship never fell upon his shoulders. "From all we know of Sydenham," writes Payne, "we should conclude that he cared little about academical distinctions, and doubtless bore the privation with equanimity. And, in later years, when the same difficulties might not have stood in the way, he had ceased to care what letters he could write after his name. The more surprising fact is that he did, after all, think it worth while to take a doctor's degree so late in life; but of his motives in so doing we have no knowledge."

Sydenham, however, like others, had friends and enemies as well in the college. A certain Dr. Andrew Brown, an intimate of his, tells us that Sydenham had once complained to him that "he had only gained the sad and unjust recompense of calumny and ignominy, and that from the emulation of some of his collegiate
brethren and others, whose indignation at length did culminate to
that height that they endeavoured to banish him, as guilty of medi-
cinal heresies, out of that illustrious society.”

Some years after his return from Montpellier, Sydenham
was engaged in studying and investigating the epidemics of London.
Just about this time that terrible calamity known in history as the
Great Plague swept over London. It was another Black Death,
strewing the land with suffering, sick bodies and killing off young
and aged—at one time at the rate of seven thousand a week. The
plague swept away a whole cityful of people—the mortality tables
showing sixty-eight thousand, five hundred and ninety-six deaths;
statisticians claim that fully one-fifth of the inhabitants succumbed
to the deadly disease. It quickly spread towards Westminster.
The king and queen went to Oxford. The dreaded peril lay right
outside of Sydenham’s own door, and the cries of the suffering
stole into his study. Consequently, the doctor and his family
moved to Dorset, a little spot a few miles from London. Many
writers blame him for leaving London at this critical period. They
assert that, as a physician, he should have considered it his duty
to fight the disease in the dark valleys. Was it not a distinct loss
to medicine, they further ask? Might he not have added a strik-
ing and interesting chapter to the history of medicine? But
Sydenham had a wife and young children to pull at his heart-strings
and after all, the sick did not suffer for want of medical aid for there
were physicians in plenty around. He wrote, however, of the
plague, but his treatise did not make much of a stir.

Sydenham was not idle during those plague-stricken days.
He was busy with his pen during those months of absence from the
city, and produced his first book on the “Treatment of Fevers”—
a work of momentous importance to the course of medicine. The
treatment of a few acute diseases such as rheumatism, pneumonia,
and erysipelas, was also included. The title of the little book was:
“Thomas Sydenham Methodus Curandi Febræ, propriis obser-
vationibus Superstructa.” (Thomas Sydenham’s method of treat-
ing fevers, based upon his own observations). Fevers had a much
greater relative importance in his time than at the present day,
since he estimated that they made up two-thirds of medicine.
In our own day the same class of maladies, called in official returns
zymotic diseases, are credited with only one-tenth of the total
mortality from all causes. The book was written in Latin, as were
all Sydenham’s books, contained one hundred and fifty-six pages,
and was dedicated to the Hon. Robert Boyle, philosopher and man
of science. It was divided into four sections: (1) On Continued Fevers; (2) On Certain Symptoms which Accompany Continued Fevers; (3) Intermittent Fevers; (4) Smallpox. Very few books were written in English in those days. "Surgeons and quacks might write in English, but for an orthodox physician to do so would have been an act of bad taste almost amounting to a crime." Sydenham wrote a very beautiful preface to his book. It shows us in an instant the inner, sensitive, lofty soul of the man—his "religio medici"—the deep, sincere, religious undercurrent swaying all his feelings, and the noble, lofty ideals he set for himself in his life's own footpath. "Whoever applies himself to medicine," it reads, "ought seriously to weigh the following considerations: First, that he will one day have to render an account to the Supreme Judge of the lives of sick persons committed to his care. Next, whatever skill or knowledge he may, by Divine favour, become possessed of, should be devoted above all things to the glory of God and the welfare of the human race. Moreover, let him remember that it is not any base or despicable creature of which he has undertaken the cure. For the only begotten Son of God, by becoming man, recognized the value of the human race and ennobled by His own dignity the nature He assumed. Finally, the physician should bear in mind that he himself is not exempt from the common lot, but subject to the same laws of mortality and disease as others; and he will care for the sick with more diligence and tenderness if he remembers that he himself is their fellow sufferer."

Sydenham's book, it may be imagined, made quite a stir in those days of few books and fewer discoveries, for it contained much of vital importance to sick, suffering humanity. It was William Harvey's story, served again with extra trimmings by the critics. Some rose up and called him "blessed;" others—a certain Henry Stubbe principally—condemned him with scathing bitterness. This Stubbe, a physician at Warwick, had been at Oxford with Sydenham and enjoyed somewhat of a reputation as a Greek scholar. He assailed Sydenham's smallpox theory especially. Sydenham thought that smallpox was due "to a spontaneous effort of the blood to bring itself into a new state, and—putting off its native state by a process like moulding—to put on, as it were a new shape." Stubbe criticizes him thus in his lines beginning: "Whether Dr. Sydenham intends to ascribe sense, appetite and judgement unto the blood, I cannot well tell, but either he canteth in metaphors or explaineth himself in his general hypothesis about
Feavers as if his meaning were such. But it seems strange and irrational to attribute such an understanding to the blood, and to transmute a natural agent into one that is spontaneous, and, which is more, having represented it as such, to make it so capricious as not to know when it is well; but to run phantastically upon such dangerous changes as occur in putrid feavers and the smallpox, for even this last 'ariseth from a desire the blood hath to change its state.'”

To be sure the theories of a Sydenham do not look well now beside our own very modern ideas. He made the same mistakes of other contemporaries, but he left a strong foundation for a more perfect building than was to be evolved out of his own mental architecture. However, his book was well received. In the same year it was reprinted in Amsterdam, and Sydenham was by far better appreciated in foreign countries than in his own England. It was the eternal story all over again—the prophet forced to seek glory and appreciation under alien skies, far away from the familiar faces whose smile would have meant so much to him. Schacht, Professor of Leyden, recommended the work to his students. Ettmuller, of Leipzig, Spon, of Lyons, and Dolaeus, an encyclopaedic writer on medicine, often spoke a good and cheering word of “the fever-curing doctor.” In 1668, a second edition appeared, with an added chapter on the plague. On the first pages of the book appeared a long Latin poem, written by John Locke, one of Sydenham’s intimates—a word of praise for honest, conscientious research. We quote a few lines of the lengthy poem below:

“With Fever’s heat, throughout the world that raged,  
Unequal war has mourning Medicine waged;  
A thousand arts, a thousand cures she tries;  
Still Fever burns, and all her skill defies,  
Till Sydenham's wisdom plays a double part,  
Quells the disease and helps the failing Art.  
No dreams are his of Fever’s mystic laws,  
He blames no fancied Humour as its cause;  
Shunning the wordy combats of the Schools,  
Where an intenser heat than Fever rules.  

. . . . . . . . . .

Thy arms, Victorious Medicine! more intend,  
Triumphant, thou the unconquered Plague shalt end,  
Live, Book! while Fever’s vanquished flames expire,  
Thee and the world await one common fire.”

In 1676 appeared a third edition and in 1685, a fourth. Many revisions and other changes crept into the volumes. Numerous
observations on London epidemics from 1661-1675 were added. They contained lines on measles, quinsy, scarlatina, etc. "With all deductions," writes one, "this work will always remain one of the greatest of medical classics. The descriptions of many diseases and symptoms are so admirable and complete that they have never been surpassed nor are likely to be. Many flashes of insight and pregnant hints might be collected which contemporaries did not understand, and to which later knowledge is only able to do justice. Above all, the resolute endeavour to study natural facts by pure observation, putting aside the theories, facts and fictions collected out of books, which he says 'have as much to do with treating sick men as the painting of pictures has to do with the sailing of ships'—this endeavour, successful or not, will always be the best example of method to all students of medicine."

Up to this time, Sydenham's writings all referred to acute diseases. Requests now poured in from all corners, asking him to write something on chronic diseases. In 1680, he published his "Epistolæ Respensoriae duæ"—answers to some letters which he had received pertaining to the treatment of certain diseases. The first of the letters contains these charming lines. What a noble mind Sydenham must have had! "I have always thought," he writes, "and not without reason, that to have published for the benefit of afflicted mortals any certain method of subduing even the slightest disease was a matter of greater felicity than the untold riches of a Croesus. I have called it a matter of greater felicity; I now call it a matter of greater goodness and of greater wisdom. For what more abundant instance of wisdom and goodness can anyone display than (seeing his own share of our common nature) to continually refer such things as he has accomplished, not to his own glory, but to the advantage of the world at large, of which he is so small and contemptible a particle? I agree with that illustrious master of language and thought, my favourite Cicero, the leading spirit of his age, if not of the world at large, that 'as laws place the welfare of all men above the welfare of the individual, so a good and wise man, obedient to the laws, and mindful of his duty as a citizen, will think more of being useful to men in general than to any one or to himself.'"

In 1862, appeared another letter, "Dissertatio Epistolaris," addressed to Dr. Cole, of Worcester, an authority on apoplexy in his day. The letter deals in part with the treatment of smallpox and hysteria. Sydenham gives us an almost perfect picture of this common disease. "Tractatus de Podagra et Hydrope" appeared in
1683—a treatise on gout and dropsy. On the title page is a quotation from Bacon—Sydenham's favorite author: "Non fingendum, aut excogitandum, sed inveniendum, quid Natura faciat aut ferat" (We have not to imagine or to think out, but to find out what nature does or produces.) In this book, also, appears the following passage, so characteristic of Sydenham, which gives us a view along other lines, into the noble character of the man: "It is my nature," he says, "to think where others read; to ask less whether the world agrees with me than whether I agree with the truth, and to hold cheap the rumour and applause of the multitude. And what is it indeed? Is it any great thing for a man to do his duty as a good citizen, to serve the public to his own private loss, and to make no glory for doing so? If I take a right measure of the matter, I am now so old that to study my own reputation will soon be as if I studied the reputation of one who is not. For what can it profit me after my death if the eight letters which compose the name Sydenham should pass from mouth to mouth among men who can no more form an idea of what I was, than I of what they will be; of men who will know none of those (then dead and gone) of the generation before them; who will use other language and have other manners; such is the inconstancy and vicissitude of all things human."

The treatise on gout was by far the more important book of the two, and is looked upon as Sydenham's masterpiece. He himself suffered from the disease for thirty-four years. "The Gouty Physician," he was often called. No wonder, then, that he gave us so true a picture of the malady. "It may," he writes, "be some consolation to those sufferers from this disease, who, like myself and others, are only moderately endowed with fortune and intellectual gifts, that great kings, princes, generals, admirals, philosophers, and many more of like eminence have suffered from the same complaint and ultimately died of it. In a word, gout, unlike any other disease, kills more rich men than poor, more wise than simple. Indeed, nature, the mother and ruler of all, shows in this that she is impartial and no respecter of persons; those who are deficient in one respect being more richly endowed in another; her munificent provision for some men being tempered by an equitable proportion of evil. Hence, that law universally recognized that no man is 'ex omni parte beatum' nor yet, on the other hand, in all respects miserable. And this mixture of good and evil, especially appropriate to our frail mortality, is perhaps the best thing for our happiness."
In another part of the book Sydenham oddly says that the best beverage for gouty persons is "one which neither rises to the generosity of wine nor sinks to the debility of water, such as London small beer; but water, pure and uncooked, is dangerous."

Some writers have expressed surprise at not finding mention of Harvey and his great discovery anywhere in Sydenham's writings. Sydenham, as is well-known, paid little attention to anatomy and physiology. They were perfect strangers to him almost—unimportant as far as his own thinking went, and it is said that he often spoke of the researches made in these branches with contempt. But he did not, however, totally disregard anatomy. He held that a physician ought to know the structure of the human body. One writer has called him "one-sided" on this account.

In 1684, Hans Sloane, afterwards the founder of the British Museum, having completed his studies abroad, returned to London with a letter of introduction to Sydenham. The letter said in part that he was "a ripe scholar, a good botanist, a skillful anatomist." Sydenham read the letter quickly. Then he sent a hard look into the young man's face. "This is all very fine," he blurted out, "but it won't do! Anatomy—botany! Nonsense! Sir, I know an old woman in Covent Garden who understands botany better, and as for anatomy, my butcher can dissect a joint fully as well. No, young man, all this is stuff; you must go to the bedside; it is there alone you can learn disease."

"Schedula Monitoria de Novæ Febris Ingressu" (a sketch by way of warning of the approach of a new fever) was Sydenham's last work. It was published in September, 1686. The volume contained a chapter on calculus and a perfect description of St. Vitus' dance, chorea—the dancing mania of the Middle Ages. "Sydenham's chorea" it is called to-day in our modern text-books on medicine. In the closing lines of the book he states that he has now delivered nearly all that he knows respecting the cure of diseases.

In Sydenham's day, there was a certain Gideon Harvey, physician in ordinary to Charles II, a man of sound education, whose special delight it was to write scurrilous attacks on other physicians. Sydenham also fell a victim to his ridicule. He refers to him as "a trooper turned physician," and again as "a Western Bumkin that pretends to Limbo children in the smallpox by a new method." Very few escaped Harvey's caustic remarks, the anatomist and physiologist being both subjects of his burning, but witty criticism. Listen to him in the following lines—rather
an amusing picture of the doctor at divine service! "The church
shall no sooner be opened but 'ecce!' Mr. Doctor, sitting in the
most visible seat, Grave, Deaf, Dumb, and immovable as if an
Apoplexy of Devotion had seized him, out of which his Apothecary
is to raise him by knocking at half sermon at his pew door to fetch
him away post haste to a dying patient; by which means he draws
the eyes of the whole congregation after him; but instead of going
to the pretended House of Visitation they both drop into a cabaret,
there to pass the fatigue of a forenoon Sunday. This knack of
confederacy is to be repeated several days, until it hath made an
impression on the people, that he is a man of importance and of
great Physick business."

Very few pen-pictures of Sydenham's personality are at hand.
The following, by one of his biographers, may however, give the
reader an idea of his warmth of character; "Thomas Sydenham, as
we judge from his portraits, was of a large and robust frame, his
complexion reddish, his eyes gray, his hair first brown, afterwards
gray, worn long, in its natural state, with a wig. For his actual
features we refer to the portrait. We suppose him to have been in
his manner manly and simple, but, perhaps, somewhat rustic rather
than polished and conciliatory—more the manner of a Dorsetshire
squire and captain of horse than that of a courtly physician. He
was essentially a man of action when most physicians were men of
books. We can imagine him taking command of the sick room and
having his orders obeyed, with a rough word or two if things went
wrong. He undoubtedly gained the most complete confidence of his
patients; of this there is abundant evidence. But it would have
been by his plain honesty and benevolence and the ascendancy of
a strong nature rather than by pleasing and flattering. In his
treatment he was eminently straightforward."

Sydenham all his life remained a reader of books—Latin
principally. He called Cicero "the author I most admire as the
great teacher both in thought and language, the first genius of his
own and, perhaps, of all ages." Then there were Homer, Lucian,
Virgil, Horace, Juvenal, Seneca and others—all friends of his in
his silent hours.

It cannot be denied that Hippocrates, Bacon and Cicero, had
a formative influence upon Sydenham's writings. He adopted the
medical system of Hippocrates, and through all his writings one
comes across quotations from the old master—"the divine old man." But Sydenham went farther. He made new inroads into the un-
discovered fields of thought and observation. Others lay on the
hilltop, dreaming, filled with a sweet contentment; but he went down into the valleys to hear the strong, beautiful messages springing up everywhere like flowers in the springtime, and we know he learned many a secret from the willing lips of nature. In short, he was "the first who explicitly laid down the principle that diseases should be studied by the natural history method, like natural objects, without trying to explain them." Sydenham's idea was: "Investigate first, explain afterwards if you like; but remember that nature is always something very much greater than all your explanations."

Francis Bacon, "that great genius of rational nature," also lived next door to Sydenham's heart. Real man of science that he was, Sydenham always mentioned his name with great love and admiration. And, then, of course, there was Cicero, whom he loved deeply and read always. In this sketch it will also be interesting to touch, in passing, upon two of Sydenham's great friends—the real men of action who came in contact with him, whose heart-throbbings spoke to him more strongly than words could ever do. His most interesting friends without a doubt were Hon. Robert Boyle, great man of science, and John Locke, physician and philosopher and Fellow of the Royal Society. Boyle and Sydenham were about the same age; both were Baconian to their heart's core and both were wedded to original research. Locke was somewhat younger in years than Sydenham, but such a friendship as that which existed between these two great physicians must have certainly been a congenial one. They often extended to each other a helping hand in the preparation of manuscripts for publication.

Sydenham's last days were uneventful. He must have been the father of a family, for in his will we see mention of his two sons, Henry and James. We must conclude, also, that his home life was everything that could be desired, for he always speaks of his family in words of strong endearment. His wife, it is thought, preceded him, as there is no mention of her in his will. Provision is made, however, for her mother, Mrs. Gee. We have reason, also, to believe that Sydenham's professional practice was a large one and that he numbered many distinguished persons amongst his patients. Several attacks of gout and calculus helped to make his last days miserable. For years he dictated carefully, drove a great deal in the open air, and retired early. It is said of him also that often on an evening he could be seen at his open window in Pall Mall with a pipe in his hand, enjoying the solace of his usual smoke. Like Milton, his contemporary, he evidently loved the weed.
The last writing Sydenham did was on September 29th, 1686. "Although my advanced age and constitution," he wrote, then, "broken by continual maladies, might have seemed rightly to demand release from the labour of thought and intense meditation, yet I cannot refrain from endeavouring to relieve the suffering of others even at the expense of my own health." These were the opening lines in his "Schedula Monitoria"—his last work given to an anxious critical world. Then the ink in his ink-pot dried up, the pen rusted and the great physician laid it down forever. Death came to him quietly three years later, in his sixty-fifth year, December 29th, 1689, at his house in Pall Mall. Nearly a century and a quarter later, the College of Physicians, to perpetuate the memory of the gentle physician, placed above his grave a tablet bearing the following inscription:

"Prope Hunc Locum Sepultum Est
Thomas Sydenham
Medicus In Omne Aevus Nobilis
Natus Erat A.D. 1624,
Vixit Annos 65.
Deletis Veteris Sepulchri Vestigiis
Ne Rei Memoria Interiret
Hoc Marmor Poni Jussit Collegium
Regale Medicorum Londinense
A.D. 1810 Optime Merito."

The extensions which have been added to the Winnipeg General Hospital were formally opened September 29th. The hospital now contains 478 beds for patients. The new building, which is composed of 2 wings and a central portion, contains 135 beds in the public wards, 77 in the semi-private wards, and 38 private rooms. None of the wards in the new building contain more than 6 beds. The hospital was first organized in 1872, and it was incorporated in 1875.
SOME PSYCHIATRIC PROBLEMS FROM THE
GENERAL PRACTITIONER'S
STANDPOINT

By C. S. McVicar, M.B.

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It is not my purpose in this communication to introduce a new
idea. On the contrary, I wish to complain that there is so
little that can be called new in psychiatry. I have hoped that a
restatement of certain commonplaces may gain force from the time
and place of utterance, and direct attention to some problems in
psychiatry, that arise with frequency in general practice, and per-
haps encourage interest in a neglected field of medicine.

In the first place, and to put the subject as concretely before
you as I possibly can, I have to ask you to listen to a few brief ab-
stracts from case histories. I do not think I am in error in suppos-
ing that these, at least, will be considered commonplace, and that
each one of you will recognize in them the counterparts of many
cases occurring day by day in the ordinary routine of general prac-
tice. Two reasons prompt me to cite the case histories rather than
the labels assigned to them; one is that they are not all labeled,
and the other is that psychiatric labels convey so little information
to most of us.

Case 1. Mrs. A., age forty-four, living in a comfortable
home, happily married, has two children. She complains of hot
and cold flushes, lethargy, irritability, loss of appetite, lack of
ambition, tires easily. She thinks it is the "change of life."

Case 2. Mr. B., age thirty-eight, accountant, married, has
one child. Complains of weakness, always tired, cannot concen-
trate on his work, has no ambition, has peculiar sensations up his
spine, in the perineum, in his testicles, around his heart. During
the previous six months and in the absence of his wife and child
on a holiday trip to Scotland, he had gone to the office at nine

Read at the Annual Meeting, Canadian Medical Association, London, Ont.,
June, 1913.
o'clock in the morning and had taken the car home at midnight. He says he feels as though his heart was going to stop, and has frequent cold perspirations.

Case 3. Mr. C., age forty-two, builder, married, has one child, aged twelve. Two years ago had a two-year-old son die of congenital heart disease. One day he bumped his left knee in boarding a street car, inducing a moderate synovial effusion. During his enforced idleness, he complained that he could not sleep; he appeared confused and talked irrationally to his wife, saying that he did not want anything to eat, that there was no use in eating anyway, that there was no use in telephoning about his motor car, which was in a repair shop, as he would never use it. He told his business partner that they might as well quit building, as they would never sell the houses. He could not remember fifteen minutes after taking his food what he had eaten. A little light was thrown on this case later, as the patient volunteered that his present misfortune had recalled the tragedy of his life, viz., the death of his two-year-old son, in whose future all his plans had centred. To have lost this child made all else in life seem of no importance.

Case 4. Miss D., age forty-two, school teacher. I was called to see her at 2 a.m. because she had been vomiting violently. When seen, she refused to speak or open her eyes. Physical examination revealed nothing. Her friends said that she had had two recent causes to worry, one was that she had recently been given charge of a very difficult class, and the other was the unexpected marriage of a sister with whom she had lived for years; this marriage had made her feel alone in the world.

Case 5. Mr. E., age forty-four, a fine looking German, had for fifteen years worked late and early in building up a successful butchering business. One day he felt that something snapped in his head, and for three years he has sought relief from terrible headaches, from recurrent fears of impending death, from thoughts of suicide and a persistent incapacity to work. At times his mental distress is intense and he pleads with tears of anguish to be relieved.

Case 6. Mr. F., age thirty-seven, applied for examination for life policy of a large size. His speech showed a marked tremor. His memory was defective. When questioned as to his previous health, he stripped off his coat to demonstrate his powerful muscles. Further study proved him a well advanced general paretic.

Case 7. Miss G., age thirty, during convalescence from lobar pneumonia began to refuse food. She shut her teeth, closed her
eyes, refused to speak and resisted all efforts of her nurse to care for her. There was loss of sphincter control and general muscular hypertonicity. She was fed with a tube for a week and then opened her eyes and began to talk a little. When quite well she remembered that in her delirium, she fancied that she was being forced over the brink of Niagara Falls. She thought that when we attempted to open her mouth, that it was to allow the water to get in, so that she would drown.

Case 8. Miss H., age nineteen, youngest of a family of three girls, is a university student. She failed in her first year examination, but managed to secure first year standing at the end of two years. She is now preparing for her second year examination. She came to the office in my absence, and when told that I would probably be back in two hours, she said she would wait. When I asked her what she was complaining of, she said she thought she must be insane. She said she could not concentrate on her work. She had been reproved by an instructor for letting her fancy drift too far in an essay on Marlow. She said Marlow wrote vile stuff anyhow. She complained that no one seemed to understand her. Her professors were silly old things. Her conversation was disconnected and her deportment replete with mannerisms. A conference with her mother revealed that she had always been different to other girls. She was seclusive, subject to varying whims and sudden impulses. She showed frequent outbursts of temper. Her mother does not know what to do with her.

Case 9. Mrs. I., age thirty-eight, married. The husband of this patient seeks advice because during the past two years he has noticed that his wife has lost interest in her personal appearance. She appeared dreamy and would not talk. She became much concerned about her fancied ill treatment of her brothers and sisters, and arose early one morning to go and apologize for her conduct. The husband frequently comes home in the evening to find the breakfast table as he had left it, his wife having eaten nothing during the day; and usually she had not finished dressing. She complained of buzzing in her ears and stated that her neighbours were using wireless on her. On two occasions she telephoned the police saying there were burglars in the house. She refused to have a servant. Her letters were disconnected, full of unfinished sentences and repetitions. She was well nourished and looked more like a girl of twenty than a woman of thirty-eight.

Now during the past twelve months I have seen in private practice but one case of typhoid fever, and only one case of pneu-
monia. Yet all the cases abstracted above were presented during the month of April last, and are moreover only selections. What are we to do with such cases? Let us see what disposition is ordinarily made of them. A certain number who are dangerous to themselves or to others, or who cannot take care of themselves are cared for in institutions, that is, they are clothed and fed in asylums. Others are given tonic treatment, that is, measures are employed to improve their metabolism, it being presumed that improvement in their physical condition will bring about improvement in their mental symptoms. This line of treatment is carefully carried out in a few asylum cases and is aimed at by most physicians. A third group of cases are subjected to maltreatment by non-licensed quacks who promise to "adjust the cause" by magic manipulations. There are still a few who pass through the hands of licensed quacks who remove the ovaries of females, the varicoceles of men, and the hard-earned savings of both.

As general practitioners where are we to look for assistance in the diagnosis and treatment of mental cases? There are two classes of text-books available, one class written by men engaged exclusively in asylum work and the other by men who are not. Perhaps it is for this reason that so much confusion exists as to terminology and classification. It is this variety that is so puzzling, and the lack of a standardized classification is a most significant fact. It points to the necessity for more sytematized research.

The symptomatic classification of the Kraeplin school is interesting and is an admirable result of close clinical observation, but it lacks the precision in the relationship of cause and effect that is essential to prophylaxis and a guide to prognosis. Hippocrates left us an excellent clinical picture of tuberculosis, but Koch found the bacillus and directed investigation along practical utilitarian lines. Now that general paresis has become established as a separate disease on a basis of facts derived from its anatomico-pathological data, from its organic symptoms, and its etiology, the psychological symptoms have lost much of their importance. These symptoms seem to bring it into close relationship with almost all other forms of mental disease and may often lead to a mistaken diagnosis. The amount of pioneer work in the histopathology of paresis was enormous, but the recent discovery by Noguchi and Moore of spirochetae in the brains of paretics, justified just such research and furnished a stimulus to further investigation. The study of the aphasias seems one peculiarly adapted to the concurrent investigation of the psychiatrist and histopathologist, and
ought to determine something for both normal and abnormal psychology.

After a somewhat frigid reception it is noteworthy that the claims of the psycho-analysts are receiving more encouragement from earnest students. Investigation by psycho-analysis promises especially to bridge the gap between the so-called functional neuroses and the definite psychoses. At present the methods of investigation seem not without some danger. It is a matter of history that the introduction of the x-ray resulted in disastrous burns to both physicians and patients, but each season sees improvements added to this important diagnostic and therapeutical aid. If the psycho-analytic technique can be simplified, chastened and standardized, it will add to the number of workers, and more convincing data will be forthcoming on which to determine the merits of a promising means of study.

Our governments in recent years have made enormous strides in dealing with problems of public health. This is especially seen in the effort to establish machinery for prophylaxis in diseases due to microbic infection. They are able to work to advantage, because the causes are established by observation and experiment. In the matter of mental disease, our legislative bodies, because they have the custody of the material, are charged with the responsibility of investigating that material, and of keeping the medical profession informed as to their results. A great economic problem before the state is to prevent the development of mental illness, as it attempts at the present time to prevent the development of established physical diseases.

The duty of investigating demands not only the establishment of laboratories for anatomical physio-chemical, and psychologica investigation, but also the equipping of such workshops with men specially trained, who will carry on our proportionate share of the routine and the original work that is to make for progress in psychiatry. It is a matter of provincial pride that we can grow a great proportion of the food used in institutions on institution farms. We will be still more proud when we no longer have to impart so much of our scientific data from Germany and the United States. Simply providing a rule that all patients dying in institutions should be autopsied would be a great boon. Nothing is so discouraging as to have a case that has furnished years of clinical study carried away a few minutes after death by the long-lost friends.

The recent announcement of the Prime Minister of Ontario, that a commission is to be appointed to investigate medical educa-
tion and medical problems in general, is a welcome one. It is not too much to hope that they will commence right at home by increasing the facilities for education in mental diseases. This will mean that the staffs of hospitals for insane will have to be organized not only for administrative and custodial duties, but also for investigating and teaching purposes. Teachers must be furnished the opportunity of studying the best educational methods extant, by keeping in touch with the proceedings of societies, and the progress in other lands. In every other branch of medicine practical experience in the wards of hospitals is required by universities. The recent extension of the academic course to five years makes it practicable to require undergraduates to spend at least some portion of their fourth or fifth year in residence in asylums, where the daily study on the wards enables them to piece together the variegated clinical manifestations into completed pictures. The sustained personal acquaintance with a few cases well worked out would do infinitely more to create interest in investigation and confidence in treatment than any series of interrupted demonstrations, no matter how carefully presented. It is as necessary for every practitioner to have a working knowledge of psychiatry, as it is to have a working knowledge of infectious diseases. There can never be enough specialists in psychiatry to reach all the cases that occur. There are not enough now to give satisfaction in medicolegal cases.

In conclusion, I believe the following deductions are warranted:
1. That the incidence of cases showing a greater or less degree of mental illness is larger than we heretofore supposed.
2. That we are not fully equipped to deal with these cases.
3. That as a result of our lack of equipment cases are allowed to progress—where arrest or cure might be looked for.
4. That the best means for physicians to combat the evil of irregular practitioners is to equip themselves more thoroughly to deal with this class of cases, because they are cases upon which quacks fatten.
5. That the remedy lies in more searching investigation and more efficient education.
6. That a more efficient education would result in:
   (a) A great many cases being arrested before there is any need to send them to an insane asylum.
   (b) A great many cases now in insane asylums could be treated at home.
7. That the economic value of the question demands the fullest consideration by the State.
ON THE RELATIONSHIP BETWEEN TUMOURS PROPER (BLASTOMAS) AND HYPERBLASTOSIS

By J. George Adami, M.D., Sc.D., LL.D., F.R.S.

Montreal

TO-DAY more fully than ever before it is realized that to comprehend the abnormal we must first understand the normal. Thus it is that modern research into the etiology of cancer is more and more occupying itself with enquiries into the phenomena of normal growth. The results already gained from these enquiries render it timely to reconsider a particular form of overgrowth, to which German authorities have given the name "Riesenwuchs." This is so commonly regarded as blastomatous, as belonging to the tumours proper, that neither in English, nor, to my knowledge, in French, has an adequate term been so far afforded. Merely to translate the German term, and speak of "giant growth" conveys no well-defined meaning to the English mind. C. P. White, it is true, has labelled it "progressive hypertrophy," but this is a description rather than a name: I, too, have spoken of it as "blastomatoid" but the expression is adjectival and not substantive. And yet as I hope to show, this type of tissue overgrowth has properties so characteristic as to separate it sharply from the true blastomas, to necessitate its recognition as an order apart, and to demand a precise name whereby to ensure that recognition. Nay, I would say further that it is a notable aid to our understanding of the etiology of malignant growths to make this recognition.

Here to emphasize the distinction, it must be pointed out that judged by the many definitions that have been afforded of a "true" or autonomous tumour, our stereotyped conception of such is that it originates as a circumscribed overgrowth of cell elements, not exercising any function of service to the body, or at least becoming separate from the normal tissues in its physiological and functional relationships. Even if we cannot with Cohnheim regard it as derived always from a matrix of superabundant or erratic deposit

Communicated to the Pathological Section of the Seventeenth International Medical Congress, London, August, 1913.
of embryonic elements, we all, I think, are accustomed to accept Ribbert's view that it is self-confined, dependent upon the organism for its nourishment, but otherwise largely if not quite independent. That is our stereotyped mental picture of what constitutes the tumour proper.

Let me approach my subject from what may appear to be a novel, but what I believe to be the correct, standpoint.

The researches upon the functions of ductless glands pursued with increasing activity during the last twenty years have demonstrated in a wholly unexpected manner that sundry of these glands have a remarkable influence over the growth of particular tissues. This is now so well recognized that it is needless for me here to give a detailed statement. Briefly, the outstanding results are these:

1. That specific ductless glands and their internal secretions influence the growth, not of all tissues equally, but of particular tissues. Thus the experimental removal of the whole of the anterior portion of the pituitary is associated with defective growth of the bones, whereas per contra, excessive development of the anterior portion of the same gland is associated with excessive growth of bone. Overgrowth of the adrenal cortex is more particularly associated with premature development and overgrowth of the organs of generation. Hypoplasia of the thyroid is associated more particularly with overgrowth of the subcutaneous connective tissue: hypopituitarism with localized or generalized adiposity along with genital deficiency.

2. Such overgrowth or arrest of growth of particular tissues may have associated with it a coincident overgrowth of associated tissues and parts. In the case of gigantism associated with excessive development of the anterior portion of the pituitary, we find coincident increased development of surrounding tissues; along with the premature development of the essential organs of generation seen to accompany benign adenomatous tumours of the adrenal cortex, we note an over development of the secondary organs of generation, as also of the muscular system. But this associated growth must be regarded as secondary and coordinate. In each of these cases we are struck by the fact that one particular tissue shows excessive growth, whereas other associated tissues while presenting increased growth, have that growth proportioned rather than over-proportioned to the excessive development of the particular tissue.

3. While recognizing thus that excess or defect of particular internal secretions exercises this specific action on particular tissues,
it is noteworthy that the particular tissues do not present a universal hyperplasia or hypoplasia throughout all areas of their distribution. In acromegaly for example, it is the bones of the face, hands, and feet, that are more particularly involved; in pituitary gigantism the bones of the limbs show excessive growth rather than those of the trunk. Let it be admitted that mechanical and other possibly deeper reasons exist for this regional overgrowth of one or other tissue. Let us even admit that, as has been suggested, in acromegaly it is a plethora of blood supply, or an activity of the blood-forming organs, in short a primary hæmic change that induces bony overgrowth; it still remains that under the influence of altered internal secretions the growth of one or other tissue is seen to lack proportion as regards the relative regional development of that tissue, just as it lacks proportion as between that tissue and the other tissues of the body.

From this group of cases we pass to another so similar in basal properties that we must, I think, conclude that it is of the same type, the group namely to which it has been customary to limit the name "Riesenwuchs." Of this the most typical example is adiposis and the allied conditions. Even where adiposis is generalized every pathologist is forced to recognize that there is an individual variation in the laying down of the fatty tissue. Some cases, for instance, presenting a large panniculus adiposus exhibit but a meagre deposit of fat in the mesenteries and omentum; and vice versa. We encounter, however, striking examples of local overgrowth of the fatty tissue. I need but recall the symmetrical lipomatosis seen more often in males, involving it may be especially the neck, the submaxillary, or parotid region, but in other cases seen in the mammary region, the perineum and scrotum, or the inguinal region. With these must be noted the characteristic distribution of the fatty overgrowths in Dercum's disease (adiposis dolorosa). While these may be nodular in type, more frequently the deposits while localized are diffuse over the supraclavicular, inframammary and lower scapular regions. How regional is this distribution is frequently noticeable in the extremities when, to quote Sir Dyce Duckworth, "the hands appear to come out as from a cuff, and the foot from a pantaloons." To the same order belongs the remarkable group of perirenal, retroperitoneal and mesenteric lipomas, so-called. These are one and all overgrowths of the fatty tissues normally present in these regions. They are not, let me emphasize, blastomas proper. They are diffuse hyperplasias which only from their extreme extent give the impression of being distinct
tumours, but if carefully examined they are seen to respect the boundaries of the normal tissue, and in fact to pass imperceptibly into the normal fatty tissue around, without any sign of limiting capsule. They cannot be regarded as autonomous, independent developments: they do not come within the accepted definitions of tumours proper, or blastomas. They are conditions of hyperblastosis, that is to say of the state of hyperplasia of an individual tissue.

As I say, these localized regional overgrowths of fatty tissue constitute the type example of "Riesenwuchs," but what is of particular interest for the development of my thesis is that as a class they appear to be due not to any local irritation, but to internal secretory disturbances, to some lack of equilibrium between the internal secretions, resulting, as in our previous group of cases, not necessarily in a generalized, but in a regional overgrowth of this particular tissue. Notably in the case of Dercum's disease, almost every case which so far has come to autopsy has been characterized by thyroid or pituitary changes or both, while conversely, if I may so express it, we have the authority of one whom I may term the leading authority on obese states and their treatment—Chune Fletcher—that administration of thyroid extract is the one method of treating Dercum's disease that yields favourable results.

Passing to the other members of this group it is true that so far we possess no distinct evidence that they too are associated with internal secretory or metabolic disturbances. Anatomically, however, they present the same general characteristics, and this in so striking a manner that we are forced to consider them as belonging to the same class. Let me enumerate rapidly the more important members, only treating with somewhat more detail conditions which while not generally included as coming under this category not only, I hold, are rightly so included, but find their proper place and proper relationships when so included.

One prominent and characteristic sub-group is in association with the nervous system. In this belongs a most striking form of "Riesenwuchs," which until recently has been regarded as a fibromatosis. I refer to that condition of multiple subcutaneous and perineural growths to which so many names have been given: molluscum fibrosum, multiple neurofibromas, neuro-fibromatosis, etc. The observations of Durante, Kohn, Bard, and Verçay taken together, demonstrate convincingly, I think, that these growths are hyperplastic developments of the cells of the sheaths of Schwann, of cells, that is, of neuroblastic origin. These over-
growths beginning often in early life, and developing slowly over long years, respect the normal boundaries of the nerve sheaths, merge imperceptibly at either pole, without defining capsule, into the tissues of the nerve along which they have developed, and in every respect conform in their properties with the multiple fatty growths already enumerated. Closely allied embryogenetically is the condition of gliosis or gliomatosis. Here we have the same slow progressive growth, the same diffuse nature and lack of delimitation; indeed, my own experience leads to the conviction that the majority of the so-called gliomas belong to this category. What is perhaps most well marked example of this condition is seen associated with, and apparently underlying the condition of syringomyelia.

Passing over certain less important examples such as leiomyosis or leiomyomatosis (which, I would point out, is the more correct nomenclature for what gynaecologists and modern text-books wrongly term adenomyoma of the uterus), and endotheliosis (such as is seen notably in the spleen in Gaucher’s type of splenomegaly, and some cases of Banti’s disease),* I would at greater length call your attention to a most important group of hyperblastoses, those, namely, affecting the lymphatic tissues and the bone marrow.

That I may not be accused of forcing my point, I would here quote the description of one of these allied conditions given by a recent writer whose position is sufficiently indicated by the fact that my quotation is taken from the “Referat” which he was invited to give before last year’s meeting of the Deutsche Pathologische Gesellschaft. “The lymph nodes,” states Professor Eugen Fränkel, “are liable to be most intensely affected, swelling up into huge packets, and when it is the more superficial lymph nodes that are involved, an immediate diagnosis can be made. Often enough at autopsy it is determined that besides the peripheral lymph nodes the internal collections are implicated: those at the hilus of the lungs, in the mesentery, in the retroperitoneal tissue, exhibit similar change. It is in no wise necessary that the nodes throughout the body are involved to the same degree, although total exemption of one or other group is scarce ever observable. . . . The spleen also shows in general a notable increase

*There can now be no question as to the functional, or indeed, superfunctional nature of this striking overgrowth of the sinus cells in the spleen, since Banti has demonstrated that operative removal of the organ terminates the anaemia: prevents, that is, the excessive destruction of the red corpuscles.
Indeed at times the enlargement of this organ predominates to such a degree that the lymphoid enlargement passes relatively into the background. Cases, however, are not infrequent in which the spleen remains small.” And Fränkel points out that microscopically we deal in these cases with what is purely a hyperplasia of the lymphoid tissue. This is a description of the condition which from a primary misfortune in nomenclature, from fastening the attention upon the outcome, rather than upon the underlying state, has for years been a source of confusion: the condition, namely, described by Cohnheim as Pseudoleukæmia, by others as aleukæmic leukæmia, or as the pre-leukæmic stage of leukæmia. For now many years my teaching has been that lymphatic leukæmia is a blastomatoid condition* and I willingly accept as the preferable nomenclature that supported by Aschoff, Schridde, Hirschfeld and Nägeli, namely, lymphadenosis or lymphadenia. The time, indeed, has come, when for clear thinking, the term leukæmia should be relegated, by clinicians and pathologists alike, to its proper symptomatic rank: we should speak of lymphadenosis with or without leukæmia, distinguishing, I should add, between lymphadenosis (lymphatic leukæmia) and myelosis (myelogenous leukæmia). For what is true of the lymphoid tissue proper obtains also in respect to the elements of the bone marrow; these also may undergo diffuse regional hyperplasia, with the complication that in the marrow there exist elements of more than one type, and one or other of these may exhibit hyperplasia. Thus in general lymphadenosis the lymphocytic or lymphoblastic elements of the bone marrow may be coincidently involved. In what I think we may term myelosis proper (myelogenous leukæmia) it is the myelocytes that in the main are hyperplastic, and this to such an extent that the immature myelocytes are discharged into the blood stream, and at times, such is the stimulus to the formation of this type of cell that organs like the spleen and liver resume the power they possessed in embryonic life, and once again become the site of myelocyte production.

The limitations set to communications before this Congress, forbid that I should do more than sketch the broad outlines of my subject. I can merely state that lymphadenosis (leukæmic and aleukæmic lymphatic leukæmia) and myelosis (myelogenous leukæmia) are system diseases, hyperblastosises of the lymphoid and myeloid tissues respectively of the whole organism, which

under the influence of localization and regional intensity of the process in the different areas of the body, are apt to induce numerous variations in the facies of the disease. Saying this it is necessary, parenthetically, to exclude Hodgkin's disease from this group of hyperblastoses: with the majority of recent workers, I regard this as of irritative and chronic inflammatory origin, as a lymphogranulomatosis.

We must now pass on to the consideration of another feature of these hyperblastoses, which for the sake of clearness I have so far studiously kept in the background. I refer to their liability to present malignant change. This may exhibit itself either as a primary or a secondary phenomenon, and may be of localized origin or generalized. It is characteristic not only of the lymphadenoses and myeloses, but of the hyperblastoses as a group, that instead of the constituent cells being of fully formed adult type, they may either locally or diffusely exhibit actively vegetative or "embryonic" characters. This, after all, is only what might be expected from what we know of the general phenomena of growth: it is the cell that has normal relationships that is most apt to attain, and to retain complete differentiation. Hyperplasia connotes cell proliferation, and where two cells take and retain the place of one, one, if not both, of those cells must fail to preserve the normal relationship to nutrient vessel, stroma, etc. Hyperplasia thus favours anaplasia of at least a portion of the cell elements of the affected part. Thus we find that a portion of, or all the cells of a gliosis may take on a more sarcomatous type (I use the term here strictly in a histological sense); areas of a liposis (e.g. of a retroperitoneal "lipoma") or of a leiomyosis may become sarcomatous, and as regards the myeloses and lymphadenoses, we observe a very interesting set of conditions.

The so-called multiple myeloma, for example, has all the features of a hyperblastosis—excessive development occurring in certain bones only, and absence of limitation save by the natural boundaries of the involved areas—with this in addition, that the constituent cells are of "embryonic" character, so embryonic that here and there they are liable to exhibit active malignancy, and may not merely absorb the bony trabeculae but may infiltrate the periosteum and surrounding tissues and even, if rarely, may give rise to metastases in other organs at a distance, or to quote Berlinger, "myeloma is becoming to an increasing extent regarded as a systemic disease of a malignant type." So vegetative is the type of cell in many of these cases that, as well known, there is
active debate regarding their origin, whether they belong to the lymphoblastic or to the myeloblastic type. The indications appear to be more and more convincing that there may be a specific hyperblastosis involving each distinct element of the bone marrow—the lymphoblasts, the myeloblasts, and the erythroblasts (as in Ribbert's well-known case of megaloblastic overgrowth which he held to be an erythroblastoma (more accurately an erythroblastoma).

Of peculiar interest in this connection are the more recent observations upon Chloroma. Here there are the same regional ill-defined overgrowths most often occurring in early life and involving particularly the skull, ribs or sternum. Constantly where the blood has been examined, the picture has been that of leukæmia, with predominance of the large or relatively large non-granular mononuclear cell, although in a small proportion of cases there has been granular mononuclears. The picture has been that of either acute lymphatic or of acute myelogenous leukæmia. By the employment of the oxidase (indophenol) test* which differentiates between lymphocytes and myelocytes, my colleague, Professor Burgess, has demonstrated clearly that the marrow growths and the characteristic blood cells in this condition are myelogenous, not lymphogenous. The condition is a myelomatosis, or to use ordinary terminology an "acute myelogenous leukæmia," and confirming Schultze, Longcope and Cooke, and others, Burgess points out that cases of so-called acute lymphatic leukæmia with "large lymphocytes" are truly cases of acute myelogenous leukæmia (or strictly of acute myelomatosis with leukæmia).†

Parallel to these conditions affecting the bone marrow of particular localities with their liability to malignancy, we may cite the not infrequent mediastinal tumour, which originating in the thymus (and perhaps sometimes in the mediastinal lymph nodes) shows a striking liability to become locally malignant, infiltrating all the surrounding tissues.

From these intermediate forms we pass on by imperceptible

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† Note: I must, however, disagree with my colleague in regarding leukæmia as a blood metastasis. The symptom, leukæmia is not an index of malignancy: the discharge of leucocytes into the blood is not of the nature of a malignant infiltration: on the contrary it is best regarded as the outcome of chemiotactic phenomena, as an attraction of marrow cells by something circulating in the blood. There may be extensive lymphadenosis or myelosis without leukæmia, or leukæmia may be present for a time, and then disappear—and reappear.
gradations to cases of primary malignant hyperblastosis, to cases of diffuse lympho-sarcomatosis and myelosarcomatosis.

If the views here laid down, and the relationships of this group of conditions be correct, we arrive at certain interesting conclusions. Namely, and first, that whatever be the essential cause of the autonomous blastomas, we have in these hyperblastoses a group of diffuse overgrowths which by analogy must be regarded as due to disturbances of metabolic equilibrium; which, further, in their simple non-malignant stages at least, may possibly be combatted eventually (certainly not to-day) along the lines of organotherapy. Secondly, that every transition is observable in this series between the development of overgrowths of fully differentiated tissue, non-malignant grades of anaplasia, and diffuse malignant infiltrative growths. This suggests strongly that the causation of malignancy is not to be sought for in the entry and action of external agencies, but in stimulation of the growth properties of specific tissues by changes in what I may term tissue equilibrium. And lastly, that the more we study, the more we become impressed by the fact that the number of conditions of hyperblastosis, whether simple or malignant, is relatively considerable, so considerable as to deserve separate consideration.

A new hospital was opened at Powell River, B.C., in September. This hospital, erected by Andrew Henderson, is a handsome two-storey building, occupying an elevation overlooking the beautiful village and harbour of Powell River. It is capable of accommodating twenty-five patients without overcrowding. There are two commodious surgical and medical wards and a number of private wards. The operating room is fitted up in accord with modern ideas.
THE CANADIAN MEDICAL

NOTES ON HUNTINGTON’S CHOREA

BY GEO. A. SHANNON, M.B., SPARTA, ONTARIO

The following notes are based upon an examination of the records of four generations of two unrelated families, each descended from a choreic ancestor, and upon a personal acquaintance during many years, with twenty-four adult members of these families.

The present day conception of hereditary chorea is that presented by Huntington in his classic paper published in 1872, and but slightly modified by other investigators in the forty years since its publication. In these notes I have taken particular care to verify statements made concerning cases that appear to differ from the commonly accepted description of the disease.

The total number of persons included in the two families is ninety-nine, of whom thirty-five are children or have died before reaching maturity. Both groups originated in the Eastern States, the choreic ancestress of the one having been born in Eastern New York in 1780, where she died forty years later; and the choreic progenitor of the other being a native of New England, whence he emigrated to Ontario early in the last century. It will be remembered that Huntington’s material was found in Long Island.

Ten cases of hereditary chorea occurred in the four generations, and there are not wanting evidences of subnormal nervous equipment affecting the whole group. I know them to possess a smaller mental endowment than the average. Perhaps a more positive indication of defective nervous machinery is this, that among these twenty-four adults there is one case of epilepsy major, one of epilepsy minor, one of tic affecting the platysma, one of chronic insomnia, one of choreiform movements lasting about one year and followed by recovery and three of a distinctly degenerate type. There exists in both families a familial heteromorphic neurosis, one phase of which, one might say, is Huntington’s chorea. Contrary to what appears to have been observed in other choreic groups, there have been no instances of suicide or attempted suicide or of acts of violence. In view of the hopeless misery of those in the later stages of the disease, and the ever-present dread that one’s relatives or children may be tainted, it does not seem to me other than normal for any of these persons to consider suicide.

as a means of relief. As a matter of historical interest a member of one of the families was executed here (in London) in 1838 for complicity in the McKenzie Rebellion. Unfortunately for this man, the medical expert had not yet been evolved.

To study the choreic individuals of these families it seems better to group them under various etiologic and symptomatic heads than to attempt to study each patient separately, and that method has been adopted here. I note first that sex as an etiologic factor was in this series of no import, five of the affected persons being of one sex and five of the other.

As to the age at which the disease became manifest, one patient was choreic at thirty, one at twenty-six, two at twenty-four or twenty-five, one in early childhood; the other five are not determined, but none exceeded thirty years. The average of the nine adult cases was twenty-eight years. The statement that in successive generations the onset of the disease is delayed is not borne out by this group of patients. The case which occurred in early childhood, noted above, deserves special consideration, since the literature with which I am acquainted does not contain many references to instances of this kind. In Osler’s “System,” for instance, reference is made to but one case and doubt is expressed as to the true character of the disease.

This child was the daughter of a choreic father, and exhibited choreiform movements as early as the fourth year. She was at this time of average height and weight but there was mental dulness. Speech was delayed until the third year, and walking until the fifth. From the fifth year until her death at nine years and five months, the chorea was steadily progressive so that towards the end of her life she was unable to walk or to feed herself, from loss of muscular control, and her speech became unintelligible except to those who had the care of her. During the last two years of her life she passed the daytime tied in an arm chair to prevent falling. The mental powers deteriorated to imbecility. There was indifference as to soiling by faces or urine. At this time she was thin and anaemic. Death occurred as stated, at nine and a half years. I am unable to distinguish this case from one of Huntington’s chorea.

Age at death. Five females died at forty-five, forty-five, forty, thirty-five, and ten respectively, and four males at sixty-five, sixty, forty-five and forty-two; the average of eight cases in the adult being forty-seven years. Important factors in determining the length of life were neglect and intercurrent disease. In three instances, the condition in which the choreic lived was revolting in the extreme. One patient, dying as late as 1885,
lived for months in a locked room without adequate toilet accessories, and received his food on the floor. The role played by intercurrent disease in this series cannot be accurately determined. Solicitude for the well-being of a defective is a very rare virtue in my experience. It is significant that the average duration of life in the males was twelve years longer than in the adult females.

**Heredity.** The Mendelian law of dominant inheritance was followed by nine patients, each of these having a choreic father or mother. Jelliffe has stated very recently that there is now adequate evidence to show that this rule is invariable in hereditary chorea. But I have now under observation a patient, who, I think, is an exception to it. His mother is forty-four and apart from a chronic insomnia is in fair health. His maternal grandfather had choreiform trouble of some sort for a year during adolescence, but recovered, and died of cancer at the age of seventy. The great-grandfather died of chorea. This young man, aged twenty-six, a farmer, has had the common diseases of childhood but no serious illness, and is now in good health apart from the condition noted below. The physical senses are normal. He is below the average in intellect and from the cranial conformation, and the facial expression is obviously of a degenerate type. He has irregular twitching of the muscles of the face and neck, and of the shoulders and chest, persistent during his waking hours. The movements are most marked in the face and neck, and are accompanied by an audible "sniff" repeated at intervals varying from a few seconds to one or two minutes. The movements are of sufficient intensity to produce a shrugging of the shoulders and a noticeable shake of the upper half of the body. Neither speech nor gait is affected. There is no tendency to recovery. On the contrary the symptoms are now more marked than they were three years ago. The differential diagnosis is as between hereditary chorea and habit spasm.

Of the ten choreics under consideration five married. There were no children of one union, and of the other four, twenty children were born, of whom seven, or 35 per cent., were choreic.

**Nomenclature.** Since there are at least five diseases, each distinct as to etiology, morbid anatomy, symptoms and prognosis, all included under the name chorea, a revision of the nomenclature seems to be needed. That the present nosology leads to error is well shown in the list of causes of death issued this year by the Registrar-General of Ontario. This list is in accordance with the International List adopted at Paris in July, 1909, and in it chorea is used as the name of a single disease, without any qualifying word or words. It is number 72.
DISEASES OF THE THYROID GLAND VIEWED FROM THE STANDPOINT OF THE SURGEON

By A. J. Ochsner, M.D., LL.D., Chicago

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The following considerations were based upon a study of the literature which the preparation of a book on this subject necessitated; upon the clinical observations of an enormous number of patients suffering from thyroid disease of every variety; and upon a personal experience of more than eight hundred cases operated upon by me for the relief of various forms of thyroid disease.

Little will be said of simple enlargement of the gland due to various causes because the removal of such a gland for the relief of pressure or deformity or obstruction to trachea or esophagus, or for the relief of discomfort due to the weight of the tumor, differs in no way from the operation for the result of Graves' disease, to be described and illustrated with steroptican views presently. For the relief of inflammatory disease the treatment does not differ from that applied to other inflammatory conditions.

Malignant disease is beyond permanent surgical relief when it has advanced sufficiently to make a diagnosis possible. In my own experience several patients have remained free from recurrence in whom a carcinoma was found upon making a microscopic examination of a thyroid gland removed for what was supposed to be a non-malignant condition at the time of the operation; but of those in whom a diagnosis of malignancy was made before the operation there have been no permanent cures. The same experience has been reported by many other surgeons. The only case in which there is apparently a permanent cure is one reported by Prof. Gluck, in which the disease which was primarily located in the larynx had extended to the thyroid gland and in which he had removed both the larynx and the thyroid gland, the patient having

remained in excellent health for a period of seven years when the case was reported.

Consequently it will be best not to discuss the surgical treatment of these conditions more fully, for the time at my disposal can be used to a better purpose by concentrating upon the surgical aspects of Graves' disease, at present a very live subject. At the onset it may be best to state that the surgical treatment of Graves' disease can apply only to those cases in which dietetic, hygienic, and internal treatment has been carefully and systematically tried. By this I do not mean treatment with remedies, but more especially treatment with absolute rest. And this again should not mean only physical rest but also to the fullest extent mental, nervous, and above all emotional rest, in a restful atmosphere with restful surroundings. The diet should be carefully supervised and should be composed chiefly of milk, cream, buttermilk, cooked vegetables, cooked fruits, and fruit juices and eggs. No meat should be given and absolutely no tea, coffee, or alcohol. Tobacco should not be used.

A few remedies like phosphate of soda, hydrobromate of quinine, and belladonna may have some value, but under no condition should iodine in any form, or thyroid extract, or desiccated thyroid gland be given. Personally, I have seen several deaths as a result of the administration of these remedies in patients who undoubtedly could have recovered, had their condition of hyperthyroidism not been increased to a fatal dose by the addition of these remedies.

Taking then a case in which internal, dietetic, and hygienic treatment has been carefully tried and has failed, we may reasonably consider it a surgical case. It is not necessary here to dwell upon the diagnosis except to say that the symptoms should be recognized early and that when any one of the typical symptoms is discovered during the progress of an examination, the greatest care should be exercised to make a diagnosis before the patient has been exposed to the harmful effects of hyperthyroidism for a sufficient period to produce serious injury, especially to the circulatory, the nervous and the muscular systems.

The symptoms do not always appear in the same order, but in a general way they are likely to be grouped in the following order although in many cases some of these symptoms may never occur. Taking for granted that a careful diagnosis has been made and that the treatment with rest, diet, hygiene and remedies—possibly including the serum treatment—has failed, should we operate upon
all cases of Graves' disease, and when should we operate upon them? Landstrom has demonstrated positively that all degenerative changes which have taken place in the tissues as a result of hyperthyroidism are permanent even after the diseased gland has been removed. A dilated heart for instance will never be reduced to normal, although it may come down to nearly a normal number of beats per minute simply because the irritation due to the presence of an excessive amount of thyroid secretion in the blood has ceased with the removal of the secreting organ. If an unusual strain is put upon such a heart by some form of over exertion, it will, of course, suffer because of the weakness of the muscle which has resulted from the long continued exposure to the thyroid poison. It is consequently of great importance to operate as early as possible upon these cases after it has become clear that rest, hygiene, and diet have failed to cure.

We must, however, bear in mind that there is a form of physiological hyperthyroidism. The thyroid gland seems to have the power to work ahead as it were to prepare the body for an emergency. For example during pregnancy when the mother must produce the bony skeleton of the fœtus and the soft portions of its body, during puberty when the pelvic portion of the skeleton grows very rapidly. At these times there is a physiological hypertrophy of the thyroid gland, and a physiological form of hyperthyroidism is apparent, a tendency for the thyroid gland to keep up its balance for the trophic changes which are unusually extensive at these times. So long as this balance is maintained everything goes well, but if the balance is upset in favour of non-physiological hyperthyroidism, then the various well-known symptoms of Graves' disease may begin to appear. These may be limited to a mild tremor or tachycardia, or both, which may remain for a time and disappear or they may continue in a mild form for a long period of time without being recognized as indicating a definite disease.

On the other hand the effects of this loss of balance may progress to so marked an extent that many or all of the characteristic symptoms may become apparent, making a positive diagnosis easy.

These symptoms usually come on in the following order, but they may appear in any order; indeed different individuals seem to have different portions of the body upon which this poison has a selective action; but in most cases the symptoms, if followed from the beginning, are likely to take the following order: tachycardia; enlargement of some portion of the thyroid gland; muscular weak-
ness; nervous excitability; exophthalmos; pulsation of thyroid gland; mental deficiency; vertigo; Grafe's, Stellwag's, Moebius', and Byrne's signs; intestinal symptoms, nausea, vomiting, diarrhoea; intermittent dyspnœa; sweating. All of these conditions are increased by physical, mental, or emotional fatigue and also by taking extract or iodine. These remedies are so dangerous that they should never be given experimentally. In advanced cases one commonly encounters emaciation, anaemia, oedema of eyelids, and general oedema and pigmentation of the skin. The blood shows an increase in the lymphocytes and a decrease in the polymorphonuclear leucocytes.

In the year 1884, von Rehn observed in two cases, in which he had removed goitres that had marked symptoms of Graves' disease before the operation, that these symptoms subsided to a marked extent after the patients had recovered from the operations. Two years later Moebius advanced the idea that Graves' disease is the result of a hypersecretion of the enlarged thyroid gland and that the proper treatment of this condition must consist in reducing this secretion.

Before this time the presence of Graves' disease was looked upon as almost an absolute contraindication to any operation, and especially to an operation upon the thyroid gland. From this time on, however, surgeons in various countries began to operate upon these cases. I performed my first operation for this condition in 1891, twenty-two years ago. The patient's pulse which rarely dropped below one hundred and forty beats per minute during a physical examination before the time of operation, as a rule has remained below eighty since that time.

Before speaking of the features of the operation itself which have an important relation to the success of surgical treatment, it is well to refer to the importance of selecting the proper time for operation. In the first place, it is not proper to operate on cases whose hearts are hopelessly dilated as a result of the poisonous effect of long continued hyperthyroidism upon the muscles of this organ. Such cases can live a little longer if treated with rest, while they will not be benefited if they recover from the operation, and they are not likely to recover.

The next class, however, is the one which taxes most severely the good judgement of the surgeon. Most cases of Graves' disease have periods of exacerbation of hyperthyroidism. If an operation is performed near the height of these exacerbations these patients are exceedingly dangerous risks, but if one waits until this paroxysm
has passed the operation can be performed with comparative safety. It also requires much judgement to recognize what might be called a reasonable margin of safety. Many of these patients will safely pass through a slight operation consisting of the ligation of one or two sets of vessels, when they would not live were one entire lobe removed. In severe cases one is especially tempted to do too much by removing one entire lobe together with the isthmus and a portion of the other lobe. It is much better to operate in two or three or even four stages than to transgress the margin of safety.

It is extremely important to reduce the amount of traumatism to a minimum. There can be no doubt that there is a greater degree of post operative hyperthyroidism in cases in which the surgeon has inflicted much traumatism during the operation than in those in which the slightest possible amount of injury has been done to the tissues.

Again, it is well to refer in a general way to the importance of careful dietetic and hygienic after-treatment. I have been consulted by a great many patients who had been operated upon elsewhere, who had considered themselves well a short time after the operation and consequently had returned to their vicious mode of living, with the result that they appeared as hopeless physical, nervous and in some cases also mental wrecks.

Most of these patients originally might have avoided the disease had their diet, their habits of life, their hygiene, and their environment been different. The after-treatment should prevent them from falling into their former errors; late hours, social duties, family troubles, business worries, the use of tea, coffee, tobacco and alcohol are among the worst enemies of the patient who has recovered from a thyroidectomy. This should be thoroughly impressed upon them. They should also be warned against becoming constipated. Autointoxication works badly with these patients. Very high altitudes and all forms of physical, mental, and emotional exhaustion must be prevented. I give each patient short concise written instructions in all of these directions.

The first point to be considered in connexion with the operation is the danger from anaesthesia which consists, first, in the anaesthetic itself; second, in the danger from asphyxiation due to accumulation of mucus in the larynx; third, in the danger from post operative pneumonia.

Some years ago, Moebius expressed the opinion that the harm to the patient from nervous excitement due to being awake during
the operation performed under local anaesthesia is greater than the harm done by the administration of ether. I am confident that this position is correct and for this reason we now give ether by the drop method regularly in all cases of thyroidectomy. By employing the following plan we avoid all of the objectionable features.

Half an hour before beginning the administration of the ether a hypodermic injection of $\frac{1}{4}$ of a grain of morphia and 1-100 of a grain of atropin is given. This relieves the patient of all anxiety and excitement. Ether is then given very slowly by the drop method (first introduced in my clinic twenty-two years ago) until the patient is thoroughly anaesthetized. Taking 70 to be the normal pulse beat, the excess is usually reduced from 25 to 35 per cent. during the operation, that is to say if the patient's pulse beat was 150 before the operation, it is usually reduced to from 130 to 110 during the operation and it frequently remains as low or lower during the period of convalescence. After the patient is thoroughly anaesthetized, the head of the table is raised to an angle of 45°, the jaw is held forward by a reliable assistant, the mouth and nose are covered with eight thicknesses of gauze to prevent the patient from breathing microbes into the wound and the operation is completed without the administration of any more anaesthetic. This reduces the amount of anaesthetic used to a minimum.

The morphia keeps the patient from being sensitive to the instruments, the atropin prevents the accumulation of mucous. The elevation of the head produces a certain degree of cerebral anemia which aids the anaesthesia. The haemorrhage is also reduced by this position. When the operation is completed the patient has breathed out most of the anaesthetic and when the head is lowered she is usually awake and may be put to bed in a semi-sitting position. This virtually eliminates the tendency to pneumonia.

It is important to plan the various steps of the operation so that each vessel can be caught between two pairs of forceps before it is cut in order to reduce the loss of blood to a minimum and at the same time to prevent soiling of the wound surface which retards the future steps of the operation. It is better to clamp the muscles in front of the thyroid gland between two pairs of forceps than to work in the dark in cases in which one cannot bring the gland forward readily. These muscles can be sutured perfectly with catgut after the gland has been removed.
The superior thyroid artery and vein are first caught between two pairs of forceps and cut, then the lower pole of the gland is caught so that the forceps will include the inferior thyroid artery and vein and so that it will still be far enough forward to avoid the recurrent laryngeal nerve where it passes between the gland and the trachea and also the inferior parathyroid gland. A considerable portion of the posterior capsule of the gland is left in position at this point which will protect these structures.

As has been said before, it is always wise to remain quite on the right side of the margin of safety. If the patient is in an excellent condition, it is safe to remove one entire lobe together with the isthmus and the lower half of the other lobe, but this is often unsafe and quite as often unnecessary. A portion of one lobe approximating in weight to a normal thyroid gland should be left.

All vessels should be carefully ligated because these patients do not bear loss of blood well and the veins are greatly dilated and very thin walled, and consequently bleed very freely unless carefully ligated.

In a few cases we have failed to drain and in these cases we have observed post operative hyperthyroidism. Kocher pointed out the toxicity of the blood in such cases and our experience seems to bear this out. We now constantly drain by means of a little gauze drain and by the Kocher glass drain through a buttonhole two cm. below the margin of the wound. In order to secure good cosmetic results we always make the symmetrical transverse, so-called collar, incision of Kocher.

With these precautions the mortality after this operation is exceedingly low. In our experience it has been less than 2 per cent. since we have applied the principles which have just been described.

For the purpose of resisting any attempts that may be made to impose compulsory vaccination on either children or adults and to oppose "the granting of a monopoly of healing practice to any system or systems of healing," the Alberta Medical Freedom League has just been formed in this city with branches in all the principal centres of Alberta.

—Calgary Herald, October 8th, 1913.
Case Reports

A CASE OF MASTOIDITIS WITH PERISINUS ABSCESS AND PARALYSIS OF ONE LEG

On March 14th last, Edith T. was admitted to my service in the Toronto General Hospital, complaining of severe headache in the left temporal and occipital regions, with pain and purulent discharge from the left ear. She was mentally very dull and apathetic, the tongue was dry and coated, the breath foul, the teeth and gums were covered with sordes, and the general appearance was that of severe toxæmia. The patient was well nourished and inclined to be fleshy. She seemed markedly prostrated. She walked with difficulty. Examination showed the chest negative, the abdomen slightly distended without rigidity or tenderness. There had been no movement of the bowels for a week previous to admission.

She stated that for some time she had suffered from la grippe accompanied by sore throat and cold in the head for which she had received no treatment. On March 17th, she had developed pain in the left ear with deafness—the pain radiating above and behind the ear and down the side of the neck. This pain was continuous for five days, when a purulent discharge drained from the ear. There had never been any previous trouble in her ear.

The left ear showed a thick purulent discharge in the canal, but it was not of great quantity. There was a large perforation in the tympanic membrane which did not look recent, the upper part of the membrane was thick and granular, the long process of the malleus was not seen, no sagging whatever of the posterior or superior wall of the canal was present, there was no redness or œdema of the mastoid process, and but a slight evidence of tenderness at the tip. The temperature was 99°, pulse 98, and respirations 22. Active purging of the bowels, and the usual treatment for acute otitis were at once instituted, and the patient kept under close observation.

Although the appearance of the ear did not correspond with the history given by the patient, it was not until several days after her admission to the hospital, when the patient's mother was located, that the following additional and important information
was obtained. In early childhood, in England, she developed scarlatina which was followed by an acute purulent left otitis media. It was thought she had made a complete recovery as there was no recurrence of discharge from the ear, and with the exception of an occasional earache, she had been very healthy and had suffered from no severe illness. A few weeks previous to admission, however, she had become totally unlike her previous self and showed a change in disposition, becoming irritable, impulsive, difficult to get along with, and extremely bad tempered. Finally she had left home and taken a place as a domestic, her whereabouts being unknown to her family until they were notified of her illness in the hospital.

On March 15th (second day) the patient was extremely dull. The temperature rose at noon to 103°, with a pulse of 130. There was no change, however, in the mastoid symptoms or in the appearance of the auditory canal, and in the evening the temperature dropped to 99°, with a pulse of 100.

The following day (third day) the temperature rose again to 103°, the ear appeared as before, the discharge was still moderate in quantity, and what tenderness there was at the tip was definitely less in amount. She complained, however, of intense frontal headache, and in spite of the purging measures the constipation was very obstinate.

On the fourth day the temperature did not rise above 102°, and the tenderness of the tip had disappeared. The frontal headache was very acute, the pain radiating around the left side to the occiput. The patient for the first time complained of stiffness in the lower limbs, tingling in the fingers, and hyperesthetic areas all over the body. She stated that her head felt sore lying on the pillow and that her back felt stiff. Mentally she was quite clear when roused, but appeared very drowsy when left alone. The patellar reflexes were marked, neither Kernig's nor Babinski's signs were present. Strong light caused pain in her eyes, the pupils were equal and reacted normally, but she complained of considerable pain on rotating the eyes, and on that account the presence or absence of nystagmus was not elicited. The white cell count was 16,200, 80 per cent. of which were polymorphonuclears. The blood culture was negative.

On the fifth day a consultation was held with Dr. Graham Chambers, and it was then observed that the patient had developed over night a complete motor paralysis of the right leg with foot drop. Kernig's sign was now markedly present and the Babinski slightly in evidence, but sensory disturbances were absent. Pain was very
The patient exhibited severe symptoms throughout his body. Vision was good, the pupils reacted normally, but exposure to strong light and attempts to rotate were uncomfortable, and a slight proptosis of both eyes was observed. There was no tenderness over the mastoid region, no swelling, redness, or sagging of the walls of the canal. The history mentioned above had now been obtained from the mother, and it was decided to explore the mastoid on the day following.

During the night, the patient had a chill followed by a rise of temperature to 105°, with a pulse rate of 120 and projectile vomiting. The cerebrospinal fluid was examined and showed 160 cells per cmm.

On the sixth day, assisted by Dr. Royce, I opened the mastoid and found the cortex extremely hard and thick. The cells were small and few, and contained pus under pressure. The lateral sinus was remarkably far forward, and when uncovered, pus welled up in abundance. The sinus wall was healthy, but, while detaching the bone, a small perforation was made and a free flow of blood followed, necessitating packing. The dura was exposed over the antrum and tegmen tympani and appeared normal. The radical operation was completed, but, on account of the packing in the sinus, the wound was left open.

On March 20th (seventh day) the following notes were made. After operation the temperature fell to normal, but rose in the evening to 101°. The patient was mentally clear, but still dull and drowsy when left alone, and complained of severe frontal headache radiating over vertex to occiput. Paralysis of the right leg was less, as she could bend the knee slightly on great effort, but this improvement did not persist and the proptosis of both eyes was more marked.

On March 21st (eighth day) the morning temperature was normal, the pain was very acute all over the head with frontal tension, but the other symptoms were the same as the day previous. After consultation with Dr. Graham Chambers and Dr. George Bingham, it was decided that Dr. Bingham should trephine over the leg centre in the left Rolandic area and locate and drain, if possible, the abscess effecting the right leg paralysis. While preparing the patient for operation it was observed that she showed marked incoördination in her arm movements, and was unable to locate accurately with either hand objects placed for her to touch. The movements were stiff and awkward especially on the right side. Proptosis of both eyeballs became very marked, and a diplopia
developed with inability to rotate the eyes to the left. She became semi-delirious and suddenly had a severe convulsion, commencing in the right hand and spreading over the entire body with the exception of the right leg. The eyes were rotated upwards and to the right and the head drawn to the same side. The convulsion lasted five minutes and was followed for a time by a semi-comatose state.

On March 22nd (ninth day) Dr. Bingham trephined over the leg centre in the Rolandic area on the left side. The skull was very thick and hard, practically no diplopic bone being present. When the dura was incised the brain substance appeared congested and softened. A director was passed into the brain tissue downwards and forwards for about two and a half inches, and pus and serum of a very bad odour drained out. A cigarette drain was inserted and the wound closed. Cultures were made from the pus in the brain, from the pus in the perisinus abscess, and from the canal of the ear. All showed the streptococcus pyogenes aureus.

The patient never rallied after the operation, and died the following morning. A postmortem was obtained upon the head only and the notes of this are as follows:

On removing the skull cap the left side of the brain appeared to be bathed in pus which drained away. The pial vessels showed congestion on the left side, especially at the base and over the occipital and temporal lobes. About one inch from the tip of the temporo-sphenoidal lobe, the cortex showed softening and some necrosis of the tissue. Extending from this posteriorly between the occipital lobe and the cerebellum the arachnoid was covered with a thick fibrinous exudate, which followed the course of the sinus on the left side to the extreme posterior and internal margin of the occipital lobe, from where it extended upwards and forwards along the inner aspect of the left cerebral hemisphere to the fissure of Rolando. Over the Rolandic area, in its upper portion, a focus 3 cm. in diameter showed marked congestion of the vessels, and necrosis of the cerebral tissue covered with thick fibrin and pus. This extended into the brain substance for the distance of about 2 cm. Extending below this into the lateral ventricle was apparently a trocal puncture, the surrounding brain slightly hemorrhagic and softened. Both lateral ventricles were congested and contained a small amount of purulent material. In venal sections the rest of the brain was apparently normal.

It is of interest to note the course taken by the perisinus abscess in reaching and focusing itself in the Rolandic area without
other portions of the brain tissue showing signs of necrosis or abscess formation. The small area of softening in the temporo-sphenoidal lobe is seemingly post-operative.

The anatomical diagnosis was: (1) Acute meningitis extending from the temporo-sphenoidal lobe along the course of the sinus. (2) Abscess of brain, Rolandic area. (3) Acute appendicitis. (4) Acute mastoiditis.

Thus runs the history of what must be regarded as an entirely unique case of brain abscess. In the first stage are noticeable the absence of vomiting, and of low temperatures, with no chill until the fourth day. In the second there was not the usual lessening of pain except in the mastoid, and while there was dulness and drowsiness, there was neither slow cerebration, monosyllabic answer, nor lack of sustained attention, while the temperature was high and the pulse rapid. Had the abscess been larger the pulse would probably have been slower. Constipation was present, but was, perhaps incorrectly, ascribed to the carelessness of the patient. The meningitis probably dated back to before the time at which she left her mother’s house.

It is a remarkable coincidence that the father of the patient died two years ago from cerebral abscess of the temporo-sphenoidal lobe following left-sided chronic mastoiditis. He was delirious when admitted to hospital, but had suffered from recognized middle ear symptoms for six years, and otherwise presented the typical symptoms of a cerebral abscess.

Here are two lives lost as the result of failure to recognize the seriousness of chronic middle ear disease, and the postmortem records of our hospitals are full of such cases. Had the mastoids of these patients been opened while they were well and strong, the fatal termination would hardly have been abscess of the brain. The lesson to be learned by the family practitioner is obvious.

Toronto D. J. Gibb Wishart, M.D.
Editorial

THE MEDICAL SCHOOLS

The Canadian medical schools are again in full operation; and from all come accounts of enlarged courses and strengthened faculties. In Dalhousie Dr. John Stewart has been appointed professor of surgery in succession to Dr. N. E. Mackay, who had resigned. The department of pathology is to be accommodated in a building just erected by the provincial government. The building was designed by Dr. M. A. Lindsay, professor of pathology, and everything which experience could suggest was included to meet the needs of the subject. The departments of chemistry and physics will be housed in the new building which the university is erecting on the site overlooking the North-west Arm. The faculty of medicine of the University of Dalhousie conducts the only school of medicine in Canada east of Montreal. It supplies the needs of those provinces and of Newfoundland. At the opening of the session twenty-four new students were enrolled. This includes, however, students in the department of dentistry. It is of interest to note that a number of students from the faculty of Arts have entered for physiology, that subject having been recognized as optional for graduation in Arts.

The Western University, of London, has established this year a faculty of medicine, on a very modern plan of organization by taking over from the original founders of the London Medical School all equipment, and renting from them the original building. The Board of Governors of Western University have appointed as dean, Dr. H. A. McCallum; as registrar, Dr. W. E. Waugh; and as an executive committee in full control, subject to the Board of Governors only, the
dean, the registrar, and four others, namely, Drs. H. Meek, H. Williams, F. P. Drake, and H. W. Hill. This executive committee created six departments in the medical faculty, namely, anatomy, physiology, pathology, medicine, surgery, gynaecology, and obstetrics. Under one or other of these departments the "chairs" of older organizations are placed. The head of each of these six departments is known as the chief of that department, thus doing away with the well-worn term "professor." Those associated with each chief are designated as instructors or teachers, as their work may be practical or didactic. The chiefs of five departments have been appointed and a chief for the department of physiology is now being sought. There are now connected with the teaching staff six men, giving all their time, two in the medical department, and four in the Institute of Public Health. The former represent anatomy, physiology, and pharmacology, the latter, pathology, bacteriology, chemistry, physics, and public health. These five subjects are taught under the Institute of Public Health, which is organized as a separate faculty of Western University. Some of these subjects are being more and more regarded in educational circles as university subjects, instead of medical school subjects, and are so organized and financed in the Western University. Dr. Paul S. McKibbin, for six years teacher in the department of anatomy in the University of Chicago, has been appointed chief of the department of anatomy. With a high standard of admission and a five year's course, the attendance is below that of former years; but this has been the inevitable first result of such changes elsewhere, and has invariably been followed by a reaction later on, resulting in securing better students and an increased attendance.

The medical faculty of Queen's University is now an integral part of the university, financially as well as academically. Since 1892 there had been academic union but a financial independence. Now, however, the Medical Faculty has the same relation to the Board of Trustees as the Faculty
of Arts, and the Board has assumed full financial control and responsibility. Under the former arrangement good progress was made. It is hoped that with the new scheme, the advance will be still more rapid.

The session opens with a registration in the first year of seventy-three. This is in spite of a higher standard of matriculation and the rejection of a considerable number of applicants. The total registration will be in excess of that of last year which was two hundred and fifty. The faculty has established three teaching Fellowships, one each in anatomy, pathology, and physiology.

In the University of Toronto the opening lecture of the session was given by the professor of obstetrics and gynaecology, Dr. B. P. Watson, who came from Edinburgh in November, 1912, and has already demonstrated his worth. The registration of students closed October 13th, and the following are the results: first year, 136; second year, 101; third year, 118; fourth year, 111; fifth year, 89. The total number is 555, to which may be added 60 occasional or dental students, who take anatomy, making a grand total of 615. There are some 25 more students registered in the full medical course than there were last year.

Of the 555 medical students 51 have taken the combined arts and medical courses of seven years. These have voluntarily taken their B.A. degree in the natural science course. They receive their B.A. after four years at the university, and when they have completed their arts course, they have already fulfilled the requirements of the first two years in medicine and, after three years further study, they may obtain their M.B. The combined course thus makes it necessary for them to spend seven years at the university.

The Medical Research Fellowships which were provided a year ago give promise of excellent work. Good progress has been made and a number of papers will be published at an early date. The senior research fellows are Drs. A. H. Caulfeild, W. Fletcher McPhedran, R. G. Armour. The junior
research fellows are Dr. C. G. Imrie, K. M. B. Simon, and Sharp. The chief feature of the present session is the opening of the new hospital. Already four hundred beds are occupied and there is a daily attendance at the out-patient department of some two hundred patients. Beside the General Hospital is the Children’s Hospital with one hundred and fifty beds, and a large out-patient department. These two hospitals, officered by university men, give excellent clinical facilities for students and both hospitals are now in close proximity to the university.

At McGill the session opened on September 30th, with a lecture by Dr. A. C. Geddes, the newly appointed professor of anatomy. Regular lectures were commenced on October 1st. The number of students in the first year is 93, which is about twenty less than last year. The total number in all years is 377. Dr. Shepherd resigned from the chair of anatomy at the close of last session, but he still retains the deanship. The only new appointment to the staff is that of Dr. A. C. Geddes from the Royal College of Surgeons, Dublin, to the Robert Reford chair of anatomy. In the department of physiology, the loss suffered by the death of Dr. Alcock has not yet been made good; but the work is being carried on by his first assistant, Dr. Miller, and the regular staff of the department. The trimester system in the final year, inaugurated last session, has proved a success and will be continued.

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ON MEDICAL EDUCATION

The thoughtful, presidential address of Dr. Herbert J. Hamilton, delivered at the opening session of the Toronto Academy of Medicine, was devoted to the subject of the more recent developments in connexion with medical education. Dr. Hamilton wisely lays stress upon the need for a higher standard of preliminary education, pointing out that the high level of professional training in Germany is rendered possible by the excellence of the education received in the
secondary schools. It is interesting in this connexion to learn that the University of Toronto medical faculty has endorsed the recommendation of President Falconer that "senior" matriculation in Arts be required of intending medical students. Dr. Hamilton, however, passes no judgement upon the recent requirements of many examining boards in the United States, namely, a four year course at a high school and a year's work in the Arts course of a university in physics, chemistry, and biology. For ourselves we adhere to the opinion that these subjects can be better taught, and more economically as regards the student's time, under the control of the medical, rather than of the Arts faculty.

We are glad also to observe that Dr. Hamilton is against what we may term the Harvard principles of specialization during the medical course, and cordially agree with him that "specialization should be based upon a general training in the principles of general medicine." In the debate upon the relative importance of laboratory and clinical training he takes the wise mean of seeking greater mutual coöperation between the clinician and the laboratory worker, and he urges that to a greater extent than at present students have allotted to them individual cases, and be expected to conduct with each full studies, clinical and laboratory, themselves performing the various investigations required. A comparatively small number of cases so treated is immeasurably superior for purposes of training to the abundant performance of routine physical or laboratory examinations.

It is but natural that Dr. Hamilton as a practitioner is strongly opposed to the appointment of university professors of clinical medicine, whose whole time shall be devoted to hospital teaching. We believe in the force of his contention: knowledge of methods of diagnosis on the part of the medical man is not of more importance than knowledge of how to treat patients as individual human beings. If the university professor is to be debarred from coming into close contact with private patients, he must become incapable of imparting
to students the tact and intuition so essential in dealing with a class of individuals which for the general practitioner constitutes "the run of the mine."

While favouring the establishment by government of laboratories for diagnosis and for research, and the financial support of them, Dr. Hamilton cannot bring himself to approve of the recent British legislation, and anticipates the prospect of the eventual establishment of a National Medical Service. Yet a national service does not imply a removal of the privilege on the part of the individual to choose the doctor who shall attend his family and himself. We would point out that at no distant date some three-quarters of the population of Great Britain will probably be bound directly or indirectly, by the provisions of the National Insurance Act. But under that Act most careful provision is made to ensure to the individual the privilege of choice of practitioners.

The rational motive for choosing a doctor is not alone for his skill in treating the patients ailment: it is for his skill in treating the patient. It is the personality of the doctor, the sympathy that is established between him and the patient that is all important, and it is because of this that the privilege of choice must be retained.

A HAPPY ISSUE

It is satisfactory to learn that the action of Dr. Caulfeild against the National Sanatarium Association at Gravenhurst, to which we referred some months ago in an editorial, has been settled by consent, the defendant association apologizing for the destruction of Dr. Caulfeild's valuable bacteriological material, declaring that it was caused by inadvertence and without their knowledge, professing extreme regret at the destruction, and expressing their appreciation of the work Dr. Caulfeild had done. Dr. Caulfeild on his part acknowledged that as his sympathy was with this charity supported by public funds, he did not feel justified in pressing
his claim for twenty thousand dollars damages, which he had brought against the association. To avoid further litigation the defendants paid to the Court one hundred and sixty dollars, the value of room and board claimed by Dr. Caulfeild. Dr. Caulfeild is to be congratulated upon the happy termination of this most irritating suit in which he has had the sympathy of the whole body of his colleagues throughout Canada. After the treatment he had received, the temptation to press the suit for damages must have been peculiarly strong. The exposure of the treatment meted out to a practitioner in first class standing by a body which depends for its success upon the cordial coöperation of our profession will, we trust, prevent a recurrence of incidents like that which is now thus happily closed.

THE PHYSICIANS' PERIL

A PHYSICIAN in his consulting room takes his stand upon good faith. He proceeds upon the assumption that his patient is telling him the truth. His attitude is not that of the lawyer or the detective. It is rather that of the clergyman who is about to hear a confession. He deals with the case as it is presented to him. The physician does not deny that he may be deceived; but the penalty for the deception will fall upon the patient and not upon the physician.

A most distressing and disgraceful violation of the ethics of the profession has occurred in New Brunswick. It is now before the courts, and, therefore, any comment upon the case must be merely in the nature of an enunciation of the general principles which govern the relation between physician and patient.

On August 27th, four physicians in Sussex were made to appear in court to answer to a charge of violating the Canada Temperance Act. On September 10th, all were convicted and fined. An appeal has been taken against the conviction on the ground that the magistrate in convicting decided
against the law and evidence; that under the Canada Temperance Act the physician is the sole judge of whether the alcohol prescribed is for strictly medical purposes; and the accused having sworn that the liquor was prescribed for strictly medical purposes, the information should have been dismissed.

The information was laid by one Anton Gjerde, who, as the prosecution attorney admitted, "was brought here to do detective work." The informer acknowledged that he had previously "worked" in Moncton upon the same business. The evidence of the physicians was very clear. The man stated at one consultation that he had just arrived from Norway, and was suffering from the results of seasickness, and that he was about to leave for the lumber woods. At another consultation he alleged that he had been upon a debauch, and required some stimulant for his depressed condition.

Temperance is an excellent virtue. The whole power of the medical profession is directed towards its enforcement, and this prosecution will not cause zeal to be abated; but practices of this kind will serve to destroy the relation which exists between the physician and his patient. This relation of confidence, however, is solely in the interests of the patient.

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TYPHOID IN THE WEST

The problem of sanitation in the West is an extremely difficult one, but the various municipalities are striving with it manfully. Where there is rapid settlement the danger from typhoid is always imminent, and the experience of the West is not peculiar. But in that country there are especial difficulties on account of the configuration of the land and the consequent inadequacy of drainage. The provinces of Alberta and Saskatchewan are traversed, rather than drained, by the Saskatchewan River, which is not a river, in the ordinary sense of the term, but really a canal which draws off the water from the mountains and discharges
it into Hudson Bay. It is not, like rivers in the East, plentifully supplied during its course by streams and rivulets, and the areas along its banks go undrained. And yet the reports of the incidence of typhoid have never been less alarming than they are this year. Two towns in this region, widely separated from each other, may be taken as an illustration, and in both of these typhoid is much less prevalent than ever before.

The report for September of the health officer for Calgary shows a total of 47 cases of typhoid fever during that month as against 165 cases for September, 1912. The number of cases reported was the smallest for five years. The total number of cases of infectious diseases reported during the month was only 89 as against 216 for the corresponding month of last year. Of the 47 cases of typhoid 28 were traced to sources outside of the city, and of the 19 from inside the city the diagnosis was uncertain in some cases. A similar condition prevails in Saskatoon. In the year 1910, there were 104 cases. Last year there were only 82, whilst, for the period from January to September inclusive, of the present year, the cases numbered only 38. In September of the present year, only 16 cases were reported as against 55 for the previous September. Of these at least one-third are credited to sources outside of the city. This state of affairs is especially gratifying, especially at a time when the municipalities are experiencing so much difficulty in providing money for municipal purposes.

THE SMALLER HOSPITALS

The hospitals of Canada are under a strict scrutiny. From all quarters come reports of comment by health officers, committees, and juries. These reports are not entirely favourable, but they cannot be disregarded; on the other hand, there is much praise. The grand jury, at the assize court in Kingston on October 8th, in a report commended "the condition
and management” of the Hôtel Dieu, and the General Hospital. They recommended that these institutions should secure increased grants. Again, a committee from Strathroy visited the Petrolia Hospital on October 6th, to obtain information which might be useful to them in equipping the new hospital at Strathroy, and the deputation expressed the belief that the “Petrolia Hospital fully deserves the enviable reputation which it has throughout the province.”

The news from the West is not so encouraging. In the monthly report for September, by the medical health officer of Calgary, the charge is made against the local hospitals that, “nurses who care for typhoid patients often become infected and in a great many cases carry infection from typhoid cases to patients suffering from other diseases, who are receiving treatment in the same wards.” In such cases the fault does not always lie with the nurses. The remedy is well indicated by the health officer, that separate wards preferably in a separate building should be established for the reception of patients suffering from typhoid.

CANADIAN PUBLIC HEALTH ASSOCIATION

THE third Congress of the Canadian Public Health Association was held in Regina September 17th-20th. The occasion was one of great scientific value and the meetings were most successful and were well attended. In the various sections, eight in number, a large field of activity was reviewed and commented upon and many interesting addresses were delivered. Mention may be made of those given by Dr. Evans, of Chicago; Drs. McCullough, Bryce, Montizambert, Paget, and Hastings; Miss Mary McDowall, of the University of Chicago settlement; and Dr. Seymour. Mr. R. H. Murray acted as local secretary and is to be congratulated upon the result of his labour. Resolutions were passed requesting that each provincial government provide for the training of supervisors of children’s playgrounds in the Normal schools
and in the universities; that the attention of the Federal Government be respectfully requested to the resolution urging the establishment of a Federal Department of Public Health; that in municipalities where no special hospital exists for the treatment of cases of tuberculosis, such cases be admitted to the general hospitals; that the standard laboratory methods of the American Health Association be adopted as the standard of the Canadian Public Health Association; that properly qualified veterinary officers when available should be appointed to act in conjunction with medical health officers in matters relating to veterinary hygiene and food and dairy inspection; and that, whereas the Public Health Acts of the several provinces, and the Medical Practice Acts of the several provinces of the Dominion of Canada vary and differ from one another, and, whereas under the Canada Medical Health Act the medical profession in Canada has been placed upon a rational basis, therefore, be it resolved, that a committee of this association be appointed to coöperate with a committee of the Canadian Medical Association to initiate and forward the revision of the Public Health and Medical Acts of the various Canadian provinces, so as to give a uniform and comprehensive basis for the work of the medical profession in Canada, thus facilitating the formation and operation of the proposed Federal Health Department. Dr. Seymour, of Regina, was elected president of the association for the coming year.

CHARITIES AND CORRECTIONS

The fourteenth annual conference of Charities and Corrections, which took place in Winnipeg September 15th-17th, was well attended, eight hundred persons being present at some of the meetings. An address given by Mr. Owen R. Lovejoy, of New York, was particularly interesting. In it he gave a warning to Canada, and particularly to Western Canada, concerning child labour. In 1900 it was shown than more than two millions of child labourers were employed in
the United States in work which was detrimental to health. Such a condition can be prevented only through legislation, and during the past few years something has been done to improve matters. Any attempt to introduce similar conditions into Canada should be immediately opposed and children, especially of foreign parentage, given an opportunity to be properly educated. Mr. R. B. Chadwick, superintendent of neglected children for Alberta, considered that the Dominion Juvenile Offenders’ Act should be compulsory throughout the country and not in certain places by proclamation, as it now is. Dr. Helen McMurchy, speaking of the feebleminded, pointed out the necessity of a more thorough inspection of would-be immigrants. Australia now has a system of inspection whereby persons intending to emigrate are carefully examined in Great Britain and on the Continent before they are allowed to commence their journey. Mr. W. M. Leiserson, superintendent of the Industrial Commission of the State of Wisconsin, made some rational suggestions concerning labour exchanges. A more perfect organization of such institutions is essential before they can be of real benefit either to the employee or the employer. “Industrial farms for delinquents” was the subject of an address by Hon. W. J. Hanna, the provincial secretary for Ontario. He described the work done by the prisoners on the prison farm near Guelph, where the men are building permanent buildings which should be finished next February. The men are trusted in every way as far as is considered wise and the results are most satisfactory. Ground has been purchased at Whitby for the same purpose; and at Port Arthur the prisoners are clearing one thousand acres of land.

In a recent number of Conservation it is suggested that milk might be delivered with advantage in red bottles, or bottles with red wrappings, as the violet rays are detrimental to milk while the red are beneficial. Further research along these lines will doubtless prove of interest.
THE text-books upon mental disease are being re-written to conform with the dogma that, "the insane man is a sick man, and requires a sick man's care." This fresh view of insanity demands a revised classification and an altered nomenclature. The practitioner must learn new terms. The juvenile insanities and the delusional lunacies are now classed together as the heboid-paranoia group. These forms are essentially neuropathic in their origin; but allied with them is another group of mental disorders in which neurasthenia as well as neuropathy plays a part. The main symptom of this group is defective inhibition, and it has received from French writers the descriptive term, neurasthenic insanities, or, as Dr. Dercum prefers, the more expressive, though awkward, term, neurasthenic-neuropathic.

More modern still, on the authority of Pierre Janet, is the category "psychasthenias." To sum up the change: In the days of St. Thomas, they called psychasthenia, *pusillanimitas*, and looked upon it as a vice: now we give it a Greek name, and call it a disease. The morbid and the vicious in the same individual are inextricably mixed, and there yet remains the great question: whether is it easier to say, Thy sins be forgiven thee; or to say, Arise, and walk? The mediævalists were not wholly wrong in their view. They had for their guidance that important direction addressed to the man who for thirty-eight years was sick of the palsy; Behold, thou art made whole: sin no more, lest a worse thing come unto thee. The problem was not entirely new even at that time. We have attained to much skill in classification; we have created a semi-scientific jargon to indicate our categories of mental disease. The insane man is a sick man, but he may have been, and be still, a vicious and wicked man. A bad mental habit has its corresponding physical disorder. Cure

the one, and we help the other. Relieve the disorder, and we go far towards removing the vice. "Fili, in tua infirmitate ne despicias te ipsum; sed ora Dominum, et ipse curabit te," has for its correlative, "Qui delinquit in conspectu ejus qui fecit eum incidet in manus medici."

The first number of the official journal of the American Society of Tropical Medicine, *The American Journal of Tropical Diseases and Preventive Medicine*, appeared in July. It is published in New Orleans in connexion with the Tropical School, Tulane University, and is printed by the University Press.

Reports come from places as far away from each other as Quebec and Prince Albert of cases in which the fees charged by physicians for operations performed have been considered exorbitant and appeal to the Courts has been made. In one case where the amount claimed by the physician was one hundred dollars, it is reported that "on the evidence of several other local doctors" the defendant was ordered to pay the sum of fifty dollars. In another case, the amount claimed by the physician was five hundred dollars.

Over two thousand years ago the beneficial effects of sun-baths were recognized by Herodotus. Since then many writers have advocated the treatment in tuberculosis of the joints, and, in a recent volume of the *Annals of the Swiss Society of Balneology*, Dr. Rollier, of Leysin, has published the results obtained by him by the sun-bath treatment of surgical tuberculosis. 650 cases—355 adults and 295 children—are reported. Of these 7 only were operated upon. Of 450 "closed" cases, 393 were cured, 41 improved, and 11 unaffected; of 200 "open" cases, 137 were cured, 29 improved, and 14 unaffected. The treatment was continued for from six months to two years, or more.
A system of medical inspection of schools and school children is now in force in New South Wales. A chief school medical officer has been appointed and will be assisted by seven medical officers—four men and three women. Their duties are: to medically examine school children, to inspect school buildings, to lecture on hygiene and public health to the teachers, to examine candidates for entrance to the teaching profession, to examine teachers who are incapacitated for work by sickness, to investigate outbreaks of infectious disease, to lecture to the senior girls on the care of infants, personal hygiene, and hygiene in the home.

To commemorate the royal visit to India, the King George V. Antituberculosis League has been organized in Bombay. The objects of the league are: the notification of disease; the establishment of tuberculosis dispensaries; the education of the people; the medical inspection of school children; the supervision of milk and food supplies; the establishment of a special fund to relieve distress; and to arouse public interest in tuberculosis. A central dispensary and a laboratory have been established, and it is the intention to open several others in Bombay, and in other municipal centres. The undertaking is a commendable one and if the league is given adequate financial support by the citizens, it should bring forth excellent results.

Seventy-six candidates entered for the examinations of the Dominion Medical Council of Canada, which were held at Montreal, October 10th. The oral and written tests were conducted in the new medical building of McGill University, the clinical portions of the examinations took place in the four hospitals—the Royal Victoria, the General, Notre Dame, and the Hôtel Dieu.

A good many practitioners have availed themselves already of the provision of the Roddick Bill, whereby a practi-
tioner who holds a provincial certificate, and who has practised for ten years or more is entitled to Dominion registration. The Dominion licence will prove particularly helpful to those physicians who live near the border of a province and who, without it, would be unable to give medical assistance to a patient residing possibly a very short distance away, but in a neighbouring province.

The first Convocation of the American College of Surgeons will take place in Chicago, on the evening of the thirteenth instant, when fellowship will be conferred on all members who have become duly qualified. Certain honorary fellowships also will be conferred on this occasion. The principal address will be delivered by Sir Rickman Godlee, the president of the Royal College of Surgeons of England. The presidential address will be given by Dr. J. M. T. Finney.

About thirteen hundred applications for membership have been received by the secretary, but of these only one thousand have filed their applications in conformity with the requirements of the college. About four hundred applications were approved by the Board of Regents at the Minneapolis meeting, and an additional three hundred have been favourably passed upon by the general committee on credentials.

The government of Alberta has before the legislature, now in session, an amendment to the Medical Act, which, it is hoped, will induce physicians to locate in the more thinly settled parts of the province. According to this amendment any medical man entering the province whose diplomas give him the right to apply for examination by the medical faculty of the University of Alberta, will be granted an interim license to practise medicine, providing he is prepared to locate twenty miles away from any licensed practitioner. When the next examinations are held, if he should fail in some of the subjects his license will be extended for six months in order to give him time to prepare in the other subjects.
The new medical building of McGill University, with its splendid equipment for teaching, has been the theatre of an interesting and historic occasion; one which will not fail to impress any one who has been observant of the trend of events in medical politics in Canada for the past quarter of a century. It has been no light task to weld together the forces of Canada's great provinces, to combine east with west and west with east, and thus create one Council of Medicine. It must have been particularly gratifying to Dr. Roddick to have witnessed the final result of the long labour he has accorded. The first examinations for registration under the Canada Medical Act concluded, after a ten days' session, on the evening of October 17th. They were conducted in the English and French languages by twenty-eight examiners, chosen by the Medical Council of Canada at its last meeting at Ottawa in June, 1913. In anatomy the examiners were Dr. L. D. Mignault, Montreal; Dr. H. Williams, London; Dr. J. A. Henderson, Montreal; Dr. E. Couillard, Quebec. In physiology, they were Dr. T. G. Brodie, Toronto; Dr. E. Mathieu, Quebec; Dr. A. P. Knight, Kingston; Dr. E. Asselin, Montreal. In hygiene and state medicine, Dr. C. Valin, Montreal; Dr. T. Starky, Montreal; Dr. R. Fortin, Quebec; Dr. H. W. Hill, London. In pathology and bacteriology, Dr. J. G. Adami; Dr. Vallée, Quebec; Dr. D. Graham, Toronto; Dr. E. Latreille, Montreal. In obstetrics and gynaecology, Dr. L. de L. Harwood, Montreal; Dr. R. W. Garrett, Kingston; Dr. S. Grondin, Quebec; Dr. R. Ferguson, London. In medicine, including therapeutics, Dr. W. Goldie, Toronto; Dr. Rosesseau, Quebec; Dr. W. F. Hamilton, Montreal; Dr. E. P. Benoit, Montreal. In surgery, Dr. A. Marion, Montreal; Dr. J. M. Elder, Montreal; Dr. A. Paquet, Quebec; Dr. J. Halpenny, Winnipeg.

The written and oral examinations were held in the medical building and the clinics in the four large hospitals,—the Royal Victoria, the General, the Notre Dame, and the Hôtel-Dieu. The candidates were seventy-one in number,
fourteen French-speaking and fifty-seven English-speaking. Dr. R. W. Powell, of Ottawa, the registrar, is to be congratulated upon the harmony which prevailed throughout the examinations, and which was due in large part to his assiduity and earnest effort.


The physician who occupies an official position is in a different category from him who is enjoyed in private practice. He exercises a dual function and shares with other public servants responsibility to the public for his conduct.
He lives less to himself than the practitioner, and is obliged to keep even a stricter watch upon his habits and conduct. In one district of British Columbia, so we are informed by a newspaper of October 4th, a grand jury made the matter a subject of reference in the ominous words: "It has been brought to our attention that some of the medical men resident within this country and in receipt of government monies as health officers, have, through their addiction to drink or drugs, at times been quite incapable of fulfilling their duties. This condition of affairs is within the personal knowledge of some of the jury. We feel sure that such a state of affairs only needs to be called to the attention of the medical association and the government to be at once rectified."

The Armstrong Advertiser is in favour of providing doctors with distinctive badges which would ensure for them special privileges. The proposal is that doctors who employ motor cars should display this badge, and so secure immunity against infringement of municipal by-laws regulating the public traffic. It would appear that such a privilege was sought in Toronto, and was refused, but that the Detroit Medical Association succeeded in impressing upon the authorities of that city the necessity of such a badge for doctors, with the result that every member of the association carries a badge on the radiator of his car. Doctors will do best who seek the fewest privileges, and leave to the common sense of the community the passing of judgement upon their conduct in daily life as well as in emergencies.

Students of medicine suffer many things at this season of the year, and we would not willingly add to their burden. We cannot refrain, however, from setting forth some words of precious advice, which were furnished by Jacob Laurenz Sonderægger to a friend who enquired of him, having the design to enter his son upon the profession. This Dr. Son-
deregger was a Swiss physician, of St. Gallen, who was born in 1826, and died some fifteen years ago. The translation is done by Dr. Arnold Klebs, and reached us through a friend of all students. The words are: There is nothing greater or more beautiful on earth than man; he is the most difficult and most lofty object of thought and action. His existence and aims, his life and suffering, all are curious and touching in the highest degree. Bright eyes and fine ears you have to apply, a great talent of observation and patience and again patience for endless learning; a clear, critical head with an iron will, that in need is hardened, and yet a warm movable heart, which understands each pain and sympathizes; a religious hold and moral earnestness, besides this a decent exterior, manners in company and agility in one's fingers, health of body and soul—all this you must have, if you do not wish to be a bad or an unhappy physician. You must bear like a camel the weight of multiple knowledge and preserve the freshness of the poet; you must out-play all the arts of charlatanism and still remain an honest man; medicine must be (and everything depends on this) your religion and your politics, your fortune and misfortune. Therefore do not advise anyone to become a physician. If he still wants to become one, warn him against it, repeatedly and earnestly; if none the less he persists, then give him your blessing, if it is worth anything; he will have need of it.
Book Reviews


Gray's "Anatomy" was published for the first time in August, 1858, fifty-five years ago. The present reviewer studied anatomy from the eighth American edition, published in Philadelphia in 1878, by Henry C. Lea. A comparison of this new edition with that ancient book emphasizes the excellence of the old as well as the excellence of the new. The improvement has come by way of evolution, and not through a change in plan, and the book remains as an enduring monument to Henry Gray. For purposes of the medical student it has no rival. The appearance of a new edition does not destroy the value of the former one, but the student will be glad to have the latest edition of a book which will last him a lifetime, and may be mentioned in his will as a valuable possession.


The conclusion to which Dr. Bruce's fresh study of sciatica leads him is that the set of symptoms known as "sciatica" are the result of reflex irritation originating from troubles in the hip-joint. The common view, of course, is that sciatica is primarily a neuritis. In an appendix he gives notes of six hundred and ninety-one cases to substantiate his conclusion.


The home of the scientific diatetics is certainly in Continental Europe, and Professor von Noorden for more than twenty years has been associated with the progress of the theoretical and applied knowledge of metabolism. Last year he was induced to come to
New York to deliver a course of lectures before the New York post-graduate medical school. These lectures, which were delivered in October, 1912, are contained in this book. It bears the title of “New Aspects of Diabetes,” because about eight years ago the same author published a somewhat similar book upon this subject. On this occasion various new aspects of the malady are presented, but it must be confessed that there is nothing very new or encouraging in the treatment. The author has made it clear, however, that these cases must be approached by the long established paths. Dealing with the claims of those vendors who label their compounds as specific factors and as new discoveries in the therapy of the disease, Professor von Noorden says: “We must not go so far as to say that the whole matter always is a deliberate fraud; most frequently it is an error of judgement arising from the fact that the vendors of these specialties have not had a training sufficiently scientific to enable them to discriminate between cause and effect.”


With the opening of the medical schools the wants of the students are not forgotten, and the season is especially rich in new editions of standard text-books. This English edition of “Wharton’s Minor Surgery” is one of this class, a new edition of a standard book.


This book on malaria comes from Jacksonville in Florida. The author in his preface expresses the belief that one of the most sacred duties the general practitioner in malarial regions owes to the community in which he lives, is his assistance in the eradication of malaria. This book is a valuable contribution towards that end. It contains all that is known upon the subject, and is rich in historical reference. In the region from which the book comes there is a large field for its usefulness, and Dr. Henson deserves the thanks of his fellow practitioners.
Students will like to know that a new edition of "Halliburton's Physiology" has been issued. An older generation will remember "Kirke's Physiology," out of which this work has arisen. The present edition is in reality the eleventh of "Halliburton." There is much that is new in this book, so much, indeed, that it is quite as modern as any of its competitors for the student's favour. The book is not increased and the price remains the same. The quality is as it has always been—of the best.

This is a book which ought to be in the hands of every serious practitioner of medicine. The more general his practice the more necessary is the information which it contains, since it is upon him the task of diagnosing malignant tumours first falls. To emphasize the importance of the book we cannot do better than reproduce the solemn words of the preface: "The diagnosis of a malignant new growth ranks among the most important decision in the domain of abdominal disease. Depending on the stage of the disease, it may mean a saving of life, or it may mean a death sentence. It behooves the physician to avoid, as far as possible, the reproach of not having recognized in time the malignant nature of the disease, making a life-saving operation impossible; but, on the other hand, the patient should not be subjected to unnecessary alarm and a useless operation through an erroneous assumption of a malignant process. To choose the right path between these two extremes of possible error belongs to the most difficult problems of internal medicine."

During the past five years there has been a remarkable development of surgery in the central States of the American Union.
This development has been accompanied by progress in medical education and the issue of text-books. From St. Louis and Kansas City admirable works on medicine are given out. This book by Dr. Binnie is one of these. It is now in the sixth edition after being before the profession for only nine years. The note of this book is that most attention is given to the more difficult and uncommon operations. It is assumed that the surgeon is already familiar with the generally recognized procedures. It may be added that Professor Binnie received his training in Aberdeen.

A TREATISE ON THE DISEASES OF WOMEN. FOR STUDENTS AND PRACTITIONERS. BY PALMER FINDLEY, B.S., M.D. Octavo 954 pages, illustrated with 632 engravings in the text and 38 plates in colours and monochrome. Cloth, $6.00 net.

Lea & Febiger, Philadelphia and New York, 1913.

As we have remarked on many occasions, the domain of medicine in the United States is moving gradually westward. Surgery and medicine is now being done in the larger cities of the middle west to an extent that was undreamed of ten years ago. There are well equipped schools, large clinics, and in their wake the appearance of text-books. This newest book comes from Omaha, and the author is professor of the subject in the State University of Nebraska. It is dedicated by the author to his former chief, Dr. J. Clarence Webster, which in itself is an indication of youth in this medical life, as it is not so many years since Dr. Webster left McGill for Chicago. When a new book appears one turns to the preface with alacrity to discover what are the grounds for the incursion of a new writer into an already crowded field. But this book is not entirely new. It is the outcome of the author’s "Diagnosis of Diseases of Women," and now appears as a complete text-book on the subject. We should say that the characteristic of the book is that, the non-operative methods of treatment of these diseases receive more consideration than commonly falls to their share. In all respects it is a complete text-book, elaborately, and even beautifully illustrated, excellently printed, and issued from the house of a first rate publisher. This book is likely to repay in a measure the large debt which the West owes to the East.

For this, the sixth edition, Dr. Dudley has subjected the greater part of his book, paragraph by paragraph, as he tells us in the preface, to a regional and interstitial dissection. He has re-written many chapters, but by a process of re-arrangement and condensation he has found space for much new matter without enlarging the volume. The book is beautifully printed—as it always was—as all of Messrs. Lea & Febiger's publications are. It fulfills every need of the student and practitioner, and will be found of great value to the specialist as well.

Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


Res Judicatæ

VETERINARY EDUCATION

HISTORY does not record in detail the early progress made in the study of diseases of animals, nor the means taken to combat or prevent their recurrence. We are aware, however, that something over two thousand years prior to the Christian era great stress was laid on the proper feeding of animals that were desired for work. These rules for feeding do not materially vary from what would be considered proper to-day. At this early period, "a doctor of oxen and asses" was accorded a legal fee as was his confere who treated the ills to which human flesh is heir, and there was always a penalty in the event of his being unable to perform a cure. This penalty, however, was less severe than that prescribed for failure in the treatment of the human being.

To Columella, a veterinary surgeon who lived during the first century of the Christian era, belongs the credit of insisting that hygienic surroundings, isolation and proper food were necessary adjuncts in dealing with sick animals. This it seems is prior to any reference to a similar procedure for the control of diseases among human beings.

The Hippiastrika is preserved to us through the foresight of Constantine and "reproduces the written opinion and views of the experts of the Eastern Roman Empire, the birthplace of the veterinary art or certainly of veterinary literature, and it is because it represents what men in our profession fifteen centuries ago thought on subjects which are engaging our attention to-day that their work becomes of such interest and value." This work, however, does not now exist in its original form but copies are available for reference. The data included in the manuscripts which have been

* "The Early History of Veterinary Literature and its British Development." Major General F. Smith, C.B., C.M.G., F.R.C.V.S. (Jour. Comp. Path. and Therap., Vol. XXVI, 1913.) L. J. Columella in his writings dealt exhaustively with the care, management, breeding and feeding of domestic animals. He was the first to point out the necessity for the isolation of affected animals when contagious disease appeared.

† Ibid. The compiler of the Hippiastrika is unknown, but it consists of a summary of the writings of the authorities in veterinary science up to that time.

‡ Ibid. Constantine the Seventh, Emperor of the later Roman Empire, with the designation, "Porphyrogenitus," (born in the purple), lived from 911 to 959 A.D.
preserved indicate that these copies do not agree in all particulars, doubtless the result of the work of copying being undertaken at different periods by several individuals, each of whom, either by design or unintentionally, made changes in the transposing of the text. The copying at this early time was necessarily performed by hand and naturally lent itself to many errors, some of which though minor in themselves materially changed the purport of the author. The writings of the early veterinarians which have thus survived the vicissitudes of time and are now available in a very imperfect form, indicate that the views then held on many ailments were not widely different from those obtaining in this enlightened age. The authors of the Byzantine period contributed much to the knowledge of the science, and it seems that veterinarians were then familiar with many of the contagious diseases of animals, although their knowledge was founded on a less sound scientific basis than is ours to-day. That these men were esteemed, is evidenced by the positions of trust which they held and the confidence with which their teachings were accepted. After Constantine, a considerable time elapsed during which it is evident that many of the writings were lost, and in addition this territory was invaded by the Mohammedans who carried such veterinary teachings as were found to Arabia, and, thanks to the employment of translators, usually learned Jews, such of the writings as were available were translated from the Greek into the Arabic and thus preserved. To similar translators we are indebted for the subsequent translation from the Arabic into the modern languages. This transposition is in a large measure responsible for the existence of the earlier works to-day, as very few are now available in the language in which they were originally written.

Notwithstanding these early historical data, we must look to the advances during our own time with a view of ascertaining whether we are doing our utmost to advance the art and science of veterinary medicine, for history is indelibly recording the results of our efforts for others to read, after we as individuals have ceased to worry over ideals, and when collectively we will be but a memory, known only by the writings of those who have been foremost in raising the educational standards of our calling.

From time to time the art and science of dealing with the diseases of animals has progressed; nevertheless, many were the occult devices employed to overcome disorders which now yield to very simple medication. By these occult devices, great cures were claimed; and then as to-day the public were as ready and eager to follow any self-styled healer who catered to the frailties of
human nature either by ministering to their personal indisposition
or to the illnesses of their live stock, for in many instances the health
of the live stock was then as now more important than the health
of members of their own families. Such practices have been responsible for the existence of empirics and charlatans, and who may say
that their exploitation of the public has not been for the general
uplift and improvement of educational methods? Who would dare,
in the light of our present knowledge and the practices of to-day,
to say that Paracelsus did not exert an important influence in stimu-
lating those interested in the practice of human medicine to eliminate much of the mystery which then surrounded this art? He simplified many of the methods of dealing with disease, although
it is generally admitted that he was an empiric. The existence of empirics and charlatans in the veterinary medicine of our day has exerted a very important stimulus toward the improvement of the
courses given by veterinary colleges. Some veterinarians are continually waging war with a view to securing the elimination of
empirics by legislative enactment, and this I believe to be a step
in the right direction. A few are exceedingly jealous of the standing
and success of the self-educated empiric, but I may state that the
trained veterinarian who is unable to successfully practice his pro-
fession in the face of such empirical opposition has either entered
the professional ranks improperly equipped, or else he has endeav-
oured to engage in a science for which he is by temperament and train-
ing wholly unfitted. We have passed the era when superstition
reigned supreme and are now enjoying the fruits of a higher civiliza-
tion than the world has ever known, expressed by the increased
facilities granted for all forms of educational advancement. Veteri-
nary science is coming to the fore, and ere long will assume the
importance which the increasing value of live stock will demand.

Outstanding men appear from time to time who are courageous,
yet sufficiently optimistic, to faithfully trust in the ultimate success
of their efforts. Such men may bend their energies to the finding
of a new land, the colonizing of an arid waste, the cultivation of
the hitherto unknown, the discovery of new scientific facts, the
practical application of existing knowledge, or they may stimulate
others to a desire for familiarity with subjects formerly considered
of little importance. All of such are pioneers and may prove martyrs, yes, heroes, to the cause of their choice, and time will emblazon their names in the eyes of future generations as indelibly
as those of any hero of mortal conflict. Following the pioneers,
there is usually a period of recrudescence, during which the real
development takes place, and among the men who accomplish this development are staunch men of the pioneer type. These men under other circumstances and environment would doubtless be pioneers, and yet who may say that their efforts in building upon a solid foundation are not the equal of the true pioneers though less spectacular?

Veterinary education, commencing as it did at a very early period from our standpoint, possessed its pioneers whose names are more or less familiar to us all. Others have endeavoured to complete the tasks which they commenced, in some cases under very arduous circumstances, and the little advancement made has been comparatively recent. But few men were concerned with this advance in North America, and most of them have gone beyond, yet those still with us are respected among their professional confreres and by others who have enjoyed their acquaintance.

We, in Canada, are most intimately concerned with the status of veterinary education within our own borders, as we are more vitally affected by conditions which reflect upon our own energies, than by circumstances which have but a remote bearing on our well being. With this reflection we must carefully consider what the great universities of this land are doing for veterinary education, and determine whether or not they are living up to the traditions of the individual institutions in other phases of advancement. We can justly lay claim to the first institution which considered it necessary to extend the course of study from two to three years, at a time when other colleges believed two years sufficient in which to give an adequate training. This one act on the part of the farsighted dean of the School of Comparative Medicine and Veterinary Science of McGill University, Dr. D. McEachran, has borne fruit, and there is not now a recognized school on this continent or elsewhere which considers less than three years adequate, in fact, a great many colleges whose courses now extend over four years are considering the advisability of adding another year to their curricula. Such is the trend of modern thought along all educational lines, and to those who are assisting in the maintaining of lowered standards in any of the veterinary colleges, there should be extended the severest condemnation from their colleagues.

We cannot go farther without mentioning the name of Professor James Law, so long connected with Cornell University, who successfully placed veterinary science in New York State, from a legislative and educational standpoint, on an equal footing with human medicine, at a time when schools within that state were
not equipped to meet the high standards demanded by legislative enactment. This advance has stimulated other states in the Union to an increased effort, and the federal government, through its Bureau of Animal Industry, indicates those institutions whose curricula are such that they may be expected to develop men suitable for service in the special work of the Bureau. Canada is forging ahead, and the examination required for entry into the Health of Animals Meat Inspection Service, is a step in the right direction, but the progress is slow and the schools are not provided with sufficient funds to meet the demands of present day educational requirements.

As a profession, and I believe that trained veterinarians are professional men of the highest order, a greater amount of time is demanded in the study of its many branches than is required for proficiency in any other line of endeavour. That there has been a tendency on the part of some of those financially interested in the exploitation of veterinary education to consider it as a trade rather than a profession, we are, perforce, compelled to admit. This tendency, however, has practically disappeared and the institutions now engaged in educating veterinarians are strengthening all phases of their curricula. As to the exact requirements and special training which may be insisted upon, there is naturally some difference of opinion. Each teacher considers his subject the fundamental one for the laying of a proper foundation; were it otherwise, the natural enthusiasm which should always exist would be wanting, and the details would be imparted in such a half-hearted manner that a student could scarcely eliminate the unimportant from the important features. If it were feasible, I would suggest that all desiring to perfect themselves as veterinarians should first take the prescribed curriculum in any of our leading agricultural colleges, after which they would be able to absorb the many intricate details in chemistry, physiology, anatomy, pathology, and other subjects which vary with each species of animal that a trained veterinarian may at any time be called upon to treat. While such a scheme may be impracticable for immediate application, I am of the opinion that the greater portion of the agricultural college training connected with the feeding and breeding of live stock should be included in the curriculum. This with a training similar to that now given in human medicine at our leading universities, using the horse as a type instead of the human being, and supplementing such instruction by the inclusion of special features connected with the various species of animals, so as to ensure a complete familiarity with the
most pronounced peculiarities of each, would materially assist in thoroughly grounding those electing to become proficient in this art and science. After submitting to such an apprenticeship, the individual graduate would feel capable of successfully dealing with many disorders which now puzzle all but the most experienced. His powers of discernment and intuition would be so developed that the greatest barrier to success, that of proper diagnosis, would largely be removed through his being conversant with the idiosyncracies common to each species of animal. In opposition to the above outline it may be argued that these requirements are being fulfilled to-day, but if this is so there are few schools which are meeting them in their broadest conception, and the highest practical development possible will not elevate in an excessive degree one who must be as versatile in his proficiency as the veterinarian should be.

Many are unaware that a veterinarian may, in an ordinary day's routine, be called upon to treat,—a hog, whose anatomical and physiological functions are very similar to those of man; a cow, with a very complicated digestive apparatus, requiring four stomachs and the usual complementary intestinal arrangements for the full performance of its functions; a horse, with yet another type of digestive system; a dog, whose digestive organs will readily assimilate bones and the innumerable ptomaines found in decaying meat; yet this is but a small list, for one might go on indefinitely detailing innumerable animals, including birds, which may be maintained as commercial assets, fancy stock or household pets. It may be pertinent to remark that the newly created fox industry, or the commercialization of foxes for their fur, is presenting problems of more than ordinary concern, if the final result of the experiment is to be a success from the financial standpoint. The turkey industry on this continent has been seriously menaced with extinction for the past twenty years by an infectious disease, and science has offered little to relieve the ravages thus occasioned. Fully trained men are required to deal with these and many other problems equally important. These references are extraordinary, but indicate certain ramifications of the science which must be provided for in the education of the modern veterinarian.

In view of the versatility demanded of the trained veterinarian, is it reasonable to expect that an ordinary mortal can in three or four years, assimilate even sufficient basic knowledge for dealing with all or even a portion of these animals, when it requires five years in our best universities to perfect one's self in the art of min-
istering to the ills associated with the human species? Again, not only are we confronted with the variations which I have very super-
icially enumerated without specific detail, but we have variations in the action of drugs, a different series of contagious diseases, some of which may be intercommunicable among all or a few species, and last but not least, as a diagnostician, the trained veterinarian must determine the location of a disorder, not by interrogating the patient as is the case in human medicine, but by properly directed observation and elimination.

It was Hierocles, * who, at the latter end of the fourth or the beginning of the fifth century, indicated the difficulty of diagnosis in the following words,—"In men there is an inborn faculty of speech by which they can express what is troubling them, nevertheless those skilled in the healing art consider the observation of symptoms necessary. How much more needful, then, must it be in veterinary practice to observe these symptoms of disease recognized as such by our traditional art in animals which are dumb by nature." In fact, there is practically no guide save the knowledge which is secured by the closest application, assisted by intuition, and accompanied by a natural aptitude for the work in hand.

From an environmental standpoint we are a meat-eating nation. We are not producing all that we consume in meat, meat food, and animal products, yet we have one of the largest areas of fertile lands on the globe. The total value of live stock in Canada approximates seven hundred millions of dollars.† Basing the yearly loss at five per cent., which is a very conservative estimate, due to prevent-
ible causes, there is an economic loss to the country of thirty-seven million dollars per year. The cost to the country of the Health of Animals Service, whose duty it is to protect the animals of Canada from the spread of contagious diseases within its borders and the

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* Ibid. Hierocles is by some considered a lawyer, but his writings show that he was conversant, with a more than ordinary intimacy, with the veterinary art as it existed in his day, and in a manner which could be secured only by actual contact and practice with animals. Two books written by him were five hundred years later the basis of a work which was intended to perpetuate for all time the practice of the Byzantine veterinarians. The wording of the final sentence quoted indicates that the art of veterinary medicine had then been known for a long time.

† The Superintendent of Compilation of the 1911 Census, Mr. E. S. Macphail, has supplied figures from which the following values have been estimated: Horses $426,903,930; milk cows, $123,362,225; other cattle, $76,228,020; sheep, $14,510,400; swine, $24,914,714. The total figures for poultry are not available but are estimated at $15,000,000. British Columbia figures are not available and are estimated at $61,591,761. The total from these figures is $742,511,050.
prevention of their entry from without, is but three hundred and twenty-five thousand dollars or considerably less than one per cent.

With this vast investment, it is apparent that the time is ripe for properly safeguarding this great live stock industry which is one of the principal assets of our country. Probably the best means of safeguarding this great interest is to see that adequate provision is made for the suitable training of such material as may present itself at the existing veterinary colleges. This raw material must first be equipped with the basic education necessary for the proper assimilation of such facts as may be presented in the purely technical studies required. Without such a foundation, the superstructure cannot be raised with a reasonable assurance that the individual will be capable of coping with the many problems presented to him after he has graduated.

Sufficient schools of a proper standard are not now available in Canada, therefore, we may ask, are our universities unequal to the task which is at their door? Other departments are being generously endowed and equipped, yet one of the most important phases of higher education is being silently ignored or overlooked.

Charles H. Higgins.

A meeting of the Winnipeg Trades and Labour Council was held September 18th, on which occasion a resolution was passed requesting the establishment of a municipal hospital, and suggesting that the city council should take advantage of an offer which the General Hospital Board is reported to have made, to place the management of the hospital in the hands of the municipal authorities.
German Literature

ABSTRACTS OF GERMAN LITERATURE

Rupture of the Uterus After Pituglandol. By Dr. Germanus Espeut, Muenchener Medizinische Wochenschrift, No. 32.

As a contribution towards the literature of hypophysis extract as a means of stimulating labour pains, perhaps the following instance observed by us may be of interest.

At five o'clock in the morning of January 16th, there was brought to the hospital a pregnant woman of thirty-four years of age, who had already had seven normal deliveries. According to the story of the midwife who accompanied her, the pains had started that evening at about eleven o'clock, and at one o'clock the membranes had ruptured. When meconium began to escape from the vulva, and the foetal heart could no longer be heard, the midwife sent for a doctor, and being unable to procure one brought the patient to the hospital.

On her admission at five a.m. the condition was as follows: Gravid uterus of a size indicating full term; pelvis somewhat contracted, (conjuta vera 10 cm.); occiput presenting and the head fast in the pelvic inlet; cervix dilated; passage of meconium; foetal heart very weak. The pains were not strong and occurred every ten minutes. General condition of mother good.

Since the child was plainly in danger, and operative procedure did not seem indicated, a hypodermic injection of pituglandol was given at five thirty o'clock to strengthen the pains; and when the pains did not increase, and labour had not advanced after one and a half hours, the dose was repeated. In about five minutes after the second injection violent and very painful pains occurred. The patient was very restless and excited; suddenly cried out, "I am so ill, I shall die," became pale and a cold sweat broke out over the forehead. The pulse was very rapid and hardly palpable. The uterus was much altered in shape, the fundus being on one side high up in the abdomen and strongly contracted. The child seemed to be the shape of a ball. Suddenly the pains ceased. A diagnosis of rupture of the uterus was made, and a laparotomy at once per-
formed. The uterus showed two large tears, extending through the whole cervix and meeting in front. The organ was removed and vaginal drainage established. The child was asphyxiated and could not be restored. On the third day the patient died of general peritonitis.

Our opinion is that the rupture can only have taken place after the injection of pituglandol, since the occurrence was easily recognized after the second injection. There was a disproportion between the size of the head and the pelvis causing obstruction. The pelvis was only slightly narrowed, but the foetal head was afterward proved to be unusually large, the greatest circumference being 37½ cm. Child weighed nine pounds.

The pituglandol was given during the expulsive stage of labour, the cervix being fully dilated, the pains weak, and operative procedure not seeming to be indicated. The dose was not unusually large: the contents of one ampule of pituglandol (Hofmann-La Roche), i.e., 1·1 cm., given twice during an hour and a half.


Dressings soaked in antiseptic solutions, salves, the use of the cautery and, above all, dressing powder are still much used and held in great esteem by doctor and patient. The advantage of certain of these is not to be lightly questioned, but still the indolence and tedious course of many wounds makes one doubt whether the means of treatment in vogue at present are thoroughly appropriate, whether they favourably influence healing, and indeed whether certain of them do not actually retard its course.

We intend to recommend briefly a procedure that has already upheld our views in a series of cases, and, at least in many instances, makes one consider it an advance in the therapy of granulating wounds. The treatment consists of the employment of a stream of dry air, either hot or cold, playing upon the wound. The application is very simple, since one has merely to direct the stream of air upon the wound until the latter is thoroughly dry. This will be more quickly accomplished by using hot air, but still the principle is not the same as that of hot air treatment, but is a simple drying process. The advantages of the procedure are as follows: The over-abundant granulation tissue which seems to retard healing becomes much restricted, and it is astonishing how, in the course of one sitting of 5-10 minutes duration, the uneven unhealthy look-
ing wound edges assume a smooth and even fresh appearance. At the same time is lessened the secretion that in large amounts stagnates upon wounds and seems to prevent the formation of epithelium. The treatment is non-irritating to the tissues and is also free from such disadvantages as are displayed by many medicaments owing to their colour or odour. Moreover the patient is spared any pain. A good example of the result of this treatment is that of a wound 7 cm. long and 1.5 cm. broad (the result of an incision for cellulitis), which after being unsuccessfully treated for some time with silver nitrate, was fully healed in seven days.

Good results are not to be obtained unless the treatment is conscientiously carried out; that is the drying process must be performed at least once a day.

A word may be said regarding the mechanical irritation of the wound by the dressing lying directly upon it. We have of late attempted to protect the wound by a pad of felt in which a window has been cut, with good results.

Fischer, of Bad Nauheim, in a recent number of the Muenchener Medizinische Wochenschrift, draws our attention to the probability of seasickness being one of the many manifestations of vagotony. The symptoms certainly resemble those that appear after the physostigmine test: salivation, malaise, dizziness, headache, nausea and vomiting. The author has put his ideas to the following practical test: Before leaving the dock he examined many passengers of the S.S. Amerika, on which he had engaged his passage to New York, and made a note of all who showed a vagotonic tendency. He then noticed that with the first signs of rough weather these passengers were the first to be affected. They were given hypodermic injections of atropine in doses of $\frac{1}{4}$ to 1 mg., with excellent results. The author writes: "The result of the atropine injection was most astonishing. After a very few hours the sufferers felt much better; salivation and vomiting ceased, the latter in most instances within half an hour. The facial pallor was replaced by a tinge of colour and the pulse became stronger. And yet the sea was becoming all the time rougher. In three to four hours the signs of seasickness had almost entirely disappeared. Even certain passengers who had become so weak that they were removed to the ship's hospital were at once improved after one injection."

The surgical department of the University Clinic at Tübingen,
raises the question whether the practise of iodine disinfection at operations is not detrimental to the health of the operator and his assistants. Analyses of the air of the theatre have shown iodine in various quantities which might be sufficient to impair the health. Blood examinations of those employed in the operating theatre show a leucocytosis, especially marked in those who have been connected with the surgical department for a short time only, and lessening as the system accustoms itself to the iodine-laden atmosphere.

**Expectant Treatment of Eclampsia.** Lichtenstein, Berlin.

The method of expectant treatment is as follows: First narcosis with ether or Billroth's mixture, examination, venesection (500 c.c.), followed by Stroganoff's routine of exhibition of morphine and chloral. If the cervix is fully dilated at the beginning of the attack delivery is effected and venesection and the narcotic treatment carried out. Under this treatment delivery is often spontaneous. The infant mortality is much less than that of the active treatment. The maternal mortality has proved to be 6.2 per cent. in eighty cases.

London, Ontario

G. C. Hale

There is great need in Vancouver for a home for incurables or old age patients. As there is no other place in which such patients can receive the necessary attention, they are sent to the General Hospital. The hospital is crowded and can ill afford to give up space which is needed for cases requiring more specific treatment. Improvements are now being made to the hospital at a cost of three hundred and twenty-five thousand dollars.
Obituary

Dr. Calvin Lutz, of Gananoque, Ontario, died September 14th, in the sixty-third year of his age. Dr. Lutz practised in Western Ontario for a time, but his health compelled him to give up his profession. He then took up the calling of a druggist and conducted a business in Lansdowne, until a short time before his death. He leaves a widow and one son.

Dr. Robert Lyon Sanderson, of Sparta, Ontario, died September 23rd, in the eighty-second year of his age. Born at Niagara-on-the-Lake, he was the son of an officer in the British Army; his mother was the daughter of an Empire Loyalist. After taking his medical degree, Dr. Sanderson began to practise in 1857, at St. Thomas, removing thence to Sparta two years later. For many years he was medical officer of health for the township of Yarmouth. He continued his professional work until a few years ago and by his untiring zeal won for himself the name of "Sparta's Grand Old Man." He was a member of the Baptist Church.

Dr. George Edmond Baril, of Montreal, died suddenly September 20th. Dr. Baril was born at Battiscan, Que., in 1859; he was educated at Three Rivers Seminary and at the Victoria Medical College. He first practised at St. Pierre, and in 1883 went to Montreal, where he continued his professional work until the time of his death. Dr. Baril was president of the Educational Commission of Hochelaga for twelve years.

Dr. F. R. W. Warren, of Assiniboia, Sask., died suddenly on Friday, September 12th. Dr. Warren was born at Balderson, Ontario, on June 10th, 1877. After receiving his early education at the Perth Collegiate Institute, Dr. Warren went to Queen's University. In 1901 he obtained the degree of B.A. with honours in classics, and in 1906 the degree of M.D., C.M. The following year was spent in postgraduate work at New York. Dr. Warren then practised for some time at Balgonie, Sask., going from there to Assiniboia where he soon built up an extensive practice. Dr. Warren was a Conservative and at the time of his death was president of the Conservative Association of Assiniboia. He was a member of the Anglican Church.
Dr. George Allan Kennedy, of Macleod, Alberta, died from cancer of the tongue in the Winnipeg General Hospital October 8th. Dr. Kennedy was born at Dundas in 1857. He was educated at the Grammar School and Collegiate Institute at St. Catharines, and received the degree of M.B. from the University of Toronto in 1878. He then went to the Northwest Territories and from 1878 to 1887 was surgeon to the Royal Northwest Mounted Police. From 1897 to 1905 he was president of the College of Physicians and Surgeons of the Northwest Territories and for many years was a member of the Council; he was also surgeon for the Canadian Pacific Railway and vice-president of the Canadian Medical Association. In 1908 he was elected a Senator of Alberta University. Dr. Kennedy had a large practice at Macleod and won both respect and affection from those to whom he ministered. He was the first president of the Macleod Club. He leaves a widow, one son—Dr. A. Kennedy, and one daughter.

Dr. Thomas H. Hanson, of Kenora, Ontario, died September 30th, in the sixty-eighth year of his age. Dr. Hanson was born in London, Ontario, and for many years was medical officer for Indian affairs of the Kenora district.

Dr. J. L. Bethune, of Baddeck, N.S., died suddenly September 27th, in the seventy-first year of his age. Dr. Bethune practised for many years in Cape Breton and was well-known throughout the district. He leaves seven daughters and one son—a physician.

Dr. Thomas Merrill Prime, of Knowlton, Quebec, died October 3rd. Dr. Prime was born in Dunham in 1836; he received his medical training at the Castleton Medical College, Vermont, graduating as M.D. in 1856. Later he did some postgraduate work at Bellevue Hospital, New York. In 1874 he went to Knowlton, where he has practised ever since. He was coroner of the district. His activities were not confined to the field of medicine, for until a few years ago he was local editor of the Knowlton News. He leaves two sons, both physicians, and two daughters.

Dr. Ivan Earl Annett, of Windsor, Ontario, died after a short illness at St. Joseph's Hospital, London, Ontario, October 4th, in the twenty-fifth year of his age. Dr. Annett graduated from the Western University in 1910.
Dr. L. P. R. Lafleche, of Caribou, Maine, died suddenly September 19th. Dr. Lafleche was in the forty-sixth year of his age. Born at Louiseville, Quebec, he was educated at the seminary at Three Rivers, and from there went to Victoria University, where his medical training was obtained. He practised for a short time at Presqu’Ile, going thence to Caribou where he has practised for the past twenty years. He leaves a widow, two sons and four daughters.

Dr. T. M. Armstrong died at Lloydtown, Ontario, October 5th. Dr. Armstrong was well-known in Allison and Rosemount, where he had practised for over forty years. He also practised in Toronto for a few years.

Dr. J. D. Stevenson, of Toronto, died October 8th, in the eighty-sixth year of his age. Dr. Stevenson was born in Ireland and came to Canada at an early age. He served as surgeon in the North West Rebellion. After practising for several years at Kleinburg, Ontario, he went to Toronto, and continued his professional work there for more than thirty years. He belonged to the Masonic brotherhood.

Dr. Gideon Duncan, of Bathurst, New Brunswick, died October 5th. He was in his seventy-second year and was one of Bathurst’s oldest citizens, a clever and successful practitioner, greatly esteemed by all who knew him. Dr. Duncan was born at Coldstream, Scotland, July 3rd, 1842. He was educated at the Free Church School at Swinton and at the Andersonian University, Glasgow. In 1864 he came to Canada as principal of the Bathurst Village Superior School. Two years later he took up the study of medicine, first with Dr. W. W. Gordon, and later at McGill University, graduating as C.M., M.D., in 1871. He then commenced to practise at Bathurst. Dr. Duncan was an active member of the New Brunswick Medical Association, over which he presided on more than one occasion. He was once president of the Canadian Medical Association. He was a Presbyterian and a Conservative, keenly interested in education and in the welfare of the people. He leaves one son, Dr. R. Gordon Duncan, and two daughters.
A general hospital is to be built at Glace Bay. The building will be of brick and will cost about $80,000. It will probably be completed next June.

It is propose to enlarge the Victoria Hospital at Fredericton. During September forty-three patients received treatment in the hospital and twenty-one patients were discharged.

The plans and specifications have been prepared and arrangements made to proceed with the building of a tuberculosis hospital at St. John, New Brunswick.

Ontario

The following cases of contagious disease are reported by the provincial board of health for the month of September: smallpox, 3; scarlet fever, 98, 8 deaths; diphtheria, 112, 12 deaths; measles, 29, 1 death; whooping cough, 38, 8 deaths; typhoid fever, 338, 27 deaths; tuberculosis, 94, 67 deaths; infantile paralysis, 5, 2 deaths; cerebro-spinal meningitis, 5, 3 deaths.

In Toronto during September, the contagious diseases reported numbered 302. Given in detail the cases were: diphtheria, 58; scarlet fever, 35; typhoid, 133; measles, 13; smallpox, 0; tuberculosis, 46; chicken-pox, 8; whooping cough, 6; erysipelas, 1; meningitis, 1; poliomyelitis, 1.

Dr. A. J. Macaulay has been appointed medical officer of health of Brockville.

An isolation hospital is to be built at Newmarket.

An Army Medical School has been established recently at Ottawa in connexion with the Central Laboratory of Hygiene. Instruction will be given in military sanitation, and militia medical officers will be trained in laboratory work and army sanitation.
Officers holding sanitary appointments, or desirous of qualifying for the same, are eligible to attend the classes.

The following candidates have been successful in obtaining their M.D., C.M. degree from Queen's University: F. C. Anderson, Kingston; D. C. Irwin, Ottawa; C. K. Robinson, Kingston; G. E. Thwaits, Trinidad, British West Indies.

A general hospital is to be built at Walkerville. The Walkerville National Council of Women has been working towards this end for some time and as a result of continuous effort thirty thousand dollars has been subscribed. The site has been given by the Messrs. Walker. It is proposed to build a hospital large enough to hold fifty beds, but, in order to do this, a further sum of twenty thousand dollars is needed.

A good many cases of typhoid fever have occurred at Mimico, a small place near Toronto.

A new smallpox hospital is to be built at St. Thomas.

After a careful investigation of the charges brought against the Hamilton Hospital, Judge Snider stated that, in his opinion, the buildings and equipment were insufficient for the city's requirements and that the number of nurses was inadequate, the nurses consequently being overworked; furthermore the accommodation provided for the nurses was unsatisfactory. He concurred in the criticisms made by Dr. Bruce Smith, but found that other charges were unfounded and that "no misconduct, mismanagement, or serious neglect prevails at the hospital."

Dr. Frederick W. Marlow, F.R.C.S., has been appointed associate professor of gynaecology in the medical faculty of Toronto University.

Five hundred and ninety-seven deaths occurred in Toronto during the month of September. This means a death rate of 14.6 per cent., and is 2.1 per cent. more than that of last September. Two hundred and fifty-three of the deaths registered were of infants under one year of age.

The annual report of the Brantford Hospital for the year
ending September 30th, 1913, states that nine hundred and seven patients received treatment during the year. The expenses for the month amounted to twenty-two thousand five hundred and seventy-seven dollars.

Five hundred dollars has been given to the Sir Oliver Mowatt Memorial Hospital at Kingston. The money is intended to be spent on a cottage, large enough to accommodate one person. During the past year fifty-five patients were treated at the hospital.

QUEBEC

In order to complete the Notre Dame Hospital at Montreal, a sum amounting to $750,000 is required. Bonds for this amount will probably be issued within the next few months; the issue will be for twenty years at 5 per cent.

The cases of infectious disease reported in Montreal during the week ending September 27th, were: diphtheria, 22; scarlet fever, 24; typhoid, 13; measles, 5; chicken-pox, 1; tuberculosis, 22; whooping cough, 3.

A slight epidemic of infantile paralysis broke out in Montreal about the end of August. Some twenty cases have been reported and four deaths have occurred.

A special course in hygiene is to be given at Laval University, Quebec. The lectures will commence in January. Information concerning the course may be obtained upon communicating with the secretary, Dr. A. Vallée, 22 rue Ste. Anne, Quebec.

Dr. Z. Rheaume has been appointed to the Chair of Experimental Surgery which has just been created at Laval University, Montreal.

The following are the returns of the Alexandra Hospital, Montreal, for the month of September: diphtheria, admitted 25, discharged 20, died 3; scarlatina, admitted 59, discharged 53, died 4; varicella, admitted 3, discharged 3; total number admitted 87, discharged 76, died 7.

A School for the Blind was officially opened at Montreal on Monday, October 13th, by Sir Lomer Gouin. The school is situated
on Sherbrooke Street in the western part of the city and has been instituted for the training of the blind among the English-speaking population of Montreal. The cost of the building has been forty thousand dollars, which amount has been raised by private subscription. On the occasion of the opening, a short address was delivered by Premier Gouin in which he intimated that an appeal for financial aid, if made to the provincial government, would meet with consideration. At present there are about twenty pupils in the school.

More than twenty thousand persons were treated without charge at the Montreal dispensary during the past year. Dr. Alfred Bramley Moore, Dr. Howard Gillis, Dr. J. H. Laidley, and Dr. S. H. Martin have been appointed to the staff of the dispensary.

The second regular meeting of the Montreal Medico-Chirurgical Society for the present session was held on Friday, October 17th.

An outbreak of smallpox has occurred at Sainte Marie Satorié, a small parish in Montcalm county. It appears that nothing was done by the local authorities to prevent the spread of the disease. The matter is now in the hands of Dr. Corsin of the provincial board of health.

An outbreak of scarlet fever is reported from Masson. Here again no attempt at quarantine was made by the local authorities.

The plans are now ready for the new building of the Montreal Foundling and Sick Baby hospital. A sum amounting to forty-two thousand dollars was subscribed last spring and has been doubled by Lieutenant-Colonel J. H. Burland, so that eighty-five thousand dollars are now available for building purposes.

Manitoba

A by-law for $275,000 in favour of the Winnipeg General Hospital was voted upon October 1st, and was defeated. As less than three thousand persons voted out of a possible eighteen thousand, however, the result cannot be considered as representative of public opinion; consequently, it has been decided to submit the by-law a second time in December, when the general elections occur.
The medical staff of the Winnipeg General Hospital gave a dinner to Dr. Blanchard and Dr. Gray on the occasion of their retirement from the attending staff of the institution. Both doctors have served the Hospital for nearly a quarter of a century, and at the time of resigning the duties of active attendance on the wards Dr. Blanchard was chief of staff and Dr. Gray senior gynaecological surgeon. In 1908-9, Dr. Blanchard was president of the Canadian Medical Association; and Dr. Gray has for many years been registrar of the College of Physicians and Surgeons. The dinner was held in the dining room of the vice-regal suite of the Royal Alexandra Hotel. Dr. Gordon Bell was chairman, and in the course of the evening Dr. J. R. Jones, on behalf of the staff, presented a silver tea service to Dr. Gray; and Dr. J. Wilfred Good presented a watch suitably engraved to Dr. Blanchard. Many references were made to the early days of the hospital and to medical practice in Winnipeg in the early eighties.

SASKATCHEWAN

The medical council of the Saskatchewan College of Physicians and Surgeons proposes to establish a library at Saskatoon. For the present a temporary building will be used, but later a library will be erected near the University.

A provisional school of instruction for the army medical service was opened in Regina, October 6th.

The following are the infectious and contagious diseases reported in the province from September 1st to September 27th: typhoid fever, 96 cases; diphtheria, 8 cases; scarlet fever, 15 cases; measles, 6 cases; smallpox, 6 cases; mumps, 1 case; infantile paralysis, 1 case; whooping cough, 17 cases; tuberculosis, 2 cases; trachoma, 2 cases.

ALBERTA

The new St. Joseph’s Hospital at Medicine Hat has been commenced. The site was given by Mr. E. D. Bennett, a resident of the city. The cost of the building will be about seventy-five thousand dollars.

Several cases of typhoid fever which have occurred in Medicine Hat are believed to have been caused by drinking water taken
from wells. As a result, an order has been given that all wells within the city limits be closed up.

Dr. Orr, medical officer of health at Medicine Hat, has been requested by the board of health to secure information as to cost and so forth of the proposed isolation hospital.

A resolution was passed October 9th, by the Alberta Legislature, authorizing the government to take steps to prevent the spread of tuberculosis in cattle. Disappointment has been felt that, up to the present, nothing definite has been done in this direction, save to supply tuberculin to such farmers as requested it.

BRITISH COLUMBIA

The new Royal Columbian Hospital at New Westminster is to be completed. It was necessary to suspend the work of construction for a short time owing to lack of funds. However, the Bank of Montreal has advanced $70,000 on unsold bonds which were issued by the hospital last year. When the building is finished, subscriptions will still be needed in order to furnish it.

A committee has been appointed to take up the question of hospital extension at Vancouver. If found possible, it is proposed to enlarge the General Hospital, build a medical building and maternity hospital, and extend the nurses’ home.

CLINICAL CONGRESS OF SURGEONS OF NORTH AMERICA

The fourth annual session of the Clinical Congress of Surgeons of North America will be held in Chicago, from the 10th to the 15th of this month. Everything possible has been done to make the meeting as successful as were the Philadelphia and New York meetings in 1911 and 1912, and a large attendance is confidently expected. As its name implies, the purpose of the Congress is to give to its members clinical demonstrations rather than the opportunity of hearing papers read and discussed.

An extensive and interesting programme has been arranged;
it includes every branch of surgery—gynaecology, obstetrics, genito-urinary surgery, orthopaedics, surgery of the eye, nose, ear, throat, and mouth. Special demonstrations will be given also in radiology, experimental surgery, surgical pathology, and so forth.

The clinics will begin early on Monday morning, the 10th, and will continue until Saturday afternoon. The registration fee is $5.00. Eight evening sessions will be held, when scientific papers will be read and discussed by distinguished American and European surgeons. The presidential address will be given on Monday evening by Dr. Edward Martin; and the president-elect, Dr. George Emerson Brewer, of New York, will give the annual address. Dr. Brewer has chosen for his subject, "A new method of pyloric closure in gastro-enterostomy." On Thursday evening an extraordinary session will be devoted to the discussion of cancer; a feature which will then receive particular attention will be the education of the public concerning the early recognition of the disease and the importance of early treatment.

Special arrangements have been made with the railway companies for the benefit of those who attend the Congress. Canadian surgeons who purpose being present should apply for information concerning rates to the local representatives of the New York Central Lines, the Pennsylvania Lines, or the Grand Trunk Railway.

The general secretary of the Congress is Dr. Franklin H. Martin, 31 North State Street, Chicago. Dr. Allen B. Kanavel is the general treasurer, and Dr. A. D. Ballou the general manager. The vice-president-elect is Dr. W. W. Chipman, of Montreal.

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**Canadian Literature**

**Original Contributions**

*The Canadian Journal of Medicine and Surgery, October, 1913:*


The Canadian Practitioner and Review, October, 1913:

The Scope of Sanitary Work in the Home C. A. Hodgetts.
Venereal Disease as a Public Health Problem F. A. Clarkson.
A Method of Tonsillectomy P. B. Macfarlane.
A case of Malaria treated with Neosalvarsan C. Sheard.

The Western Medical News, September, 1913:

The Greatest Medical Gathering the World has ever seen R. B. Wells.
Forceps Deliveries J. W. Turnbull.

Le Bulletin Médical, Québec, October, 1913:

Ce que doit être l’organisation municipale pour la lutte contre la tuberculose A. Savard.
Le logement de l’ouvrier E. Couillard.

The Public Health Journal, October, 1913:

Presidential Address, Canadian Public Health Association J. W. S. McCullough.
The Harbour of Indifference G. D. Porter.
Sanitary Surveys of Rivers J. E. Malek.
Charities and Corrections J. E. Starr.
The Relation of the Social Survey to Public Health Authorities F. Schneider.
Leaves from an Inspector’s Notebook H. D. Mathias.
The Land of Spotless Towns F. Withrow.

Medical Societies

OTTAWA MEDICO-CHIRURGICAL SOCIETY

The opening meeting of this society was held October 3rd, when the president, Dr. J. R. O’Brien, delivered an address on “Somatic Death.” He presented the subject in an excellent manner, dwelling upon the research and experimental work of the Carnegie Laboratory, New York.
LAMBTON COUNTY MEDICAL ASSOCIATION

The last regular meeting of the Lambton County Medical Association was held in the Carnegie Library at Forest on October 15th, 1913. Dr. H. A. McCallum, of London, was present and gave a very interesting address on "Visceroptosis." The report of the new medical tariff was read; this will come up for discussion at the next meeting in Sarnia in February.

VANCOUVER MEDICAL ASSOCIATION

The Vancouver Medical Association begins its series of meetings on October 6th.

The following officers for the year 1913-14 have been elected: president, Dr. J. W. McIntosh; vice-president, Dr. W. D. Keith; secretary-treasurer, Dr. J. H. MacDermot; president of clinical section, Dr. A. B. Schinbein; secretary clinical section, Dr. A. Rocke Robertson.

The meetings of the society will be three in number each month, instead of two, as formerly. The general meeting will take up matters of general interest to the profession and the chief speaker at each meeting will be a leading man in the subject chosen. The regular meeting will consist of papers read by members, with discussion. The clinical meeting, held at a hospital, will be the third meeting of the month.

The programme has been arranged in advance. This was done for the first time last year and proved a great success.

At the general meeting, which will take place on the tenth instant, Dr. Peter H. Bryce, of Ottawa, will give an address on "The true physician as sociologist." The regular meeting will be held on the seventeenth of the month, when a paper will be read by Dr. J. M. Pearson, on "High blood pressure, its cause and control, with special reference to nephritis." Papers will also be read by Dr. Colin Graham, and Dr. J. F. Fuller.
DISEASES OF THE STOMACH

By Alexander McPhedran, M.D.

Toronto

Because of the existing inaccuracies and misconceptions regarding most of the diseases of the stomach, the president has invited this discussion in the hope that it will make more rational much of the present day treatment which is so often haphazard and unsatisfactory. A review of the existing state of our knowledge of the pathology of the digestive system should enable us to deduce therefrom the course which should be pursued in the treatment of cases presenting the evidences of disease of these organs, more especially of the stomach, with which this discussion is more concerned. In view of the marked advance in recent years of our knowledge of diseases of the stomach, statistics, such as those of Brinton, to which so much importance has been attached in the past, have ceased to be of much practical value.

There is perhaps no organ whose function has been more misunderstood; even yet misconceptions are widely prevalent. The ancients showed by the very name abdomen (abdere, to conceal) that they recognized the great difficulties in interpreting the significance of disturbances caused by disease within its cavity. Depending, as they had to do, on clinical phenomena alone, it was, in truth, a hidden cavity, and to appreciate that fact shows him a philosopher who gave it the name "abdomen." All will concur in the appropriateness of the name, for who has not met with case after case in which there were no symptoms of disease, or in which the symptoms bore little, if any, apparent relationship to the disease that was later found to exist.

With the advent of pathological anatomy much progress was

made in the understanding of abdominal as well as of other diseases, but histological study, even by the eminent masters, had its limitations. It revealed the conditions at death, and these may, and often do, differ greatly from those present during the course of the disease, especially in its early period. The explanation of the symptoms, even when they are quite significant and the morbid changes are quite easily determined, were yet to be found, and much of this ground still remains to be explored.

The functional relations of the abdominal organs are very complex, a fact that largely accounts for the simulation of disease of one organ for that of another. Great advance has been made in the unravelling of this complex relationship during the last quarter of a century by an army of physiological workers, led by Pawlow, Starling and others. In the last decade the great advance in abdominal surgery has given the opportunity of studying the pathological conditions in the living subject and their relation to the train of symptoms to which they gave rise, and which are arrested by the cure or removal of the diseased part. These two sources of knowledge have enabled us to interpret many symptoms which had before been inexplicable.

Of all the abdominal organs the stomach has by far the widest and most complex relationships, in fact the widest and most complex of any organ in the body. It is closely connected not only with the other abdominal organs, but also with those above the diaphragm, especially the brain and heart. It is therefore peculiarly susceptible to referred disturbances from all parts, near and remote, functional and organic, psychical as well as physical. This accounts for the difficulty in differentiating between disease and referred disturbance of the stomach.

The marked susceptibility of the stomach is due to its rich nerve supply from both autonomic and cerebro-spinal systems; the other abdominal organs, although richly supplied by the autonomic system, have but a scant supply from the cerebro-spinal. The stomach is directly connected with the basal ganglia of the brain through the pneumogastric nerves, so that psychical impressions have nearly, or quite, as much influence on its functions as they have on those of the heart, although we may not be as acutely conscious of it. The spinal nerves from the sixth to the ninth dorsal connect it closely with the spinal cord by many fibres, furnished through the sympathetic. It is chiefly through these fibres that we become conscious of disturbances of the stomach, whether from local organic disease or referred causes. Sensory impressions in the stomach,
whether painful or otherwise, are usually referred to the area of
distribution of these same nerves in the precordial surface or in the
epigastrium. The coldness in the epigastrium felt after drinking
cold water is prevented or arrested by applying warmth to this
region; even the warm hand will be sufficient. On the contrary,
an enema of cold water causes no sensation of cold beyond the anus
with which the cold tube is in contact. That much of the pain
of local gastric disease, as ulcer, etc., is referred to the surface
is evident from the superficial tenderness so frequently present
in the epigastrium, as well as from the relief so often afforded by
the local application of heat and counter irritants.

The stomach as a receptacle develops in the scale of animal
creation after the cerebro-spinal nervous system appears, that
is after the supply of food has to be intermittent. As the scale rises
the stomach becomes more and more definitely differentiated in
structure, and more under the influence of the cerebro-spinal
system, reaching the acme in man in whom it becomes much more
subject to physiological influences.

The pylorus, and all below it, even in man, remains almost
wholly under the control of the autonomic system. The sphincter
function of the pylorus is physiologically under the control of the
duodenum, but pathologically it may be closed for a varying time
by serious damage of any part of the intestinal tract, and, possibly,
of other abdominal organs, as the gall-bladder and pancreas. In
experimental gunshot wound through the intestine, the pylorus
closes automatically, and may remain so for some hours (Mayo,
Boston Med. & Surg. Jnl., April 8, 1911); at the same time peristalsis
of the intestine is arrested, thus preserving the peritoneal cavity
from the escape of gastric and intestinal contents. It is closed also
in severe pain in any part of the intestinal tract. To this, as well as
to the referred irritation of the stomach, is due the vomiting which
nearly always follows if the injury is severe, as in rupture or per-
foreation of the appendix, and in strangulation of the bowel. Re-
current pain, or even disturbance or discomfort in any part of the
abdomen, usually leads to some degree of spasmodic contraction
of the pylorus, and may be a fruitful cause of the delay of food in the
stomach, which is so frequent in disturbed digestion from various
diseases in the intestinal tract.

The relationships of the stomach being so wide and varied,
its reflex or “referred” disturbances are well-nigh innumerable.
It is not only in intra-abdominal diseases of all kinds that gastric
symptoms may be the chief or even the only complaint, but also
in chronic diseases in general, both functional and organic. We are all familiar with the grave gastric disturbance which may herald and be associated with intracranial disease, such as tumour, abscess, meningitis, and uræmia and opium poisoning. In cases of tabes we meet from time to time those in which gastric crises are the only symptoms, and in some of which gastroenterostomy has been done. In failing circulation from any cause, gastric distress may be the only complaint for which relief is sought. Loss of appetite and distress after food are often the predominant symptoms of the toæmia associated with arterio-sclerosis and renal inadequacy. In the anaemias, whether primary or secondary, disturbed digestion is usually the earliest complaint, and to it in many cases is attributed the failing health. This is equally true of tuberculosis, of which failing digestion may be the earliest symptom. Of the innumerable symptoms of neurasthenia none are so frequent as derangement of digestion in a variety of forms, such as pain, acidity, flatulence, loss of appetite, etc.

The prominence of gastric symptoms in all these conditions is largely due to the associated psychical depression, than which no cause has more influence on the digestive processes. This is well illustrated by the case of a young woman who suffered much epigastric pain from all kinds of food, even barley water, due, it was supposed, to gastric ulcer. She was booked to sail for Europe two weeks later, an engagement she could not keep unless relieved. A careful investigation showed that her symptoms were doubtless due to nervous and psychical causes. As her condition and the circumstances were such as to render her very susceptible to mental suggestion, she was assured that she would be able to go if, in the meantime, she followed directions fully—to remain in bed under efficient nurse care, to ignore her symptoms, to take three full meals daily, and to have no concern about constipation, but go to the closet daily at regular hours; that is, to have no concern, but live as nearly as possible a vegetative life. She carried out the instructions fully, with the result that she had no discomfort although she took full meals, the bowels moved regularly and fully, and she slept well; she gained seven pounds the first week and five pounds the second. She enjoyed her three months tour, and returned in good health.

From time to time we meet with cases in which long continued irritation from food in excess or of unsuitable character so affects the nerve supply of the stomach itself as to produce a symptom complex, similar to, and even indistinguishable from, that of or-
ganic disease. They are frequently difficult to relieve and occasionally require gastro-enterostomy. Such cases are often markedly neurasthenic, and may show local tenderness over areas corresponding to the appendix, the gall-bladder, the duodenum, and various other parts. These are some, among the many, with a history of pain and tenderness in the right iliac fossa, such that the existence of chronic appendicitis is regarded as certain, so certain that an operation is undertaken not rarely with the confident assurance of a complete cure, with the result that a healthy appendix is found, removed, and the symptoms perhaps relieved for a few weeks, but soon to return as troublesome as before. As to the frequency with which such operations are done, the surgeons can best inform us, but as to the subsequent history the physicians are only too painfully aware.

It is important not to overlook the fact that it is not alone in these general and local conditions that "referred" or secondary gastric symptoms occur. Even in the various organic diseases of the stomach itself referred symptoms blend with and may overshadow those due to the organic disease. For example, in gastric ulcer the pain is at least in part, probably a large part, due to hyperirritability of the nervous system, perhaps chiefly of the section of the spinal cord which supplies the stomach, and to the associated psychical depression or irritation. This is evident from the variability of pain and other symptoms.

There are two chief functions of the stomach, the mechanical and the chemical. Of these the mechanical is of much the greatest importance. Any interference with it, whether from obstruction of the pylorus, spasmodic, or organic, or from loss of peristaltic power of the stomach, leads to retention of the contents and is soon followed by derangements of digestion.

The chemical function, on the other hand, is a very variable one, being easily affected by extraneous influences, especially of a psychical nature; the gastric secretion may be absent at one period of the day and abundant at another. It is not vital, as it may be much altered or even wanting for long periods without grave results, provided the mechanical function is duly carried out. It is unfortunate, and rather remarkable, that in the numerous works on diseases of the stomach, the greatest emphasis has been laid on the chemistry of the gastric secretion, and minute directions given for making innumerable tests, while the mechanical side of the work of the stomach has been relegated to a secondary place. It illustrates how a theory once set on foot is taken up by suc-
cessive writers each elaborating it further, until the whole profession has become obsessed with it. The degree of hydrochloric acid acidity has been arbitrarily fixed without regard to the wide normal variations, and little regard given to the due discharge of the food before each successive meal, without which efficient digestion is not possible. Views are becoming more sane of late, with the growth of fuller knowledge.

By way of conclusion it may be well to emphasize the fact that as the nervous relationship of the stomach to all parts of the body is wider than that of any other organ, its reflex or "referred" disturbances are proportionately the most frequent and varied. These referred disturbances are caused not only by local diseases but by general conditions, psychical as well as physical. Further, psychical disturbances are present in most cases of organic disease, and more or less influence the symptoms due to organic disease, not rarely overshadowing them. The great majority of gastric disturbances are secondary to general conditions, or local disease elsewhere than in the abdomen, as nervous diseases, organic and functional; abnormal blood states, as from anaemia, renal and cardiac inadequacy, and unsanitary conditions of living. After these, and making up much the greater number of the remaining minority, come local diseases within the abdomen, such as those of the appendix, the gall-bladder, the duodenum, and less often the pancreas. Disease and inadequacy of the cæcum and large bowel, leading to stasis and constipation should be added. If all the foregoing are eliminated there will be left but a very small percentage of cases to be accounted for by organic disease of the stomach itself.

The whole digestive tube from mouth to anus is but the inner surface of the body. The stomach is the most highly specialized part of the tract. If its organic diseases therefore are not relieved by careful treatment, appropriate surgical means should then be considered, as is done with disease of the external body surface. The existence of peptic ulcer has been long known, but it is only within little more than a decade that surgical knowledge and surgical confidence have felt themselves equal to deal with it. However, we have travelled far since then.

As between organic and referred disturbance of the stomach a differentiation in many cases can be made only by a painstaking repeated examination and a critical study of the patient's history. Even with such an investigation made with an unbiased mind, in not a few cases it will not be possible to exclude with certainty the existence of organic disease, or to determine with certainty the nature of the organic disease, if present.
RETENTION OF THE GASTRIC CONTENTS

BY CHARLES D. AARON, Sc.D., M.D.

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IN discussing the subject of the retention of the stomach contents, normal gastric motility must be thoroughly understood. Gastric tonus is a state of more or less shortening of the circular muscle of the stomach.* Peristaltic waves are independent of intragastric pressure. The peristalsis of the stomach consists of a series of continuous waves following each other in rhythmic succession. Tone is necessary for normal gastric peristalsis. The function of the stomach is that of a reservoir, the contents of which it must deliver to the intestine in a definite time. In the interval the food undergoes certain changes which we term digestion. The food and secretions are churned up together and prepared before being emptied into the duodenum. The stomach does not empty itself by gravity drainage. The cardiac and pyloric portions of the stomach are divided by the angular notch, incisura angularis. It is the pyloric portion that has to do with propelling the food onward by deep peristaltic waves; the cardiac portion contracts and thus presses the food on toward the pylorus. The strong peristalsis in the pyloric half of the stomach churns the food to the consistency of cream. As long as food remains in the stomach this peristaltic action continues, but it stops at the pyloric orifice; it does not pass on into the duodenum.

Hydrochloric acid in the stomach relaxes the pylorus. A delay in the acid reaction in the pyloric region causes retention of food in the stomach in spite of strong peristalsis. When the acid chyme is discharged into the duodenum, the pylorus closes, for acid in the duodenum has an effect upon the pylorus directly opposite to that of acid in the stomach. The closure of the pylorus continues until all the acid in the duodenum has been neutralized, when the acid in the stomach again relaxes the pylorus and the chyme is injected into the


duodenum. This alternation of movement, the opening and closing of the pylorus, continues until the stomach is completely emptied.

Retention of the stomach contents is not a disease in itself, but a symptom complex. Different names have been given it, such as dilatation of the stomach, ectasia ventriculi, gastrectasis, isochymia, and motor insufficiency of the second degree. The cause of the condition is usually an obstruction of the pylorus; and since the pyloric stenosis eventually produces a complete pathologic picture, it has become customary to speak of gastric retention as a separate affection.

In retention due to stenosis the first effect upon the musculature of the stomach is hypertrophy; but as the pyloric obstruction becomes less and less permeable, muscular weakness and gastric dilatation result.

If the pylorus is functionally inefficient owing to a constricted lumen, motor disturbance must follow. The fundus may be compared to the auricle and the pylorus to the ventricle of the heart. In mitral regurgitation there is at first a compensating hypertrophy of the left ventricle; but as soon as this compensation is broken, dilatation occurs. This same process of hypertrophy and dilatation of the stomach musculature occurs in stenosis of the pylorus.

At one time the opinion prevailed among the clinicians that abnormality in the size or position of the stomach was largely responsible for motor disturbances. It has been found, however, that greatly dilated and ptotic stomachs do not of necessity interfere with gastric motility. They are not pathologic per se.

The absolute size of a stomach is of no significance; a large and apparently dilated stomach may be functionally efficient. Ewald has given the name "megalogastria" to the normally large stomach. The material point in the diagnosis of gastric retention is not size, but stagnation of contents. A stomach in which the food contents are stagnant because they cannot be evacuated is dilated in the clinical sense.

A stomach in health should empty itself of a large meal in seven hours. The term "motor insufficiency of the first or second degree" has been given to disturbances in the motility of the stomach. In motor insufficiency of the first degree the evacuation of the stomach, though complete, is retarded. In motor insufficiency of the second degree the stomach has entirely lost the ability to expel its contents; that is, food residues remain in the stomach permanently, inducing stagnation; and as a consequence of this chronic condition of gastric insufficiency, dilatation of the stomach ensues.
Motor insufficiency of the first degree is contingent upon a primary relaxation of the muscular wall of the stomach, or a loss of gastric tonus. This condition, which is often found, is known clinically as gastric atony or myasthenia. In gastric atony the muscles may be so greatly distended by large quantities of food as to constitute a condition of transient dilatation of the stomach, but this condition must be differentiated from established or permanent dilatation. Should a person with a normal musculature drink a sufficient quantity of water, the lower border of the stomach would descend to the level of the umbilicus, as shown by gastric dullness or the x-ray; but an atonic stomach may be so distended by fluids that the lower border falls below this point. Splashing sounds elicited when the stomach should be empty help to confirm the diagnosis of atony. The stomach in a condition of atony contains food remnants seven hours after the ingestion of a full meal; it, however, empties itself completely during the night after a full meal. This is the all-important point in arriving at a positive clinical diagnosis of atony.

In motor insufficiency of the second degree there is an obstruction to the pyloric outlet. The musculature is hypertonic rather than atonic. The gastric walls are hypertrophied from the peristaltic movements of the stomach in its persistent efforts to empty itself. Careful clinical and anatomic examinations have shown us that stenosis of the pylorus is the cause of motor insufficiency of the second degree. The lumen of the pylorus may be narrowed from the inside or from the outside; it may be cicatrized and contracted from the healing of gastric ulcers, or there may be cicatricial tissue as a result of healed perforations from biliary calculi. Spastic stenosis of the pylorus is by no means a rare condition; it is caused by the irritating effect of the ingesta upon erosion or fissure of the pylorus or by an abnormally high degree of gastric acidity. This closure of the pylorus is at first periodic (pylorospasm), but when the attacks become more frequent there results a permanent stenosis. Hypertrophy of the pylorus may result from chronic gastritis, angulation from gastrophtosis, perigastric adhesions, epigastric hernia, or repeated injuries in this portion of the stomach. In hypertrophic changes in the pylorus, the process is slowly progressive. These cases pass from mechanical motor insufficiency (atony), to motor insufficiency of the second degree (dilatation).

Syphilis may become an etiologic factor in chronic hypertrophy of the pylorus. Internal stenosis resulting from malignant
tumors is by no means rare. Polypi and myomata are occasionally met with. Adhesions of the stomach to neighbouring organs or to abdominal tumors may cause pyloric stenosis by compression or by bending the pylorus upon itself. Among the more remote causes a right movable kidney may be mentioned.

Though pyloric stenosis may be the starting point of gastric dilatation, this result does not follow so long as the stomach musculature is capable of overcoming the obstruction. Stenosis which develops slowly leads to hypertrophy of the musculature precisely as in valvular insufficiency. This compensation may render efficient service for a long time—under certain circumstances for life. But indiscretion in diet may throw too much work upon the hypertrophic musculature, or the stenosis may increase by cicatization; in either case, retention of the gastric contents is apt to follow, with consequent dilatation of the stomach. We may say that dilatation of the stomach is a pyloric affection in the stage of disturbed muscular compensation.

It was not until Kussmaul introduced the use of the stomach tube that a complete revolution in the diagnosis and treatment of retention of the stomach contents was rendered possible. A precise diagnosis cannot be made without the aid of the stomach tube; but with this aid and intelligent, systematic examination of the stomach contents, the physician may make an early and accurate diagnosis and save the patient much suffering.

Next to ulcer, carcinoma of the pylorus is the most important and dangerous cause of occlusion of the pyloric lumen. The differentiation is often a very difficult one. A tumor may be so small and smooth as to entirely escape palpation, and there may be nothing but the motor disturbance to indicate stenosis.

A grave complication of ulcer is perigastritis. Adhesions may change the lumen of the pylorus by displacement and distortion. Cholecystitis may lead to the same result, as it may impede the motility of the pylorus by adhesions, forming the cobwebs of Morris. I recall a case of gastric retention where all the clinical symptoms pointed to a carcinomatous affection. Stagnation was present with lactic acid, pus and blood in the gastric contents. At operation the stomach was dilated, but there was no tumor. Instead, there was found an infected gall-bladder, with gall-stones and adhesions. The gall-stones were removed, the bladder drained, and the patient made a complete recovery.

An exact anamnnesia assists greatly in making out the actual cause of the affection. The various data of the entire course
of the affection should be carefully recorded before a physical examination is made. An affection that dates back several years is probably not malignant, but it should always be remembered that an old ulcer may have become carcinomatous.

By far the most important symptom of gastric retention is vomiting, which is usually profuse. At first it does not occur often, but the intervals continue to grow shorter until at last large quantities, apparently larger than those ingested, are vomited every day. The vomitus will contain food remnants many days old, for food that is not readily digestible may remain in the stomach for weeks.

On standing in a sedimentation glass, the vomitus usually separates into three layers. The solid particles, being the heaviest, sink to the bottom; the fluid above is cloudy, and the top layer consists of more or less viscid mucus permeated by gas bubbles. This stratification in three layers is thoroughly characteristic of all forms of gastric retention which are due to or associated with stenosis of the pylorus.

The vomiting of malignant stenosis is totally different, especially after the affection has reached an advanced stage. The vomitus is no longer dilute, but viscid—like a thick soup—and permeated by mucous masses, everything being so closely intermixed that it is difficult to diffuse the mass with water. The odour is peculiarly mouldy, sometimes absolutely putrid, like decomposed tissue. The food remnants are almost unchanged. Meat can be found days after being taken into the stomach, and even farinaceous food is undigested. The appearance of the gastric contents is so characteristic as to be almost sufficient of itself to determine the diagnosis. On the other hand, there may be demonstrable carcinoma when the gastric contents do not present this characteristic appearance.

Admixture of blood in the gastric contents is less frequent in benign stenosis. According to quantity and the time the blood has been stagnant in the stomach, its colour varies from light yellow to dark brown. At times the admixture of blood can only be detected microscopically or chemically. Persistent occult haemorrhages occur in malignant stenosis and they can be demonstrated both in the stomach contents and in the faeces. Profuse hæmatemesis occurs much more frequently in benign stenosis with ulcer than in the malignant form.

The patients often suffer severe pains, which will not subside until the stomach has been emptied by vomiting or lavage. Or the sensation may be simply one of pressure, fullness, and discomfort.
The severe pains are probably the consequence of exaggerated distention from the gases of fermentation. As soon as the patients learn that evacuation of the stomach gives relief they purposely induce vomiting by putting a finger into the throat.

A very uncomfortable manifestation is the constant thirst. Since the water taken into the stomach is neither absorbed nor passed into the duodenum, the body becomes impoverished for fluid. That as much water as possible may be retained within the body (another instance of physiologic compensation), less than the normal proportion is eliminated by the kidneys. Patients are often unable to speak on account of the dryness of the tongue. There is usually constipation, which increases with the increase of stagnation. Insufficient absorption of water and the daily loss of water are responsible for this condition.

Nutrition suffers in all cases, whether the cause of the pyloric affection be malignant or not. Losses in weight of forty to fifty pounds are by no means rare. There are also characteristic peculiarities in the appearance of patients. If the nutritive disturbances are very considerable and there occurs an exacerbation of stagnation and fermentation in debilitated patients, the inanition may result in grave delirium, which will subside if it is possible to improve the digestion.

The examination of patients should include the entire body. Inspection of the abdomen may furnish valuable information. Peristaltic waves from left to right and gradually disappearing at the pylorus may occasionally be seen. This manifestation is most important and decisive of pyloric stenosis. The whole stomach may contract and its outline easily be seen through the abdominal wall. But this phenomenon is not always pronounced and may be absent; cold seems to elicit it most readily. By palpating the wall of the abdomen during this manifestation of "stomach stiffening," the greater curvature can be distinctly perceived.

The succussion sound has been erroneously looked upon as a pathognomonic sign of dilatation of the stomach. In nearly every individual who has ingested large quantities of fluids and whose abdominal walls are somewhat atonic, the succussion sound can be elicited; consequently, a symptom of this kind can only be utilized for diagnostic purposes with a certain measure of precaution. The succussion sound is suspicious if it occurs with an empty stomach in the morning or several hours after a meal, providing no large quantities of liquids have been ingested; but a diagnosis which depends exclusively upon this phenomenon is altogether unreliable.
A question of importance is whether the succussion sound occurs above the umbilicus or below. It is difficult to tell whether the sound proceeds from the stomach or from the intestine, and for this reason great caution is necessary. The succussion sound, present at a time when the stomach should be empty, presupposes a large atonic stomach and is suggestive of dilatation.

The size of the stomach can be easily determined by auscultatory percussion. Inflation of air or carbon dioxide for that purpose is frequently done. The X-ray after ingestion of bismuth is most reliable. When there is stenosis the shadow shows a distorted duodenal cap. After the size of the stomach has been determined, its capacity of distention can be learned by percussing the lower border during lavage after one pint of water has been introduced. The level to which the dullness sinks can in this way be clearly made out.

But nothing short of the stomach tube can furnish a correct diagnosis. The normal stomach should be empty six to seven hours after a test meal, and if the stomach is washed out at this time stagnation, if present, is easily discovered. Again, the patient is given with his evening meal rice, raisins, and prunes, and the contents of the stomach are removed the next morning before breakfast. If the stomach is found to be empty, there is no retention, no matter what size the organ has attained. The persistent presence of food remnants in a fasting stomach is decisive of retention.

Demonstration of lactic acid and the determination of the reaction for hydrochloric acid are of decided importance in determining whether a stenosis is benign or malignant. In nearly all cases of retention which have developed from a pyloric ulcer or its scar, there is hyperchlorhydria. In primary carcinoma there is almost always achlorhydria. Carcinoma must never be excluded, however, because hydrochloric acid secretion is normal or excessive, for when a carcinoma develops on the site of an old ulcer, hyperchlorhydria may persist for life. A decision can only be made after continued observation. The demonstration of occult blood in the feces is of great importance.

Sarcinae and yeast cells are often seen microscopically. Sar-cinae thrive best in the presence of hydrochloric acid and when found in the gastric contents are suggestive of benign stenosis.

Malignant stenosis is characterized by the presence of the lactic acid bacillus of Oppler-Boas, a sign which is almost pathognomonic. However, the demonstration of these bacilli alone should never be made the basis of a diagnosis, as deception is possible.
Roentgen ray examination should never be neglected. In all doubtful cases the presence or absence of a tumor can be rapidly established by means of it, and if a tumor is found to be present the case can be referred to the surgeon at an earlier date than would have been possible with any other method of examination.

The most difficult problem the diagnostician faces is early proof of the benignness or malignity of the underlying affection. This is important because the therapy depends upon it. In case of malignity, nothing but its early recognition can save the patient. We should endeavour, therefore, to arrive at as early a decision as possible by resorting to all applicable methods. Unfortunately, our knowledge and methods of examination are not sufficiently advanced to enable us to make an early and reliable diagnosis with absolute certainty.

The difficulties are least in the presence of a primary pyloric carcinoma. The rapid increase of the stenosis, the accompanying severe mucous catarrh of the stomach, the presence of lactid acid, deficiency of hydrochloric acid, the presence of the Oppler-Boas bacillus, rapid loss of weight, increase of stagnation in spite of careful dieting and regular lavage, occult blood in the faeces, and above all, the demonstration of a pyloric tumor, should secure a prompt diagnosis. But even if no tumor can be felt, a negative diagnosis cannot be safely made without an x-ray examination. Explorative laparotomy does not always admit of a definite decision as to whether there is carcinoma or not.

A secondary carcinoma which has developed on the side of an old ulcer presents insurmountable obstacles to an early diagnosis. Knowing as we do that an ulcer very frequently undergoes carcinomatous degeneration (Mayo), early operation is urgently to be advised.

The treatment of gastric retention is at first always internal; it would be a great mistake to refer every case to the surgeon. The most important point is the diet, which will vary according to the degree of acidity of the stomach contents and the chronicity of the affection. Meat is practically undigestible in cases of anaecidity. Since it is impossible to supply sufficient water for the body's wants by way of the mouth, it is advisable to give small saline enemas several times in the course of the day, or to introduce water through the rectum by the drop method. Lavage is the sovereign means of unloading the stomach, removing fermentation, and decreasing the catarrhal condition. The irrigations should be carried out very thoroughly, for they frequently improve the ap-
petite and stop the vomiting. Cohnheim’s oil treatment is often attended with excellent results. In benign stenosis, surgical intervention should never be resorted to until the patient has been given the benefit of the oil cure. The latter will also favourably influence hypersecretion. Wearing a well fitting stomach binder will give patients great comfort, as it will afford support to the enlarged stomach, facilitating its evacuation.

If in spite of rational treatment, including the dietary, irrigations, etc., retention cannot be influenced; if the urine does not increase in quantity, if there is loss of weight, and if no improvement is obtained either by the rest cure or by the oil treatment, then operation should be advised, even in cases of benign stenosis. Surgical intervention is absolutely indicated as soon as malignity is discovered, unless there be marked metastasis or the tumor has attained to such proportions as to frustrate every hope of success by radical operation. Unfortunately, the idea held out by some surgeons that with the performance of laparotomy the whole situation is cleared up is absolutely wrong, for carcinoma cannot with certainty be distinguished from an inflammatory tumor without the microscope. As a matter of course, early operation should always be advised in suspicious cases.

I have used Einhorn’s pyloric dilator with remarkable success in one case of retention due to benign stenosis. The patient was a man forty-eight years of age. He had been sick nine years. For the last five years the great discomfort he experienced compelled him to wash out his stomach frequently. Pain, and sometimes vomiting, would come on about two hours after meals. At times he would vomit enormous quantities of food that he had taken days before. He had lost thirty pounds in weight; was tired quickly; had backache and was constipated. His stomach contents showed stagnation, with hyperchlorhydria. No Oppler-Boas bacilli could be found, but there was an abundance of sarcinae. The faeces contained no occult blood. The use of the pyloric dilator brought about an apparently complete recovery. The dilator was used only three times during twelve days. The patient improved so rapidly that it was unnecessary to do any more stretching of the pylorus. He regained his weight and strength. It is now eighteen months since the last stretching.

The pyloric dilator consists of a thin rubber tube eighty centimeters long, with a small metal end-piece. Next to this metal piece and fastened to it and the tube, is a tiny rubber balloon covered with silk gauze. The portion of the tube covered by the balloon
is perforated in several places for the passage of air into the balloon, and at the upper end of the tube there is a stopcock and a graduated glass syringe, the latter for inflating the balloon. The balloon being emptied of air, the cock is closed. The end-piece of the dilator is dipped into warm water and introduced into the patient’s pharynx. The patient drinks some water and the dilator moves into the stomach, where it is left undisturbed over night. In the morning, the balloon being now in the duodenum, the stretching is performed. The balloon is first inflated, and as the tube is drawn upward and forward there is a sensation as if the end of the dilator were held tight by something that drags along with it. The balloon is then slightly deflated by drawing on the piston of the syringe. This is done repeatedly until the end of the dilator passes upward through the pylorus.

Bulletin No. 18 of the Australian Bureau of Census and Statistics treats of the subject of smallpox and vaccination. From statistics which are given of 46,136 cases of smallpox which occurred during various epidemics in the United Kingdom, it is seen that the death rate among the unvaccinated was over three times as great as that amongst the vaccinated, but the number of vaccinated persons attacked was three times as great as that of the unvaccinated: this is probably due to a large extent to the preponderance of vaccinated persons in the community. In Japan, where vaccination has been rigidly enforced since 1885, 79,806 cases of smallpox occurred during the years 1896-1910, and the death rate was 20 per cent. So far as the effect of vaccination upon the severity of the infection is concerned, the figures given show that while in unvaccinated cases 73 per cent were severe, in vaccinated cases this was true of only 17 per cent., that is they were coherent or confluent cases. The figures given, however, are insufficient to allow of any positive deduction. The rate of attack with smallpox seems to vary with age, being much greater with persons under ten years. In England and Wales, the deaths due to smallpox during the thirty-five years elapsing between 1876 and 1910 numbered 30,349; the deaths from chicken-pox during the same period numbered 3,800, and those from cow-pox and other effects of vaccination, 1,309. The Bulletin also contains comparative statistics of deaths from smallpox, measles, and scarlet fever in various countries during the period from 1881 to 1910.
NOT many years ago it was often asserted that there was no proof that there existed a definite physiologic disturbance producing spasm of the pylorus, except in cases of stenosis, pyloric ulcer, cancer or inflammation. To-day we have sufficient evidence that there occurs functional spasm of the pylorus, with or without local structural disease at that point.

This paper deals with: first, the nature of pyloric spasm; secondly, the symptoms of pyloric spasm; the meaning and interpretation of these symptoms, as to whether the spasm has a local or a remote exciting cause; thirdly, the treatment of pyloric spasm; referring not only to relief of the spasticity, but to the removal of causes that excite it.

The Nature of Pyloric Spasm

The circular muscle fibres of the pylorus exercise a sphincter-like closure of the gastric outlet, as the similar muscle fibres at the cardiac orifice act to close the inlet of the stomach. Experimental studies show that there exists in the walls of the stomach an inherent myogenic power of contraction, even when all the nerves going to the organ have been severed, perhaps through the action of the contained ganglia and nerves; but these studies also show that under ordinary physiologic conditions, the contraction of the stomach including that which is shown in peristalsis, and especially that shown in the vigorous contraction which closes respectively the cardiac and pyloric openings, are produced through nerve impulses passing down the vagi. Associated with the contraction of the muscle layers of the stomach is muscle tonus. Although allied, contractility and tonicity are not identical. They appear to bear the same relationship to each other in the stomach that exists between them in the muscle of the heart.

The stomach in health possesses the power of marked tonicity and remarkable contractility; yet, under ordinary stimulus, only moderate manifestations of this power are observable. In health, during gastric digestion, the contraction of the cardiac opening of the stomach is practically continuous, while the pyloric contraction is intermittent. The intermittent relaxation of the gastric outlet during digestion is partly in response to the presence of an alkaline content in the duodenum and an acid content in the stomach.

Under these states of chemical reaction the pylorus relaxes and permits the discharge of acid stomach contents into the first part of the duodenum. When this has occurred, the so-called duodenal reflex is excited, and the pylorus contracts and closes. Having recognized the actual presence of this reciprocal mechanism there is a temptation to explain it as being merely an illustration of the antagonism that exists between the sympathetic and autonomic nerves. That there is really such a physiologic antagonism is generally admitted. This conception has been strengthened by recent physiologic experiments. The question was ably discussed by Dr. Barker before the Association of American Physicians in 1912. In Germany, Eppinger and Hess, among others, have attempted to show how to apply the knowledge gained by the experimental use of drugs to the relief of pathologic conditions in which there occurred a disturbance between the action of sympatheticotonic and vagotonic nerves.

It is a fascinating subject, and it would be of practical importance, if we could be sure that the conclusions reached were safely grounded. As relates to the behaviour of the pylorus, it would be important if we could know that it relaxes in response to sympathetic nerve stimulation, and that it contracts in response to vagus nerve excitation. A review of the evidence indicates that these are actually the facts; but, unfortunately for a vacation state of mind, not all the facts. The influences controlling the movements of the pylorus are complicated and some are not yet understood. However, something is gained by recognizing this antagonism in nerve action.

Let us suppose that by the entrance of acid chyme into the duodenum, a reflex excites the pylorus to close, and that in this contraction, the action of the vagus nerve is involved. Let us suppose that in the absence of chemical stimulus in the duodenum, the sympathetic nerves act to relax the pylorus.

Now, admitting these facts, what causes pyloric spasm? What occasions functional block to the onward flow of the ali-
mcentary stream? The answer may be general, or it may be somewhat specific. In general, the cause of pyloric spasm is anything that will excite exaggerated spasticity of the pyloric sphincter; either over-spasticity inherent in the muscle or communicated to it through over-irritation of vagotonic nerve fibres. Specifically, pyloric spasm may result from over-acidity of gastric contents; that is, long-continued over-stimulation of the duodenal reflex. This is particularly true when at the same time there exist exposed nerve endings, from some local disease at the pylorus or duodenum; such as erosion, fissure, ulcer, inflammation, or infiltration. These conditions may suffice to produce spasm even without the assistance of the acid gastric juice; in other words, when there is only moderate acidity present, or none at all. The combination of circumstances most perniciously successful in inducing the spasm is an irritable lesion, for instance, peptic ulcer, duodenal or pyloric, aggravated by the action of gastric juice rich in hydrochloric acid and enzyme, pressed onward by over-vigorous gastric peristalsis.

When there is duodenal ulcer, or cancer, or acute duodenitis, the part is extremely resentful to the effect of acid chyme. This is readily understood. However, pyloric spasm of intensity and persistency equal to that produced in duodenal ulcer may be observed when there is no local lesion at the duodenum or pylorus. How occasioned? Often it is from cholecystitis. The reason is self-evident. When the duodenum is stimulated by the presence of acid chyme, the gall-bladder is excited to activity. An inflamed gall-bladder may sleep if undisturbed, but it is like an angry beast when roused. It seeks to obtain rest by exciting a vagotonic spasm of the pylorus.

Yet there are many other causes of spasm; with some the modus operandi is similar to that just described. Thus pyloric spasm is excited by cancer of the small or large intestine, by enterocolitis, appendicitis, cecal stasis, etc. These several causes of the condition are readily understood, and further explanation will be omitted, it being evident that over-spasticity of the pylorus at times results from irritation arising outside the digestive tract. I have met with it in cases of stone in the bladder, in uterine retrodisplacement and in nephritis. Also, although more rarely, it follows eyestrain, psychasthenia and nervous shock. So much for the nature of pyloric spasm; now as the second point, viz,—
The Symptoms of Pyloric Spasm and their Interpretation

Not only do we need to recognize the presence of the condition but we should seek to locate its point of inception.

The symptoms vary in intensity with the degree of spasm and gastric tonicity. When these occur with moderate intensity there may be experienced only an unpleasant sensation of pressure or tension in the epigastrium. There usually is produced a sort of sympathetic motor disturbance at the cardia; it also may contract too forcibly, or instead of persisting in its closure, the cardia relaxes from time to time, thus allowing the upward discharge of gas or other stomach contents. This is the origin of the eructation and regurgitation which the patient supposes to depend upon gastric fermentation. He describes these, and the physician too often accepts the interpretation as evidence of too much gas and too much acid. Such interpretation is often erroneous; fermentation is usually not present. One may suffer from gaseous eructation or from heart-burn without the presence in the stomach of an abnormal amount of either gas or acid. There may be no fault in gastric chemistry, no more gas than is usually present, and yet the disagreeable eructation and water brash occur. The fault is here a purely motor disturbance and, although the result of an over-patulous or over-irritable cardiac orifice, the trouble often is initiated at the pylorus and in the pyloric third of the stomach, the result of spasm and excessive tonus.

Although these events, belching of gas and sour stomach, may occur without unusual stimulus by gas or acid within the stomach, it is well known that when fermentation and abundant gas formation, or a high degree of acidity, are present in the stomach, there is ordinarily set up motor disturbance and belching of gas and water brash are experienced. However, even here the modus operandi is through the motor mechanism. There must occur the relaxation of the cardia for the escape into the esophagus of gas and of the sour contents. Heart-burn is usually caused by a stomach contents regurgitated into the esophagus.

While gastric over-acidity often sets into operation the cardio-esophageal symptoms here described, this same over-acidity leads to pyloric spasm. The pyloric spasticity may result from too great stimulation of the pylorus by the acid, or by unusual excitation of the duodenum and consequent reflex closure of the pylorus; the degree of intensity in pyloric contraction corresponds to the extent of the over-stimulation, or to over-excitability, or both. Of course,
the reflex would be greatly increased in case there is an irritable lesion in the pylorus or duodenum.

The symptoms of motor disturbance of the stomach, without excessive acidity and without a lesion in the vicinity of the pylorus, are of moderate intensity and, save when taking place in a neurotic or hyperesthetic patient, occasion symptoms that are of small importance. These symptoms are intensified in case of hyperchlorhydria, and they become almost unbearable when there are present both an irritable pyloric lesion and hyperchlorhydria. It usually, but not invariably, happens that with an irritable lesion there is also hyperchlorhydria. This is partly owing to the fact that pyloric spasticity produced by the lesion, for instance, peptic ulcer, prevents the escape of the acid chyme, and leads to over-acidity and Reichmann's syndrome.

Now to examine more critically the symptoms as produced by various degrees of pyloric spasticity, it will be found that they usually correspond with the intensity of the local irritation. It will be found that there is merely an excitable motor state of the stomach, there results but moderate discomfort. This takes the form of a sense of fulness relieved by belching, or occasional sourness relieved by a simple carminative.

When there is hyperchlorhydria, there is felt not only the sense of fulness in the epigastrium, but a burning sensation, a feeling of pressure, at times somewhat painful; there may be functional disturbance of the heart or liver, with constipation and headache. The symptoms are not so readily overcome; in fact it may require much attention to diet and the taking of antacid remedies in full doses in order to procure relief.

When there is an active ulcer at the pylorus or duodenum, with over-acidity, there is set up spastic closure of the pylorus of such intensity, gastric tonus of such extent, that peristalsis is halted, that the upward discharge of stomach contents ceases. The pyloric extremity is, as it were, pinched by its own contraction. There is marked distress and localized pain. Often this is not experienced until an hour or more after meals, when the acid gastric juice escapes into the duodenum. This has been called by Moynihan "hunger pain," and by surgeons is regarded as very diagnostic of duodenal ulcer. It is diagnostic of duodenal ulcer when that lesion induces pyloric spasm. The pain is produced by the spasm directly and by the ulcer indirectly. Anything that will produce intense pyloric spasm may give rise to the so-called "hunger pain." This symptom, therefore, has not the certain diagnostic value of duodenal ulcer which is commonly attributed to it.
It may occur without duodenal ulcer, and conversely, duodenal ulcer may occur without "hunger pain." There exists to-day an exaggerated idea of the importance of the symptom as an indication of duodenal ulcer, and a misconception as to its nature and origin. These facts may be verified by an unprejudiced analysis of cases, by avoiding leading questions in anamnesis, and by the observation of the results of operations and autopsies.

When pyloric spasm is set up by irritation of the gall-bladder or appendix, the symptoms of gastric motor derangement, including pyloric spasm, are more apt to occur soon after meals than is true when these symptoms follow ulcer of the duodenum or pylorus. This, however, is not invariably the case; the pain excited by gall-bladder or appendix may be delayed two hours or more after eating.

Pyloric spasm and the pain that it causes is often promptly relieved by eating. Dr. Crile says, "The man who carries a cracker in his pocket has duodenal ulcer." This is a capital epigram, but like most epigrams needs serious modifications before it is religiously applied.

We are so much interested in observing the most striking manifestations of pyloric spasm (for instance, as they occur in duodenal ulcer, and particularly the symptom of "hunger pain") that we are led to overlook the numerous cases in which there exists pyloric spasm of minor degree. But it is well to recognize pyloric spasm; it is usually fraught with meaning; however, it may mean widely different things, that is, it may be produced from irritation arising in divers regions. The confusing side of the matter, the difficulty of deciding upon the presence of pyloric spasm, depends upon the facts that the symptoms which the condition produces are not uniform. Here is a list of some of the most important manifestations: pain, epigastric tenderness, sour stomach, gaseous eructations, vomiting which may become incoercible, a sensation of pressure or painful tension in the epigastric region, a definite area of resistance on palpation (located at the pylorus where it assumes the form of a small tumor the size of a walnut, or over the lower part of the stomach, where it produces a rather firm but elastic resistance at the costal arch, especially between the left costal border and the median line).

A peculiarity of this resistance is, that, whether in the form of a pyloric tumor, or a more general resistance caused by gastric spasm, it may be felt to relax occasionally under the palpating hand. When this relaxation occurs the symptoms subside, to recur on the reappearance of the resistance or tumor, which in-
dicates the return of spasm. This physical sign is very significant and useful in physical diagnosis.

The vomiting produced by pyloric spasm varies in type. It may be persistent when not only the aliment is rejected, but painful retching may occur with the ejection of watery mucus, often highly acid and sometimes containing brownish particles of blood pigment, or free blood occurring in streaks or specks.

Of diagnostic importance is the prompt disappearance of the symptoms with the subsidence of the spasm. The reason that this relation of cause and effect is not oftener noticed lies in the fact that the irritability of the pyloric end of the stomach is so great that slight causes are sufficient to reëxcite the spasm when it has subsided. A state of gastric relaxation must continue for a time before the patient recognizes that a calm has followed.

By patient bedside study, by long continued, careful palpation, the physician may convince himself of the relationship that exists between the spasmodic state of the stomach, and the pain, vomiting, regurgitation and sense of pressure which this spasmodic condition produces.

I need scarcely say to physicians that in the symptoms here described we recognise familiar symptoms of appendicitis, cholecystitic, duodenal and gastric ulcer, duodenitis, gastritis, as well as functional hyperchlorhydria, perhaps the outcome of eye-strain, nephroptosis, pelvic disease, etc. It is well for us to understand in what manner these symptoms are produced; for then we may better interpret their meaning and perhaps the more easily overcome them.

The Treatment of Pyloric Spasm

First as to that treatment which is directed towards removing the underlying condition. Of course, this may often mean surgical intervention; i. e. an appendectomy, a cholecystostomy, or a gastro-enterostomy. However, the immediate need of such procedures may seem less when the precise and imminent cause of the symptoms is apprehended.

The remarkable efficiency of the prescription known as the "gastric sedative" in various types of irritable stomach is readily explained when we recall the nature of pyloric spasm. We may better understand the reason of the relief that ensues upon a clyster of chloral and bromides, or upon a "hypo" of codein, if we keep in mind the nature of pyloric spasm. Thus also may be found an explanation for the beneficial effects of hot fomentations or applications of ice.
Secondly, the treatment aimed at the immediate and direct relaxation of the spasm. There are as yet but few remedies known to us that act especially upon vagotonic fibres of the pneumogastric to induce relaxation. Even these few have other and more general effects. However, we may employ some of these for their selective action and, temporarily, disregard their other action. Of course to some extent we act from this point of view when we employ antacids and anti-spasmodics, not to mention anodynes and heat or cold. Yet there remain a few agents that may be used rather more specifically. One of these is atropine in full doses. This drug, in a proportion of cases, by exercising an inhibiting effect upon the pneumogastric, cuts out the vagotonic element in the pyloric spasm and relieves the condition as by magic. Another agent I have been led to try experimentally and, in a number of cases, with remarkably satisfactory results: that is adrenalin. The physiologists have found in animal experiments that adrenalin brings about an instantaneous although rather brief relaxation of the stomach, making it for the time being atonic, except that it seems not to effect to the same degree the sphincters of the pylorus and cardia. Notwithstanding the exception, I tried adrenalin hypodermically in a case of painful pyloric spasm; the relief was quick and, somewhat to my surprise, lasting. Since then I have repeated the trial in several cases; it has not uniformly succeeded, but in most, and these the most characteristic, it has given complete relief. In two the spastic pylorus was palpable and the tumor could be felt to melt away under my hand in a most gratifying manner, and coincidently the symptoms disappeared.

Before closing I should refer to the happy effect of prolonged gastric lavage, using water at the temperature of 105° F., in relieving spasm odic conditions of the stomach. It is not universally successful; but, for that matter, in therapeutics, what is?

The annual meeting of the medical staff of the Regina General Hospital was held October 27th. The election of officers resulted as follows: president, Dr. S. E. Moore; vice-president, Dr. W. S. Coles; secretary-treasurer, Dr. O. E. Rothwell.
ON SOME CLINICAL ASPECTS OF GASTRIC DISEASE

BY C. F. MARTIN

WHILE the evolution of our knowledge of gastric disease has undergone great changes in recent years, its successful practical application has scarcely been commensurate with the time and energy spent.

It is, of course, obvious to anyone who has followed the recent literature, that our conception of the stomach, in its anatomical relations, its physiological functions, its pathology and therapeutics, has been subjected to considerable change. Sadly enough in treatment—medical and surgical—our advances have been relatively small.

Anatomical Considerations.—As everyone knows, we have added to our understanding of the position, size, and shape of the stomach: we have discovered that they are normally subject to great variations, and, in consequence, we should not overestimate the importance of many of our usual methods of physical examination.

Although Peplick in 1499, and Magnus Hundt two years later, had already dwelt on the vertical position of the stomach, centuries elapsed before the fact became widely recognized. To-day, by means of the fluorescent screen, we can see the normal stomach lying not transversely, nor obliquely, but vertically in the left hypochondrium, with an air space above, a narrow elongated, tubular, intermediate space, and a lower horizontal portion occupied by the contractile antrum and the pylorus itself. This may be called its vital position, or functional anatomical position, one which is seen only in the closed living body. Once the abdomen is opened, the picture changes and the anatomist, the pathologist, and the surgeon gain a different and, I think, erroneous view of the functioning viscus. For this organ, while at work, is not a hollow organ ready to receive food impassively, but is merely a virtual cavity with closely apposed walls that dilate to form a cavity only when the need arises.

We have been accustomed, too, to think of its position in relation to the umbilicus and xyphoid, but here, again, our Roentgen pictures reveal a fallacy. The umbilicus, depending for its relative position upon the shape of the diaphragm and the conformation of the abdomen generally, is altogether too variable a point for accurate mensuration. The limits of the healthy stomach, moreover, extend much lower than the navel; indeed, we are now so accustomed to its position low down, sometimes almost lying within the pelvis, that we have come to regard the mere position as, in most instances, nothing but a clinical observation and not, per se, an evidence of disease.

If it be true that the stomach be vertically situated, and its normal position variable within such wide limits, our views of gastroptosis must correspondingly change. The old term "vertical stomach" or vertical ptosis of the fish-hook variety, or "crescentic type," explain conditions really not abnormal. I mention this, because clinicians differ so widely in their views on gastroptosis. In those cases where the greater curvature lies unusually low, the predominating factor to consider is the atony, not the ptosis. Many of the French school deny the common existence of ptosis entirely, claiming that in men, at all events, it is never seen, though in multiparous women, with flaccid abdomens, it may not be uncommon. Barret, of Paris, declined to make the diagnosis unless with the fluorescent screen and with his patient in the right lateral decubitus, and defined only such conditions gastroptosis where the greater curvature was separated from the dome of the diaphragm by two inches, or more. To others, again, ptosis means the swinging down and to the left of the middle and pyloric portions of the stomach, and carrying along with it the first part of the duodenum, thereby increasing the vertical length of the viscus.

Mensuration of the stomach, at best, is very unsatisfactory and its position, size and shape vary so much even in the same individual at different times that not even a satisfactory average can be accurately given. The size of the stomach, moreover, gives no clue to its functional powers, nor to its pathological condition, a fact which drives us to the conclusion that the ordinary efforts to outline the stomach (percussion and auscultatory percussion, clapotage, and artificial inflation) are methods of examination with but relatively small practical interest to the clinician.

Increasing knowledge convinces one of the importance of functional over anatomical features. The stomach, be it ever so large or long, is not a pathological one so long as the motor power is good.
To gastrophtosis are accredited all the ills that abdominal viscera inherit, though probably the cause of none. The success of varied treatments demonstrates this. Patients in whom the diagnosis of gastrophtosis is made, improve perhaps on rest, at other times on exercise; cure sometimes follows travel and enjoyment, while at others the success of the treatment is accorded to restrictions, belts and corsets. Some are healed by vaccines, and in a few rare instances despite the intervention of the surgeon. The ptosis per se with good motor power is a negligible factor in disease, and where it exists with dilatation, it is the motor insufficiency which remains as the predominant feature.

Apropos of this question of size and function, I think one should carefully distinguish between atony and motor insufficiency. An atonic stomach examined by the fluorescent screen fills like an inert vessel, the bismuth falls down to the lowest portion, but if the antrum pylori is normal, the food will be sent on to the duodenum within the natural time. In other words, a certain degree of atony does not imply motor insufficiency.

Dilatation is to be defined as a motor insufficiency without regard to size, relations, volume, clapotage, or retraction. (It is in these dilated stomachs, too, that we get bilocation, not a true hour-glass stomach, but a shape due merely to traction on the vertically placed overloaded stomach, and that this is no true hour-glass contraction can be demonstrated with the hand, and pushing the stomach up when its non-bilocular volume and shape will be evident. Operation here is obviously uncalled for.)

The kinking, too, at the pyloric antrum which accompanies the crescentically shaped and lowered viscus, does not of necessity imply motor insufficiency. Atony of the fundus may exist while yet the contractions of the antrum may be sufficient to expel the food within the normal time. Even then though such a deforming kink is present, there is demand for remedial measures and surgeons should beware of trying to improve a condition, which, after all, is a functionally normal one. Surgical interference here adds but a complication to the symptomatology, and renders matters worse instead of better. That the clinical importance of estimating motor insufficiency is more and more acknowledged, is attested by the wealth of its literature in very recent times.

What methods are we to employ to determine motor power? And how attain accurate estimates of the efficiency of the stomach to propel food on its digestive way?

The number of the tests is legion; each specialist has a method
of his own, and while to each a special virtue is attached, there seem no newer ones of such value as to replace those already long in use. Some use water, others oil, some use this, that, and the other food. Some tests make too much, others too little demands on the power. In some the very meal employed inhibits peristalsis and interferes of itself with our estimate. In others again elaborate chemical analyses are made to determine with greater accuracy the amount of food which the stomach has prepared.

To find after a Riegel dinner at night that food contents do, or do not remain next morning, gives one sufficient knowledge as to whether or not continuous retention exists, while the Boas test breakfast informs us of minor degrees with an accuracy that is complete enough for all our practical needs. Other methods bring us no farther in our diagnosis. Take for example the efforts recently described in advocacy of the Bourget-Faber meal with gruel, mince-meat, bread and butter, prunes and cranberries. The advocates of this test classify their cases according as there exists a five-hour, six, eight and twelve-hour retention of 10 c.c. contents. Their conclusions are that where food remains twelve hours in the stomach, pyloric stenosis of the organic type is certain, though they admit that a spastic stenosis may also be present under similar conditions suggesting the presence of an ulcer, or gall-stones, or other irritant which causes spasticity. If remnants are found only after five or six hours, they diagnose organic disease, such as ulcer, cancer, or gastritis, admitting, however, the possibility of similar mild retention in any chronic gastric disease, hypersecretion in intestinal disorder, or even with general asthenia. In other words then, fallibility characterizes these newer methods just as in those long established.

Strauss' method, again, seems simple enough. The contents of the ordinary test breakfast are allowed to stand in a graduated cylinder for two hours. If the solid portion exceeds the liquid, there is motor insufficiency,—if less than one-half the total, hypersecretion. Zweig used the centrifuge for his estimation, while Elsner took no account of the liquid but drew his conclusions from the solid content alone.

A fallacy exists in all these methods, for we never know how successfully our test meals have been removed, and the relation of solids and liquids depends as much on mastication as on some other factors of digestion, while mucus, if present, adds to the volume of solids. Some tests of motor power depend largely on the secretory findings. In addition to the quantitative and qualitative ap-
pearance of the removed contents, it is of some value to establish the ratio between free HCl and total acidity. Relatively little free HCl suggests impaired motility, the acid being absorbed by the proteins, which are delayed in transit. But in these cases a total increase of secretion is present.

Ever since Bickel demonstrated that the percentage of HCl secreted in the gastric juice never varies, we have known that our clinical variations are dependent only on the total amount of juice secreted, the presence of mucus, and the rapidity with which digested food leaves the stomach. High ratios in free and in total acidity would then indicate impaired motility from whatever cause,—for it is always possible to find hypersecretion in association with functional as with organic disease—notwithstanding the teaching to the contrary.

An interesting observation of Sumner's which perhaps calls for confirmation is the marked difference in acidities of food contents aspirated from near the cardia and deeper down in the stomach, showing the graduated distribution of food and gastric juice.

Testing of the motor efficiency by the skiagram and bismuth meal affords perhaps as efficient a method as those already in use. Nevertheless, comparative tests of the bismuth meal test and that of Riegel, show discrepancies in the duration of the contents that are often surprising. Food of a meal has often passed the pylorus when in a corresponding time the shadow of the meal still shows on the screen, a fact attributed by some to the inhibitory action of the bismuth on the motor function, which if marked would certainly give a faulty notion of the pathological processes. Such an experience, it need scarcely be said, would be applicable only to the milder cases and could never be a feature of importance in stenosis, but here as with other tests it is only in the milder cases that our diagnostic difficulties arise.

I would suggest that any effort to determine with mathematical accuracy small degrees of motor insufficiency and to base thereupon a differential diagnosis, is apt to lead to faulty conclusions. It is admitted, in the first place, that the normal capacity of the stomach varies within wide limits, and with temporary overfilling, transitory indiscretions, and emotional disturbances, the motor power may easily suffer for a time, not only from day to day, but at different times on the same day. Early organic conditions bring about the same results and there is no means of estimating the causes according to the degree of mild retention.

Much has been recently observed, too, in studying the mode of
evacuation of foodstuffs, and with a very important bearing upon matters clinical. It has been found, for example, that 200 c.c. of water reach the intestines in ten minutes, but if bismuth gum be added, the duration is much increased. Any food, too, if added to the water, delays the propulsion of the water itself, an interesting observation which probably serves to explain why mineral waters should not be taken with meals if the complete effect is desired. For the same reason, too, many diuretic waters produce results more readily if given on an empty stomach, reaching the intestine earlier for absorption. For the same reason, too, their effect on intestinal digestion is more noticeable.

It is interesting in this connexion to observe that our tables of digestibility of food stuffs are to a very large extent based on their time of duration in the stomach, but in view of what has just been said, the error in this is obvious. The stomach has multiple functions, motor, chemical, osmotic and absorptive. Fluids which have no nutritive contents use the stomach as a mere transitory dwelling and demand only motor power from the organ. Milk, for example, remains in the stomach from two to three hours, an egg much less time, and yet stomachs which cannot digest eggs can often tolerate milk. Oil remains less long in the stomach than does milk, and yet stomachs which cannot endure milk, can perfectly tolerate oil. Many factors, indeed, determine digestibility, quite apart from the motor power. The food will not remain if it should be digested in the intestines, and if its volume allows it to pass the pylorus, nor, again, if it excites motor power and secretion enough to hasten it onward. Food, too, which perhaps remains but the normal time in the stomach may yet be undigested in the ordinary sense of the word. Levin pere in his interesting observations has demonstrated in detail the fallaciousness of such a test and the limitations in practice of these tables of digestion. Much more important, then, than the position of the stomach, is its muscular tone, which, as has just been said, must be distinguished from its contractile power. Most of the contractile power of the stomach lies in the lower third, the antrum or pyloric end, whereas its tone may be described as the power to adapt itself to food and close round it after digestion. In the normal stomach one sees the food held in suspension in the upper zone of the vertical viscus, waiting to be grasped by the tubular portion which widens transversely as the food increases in quantity, and never allows the food to fall of itself to the lower portion. Where atony exists, on the other hand, the bismuth may be seen descending quickly to the bottom, and gradually filling up the stomach from below.
Cannon's experiments have thrown much light on the subject of gastric tone. Section of the vagi is immediately followed by paralysis of the muscular wall, but the subsequent addition of food to the stomach, brings about a recovery of peristalsis. Section of the splanchnics, on the other hand, brings no change. Section of both vagi and splanchnics induces paralysis, but after some days tonic contraction occurs. Now if we examine the stomach in situ, under salt solution, we find it sometimes flabby, sometimes contracted. Add food in each instance and in the one case the viscus remains flabby and receives the food impassively, in the second case we get peristalsis. The difference is not hard to explain. All peristalsis is preceded by a tonic state, with rising intragastric pressure, such as would be induced by the presence of food. Distension is then necessary as a stimulus; but distension alone is not sufficient (e.g., flabby, atonic state), for the muscle must be in a state to be stretched, i.e., the fibres must be shortened and resilient.

It is just here that the important function of the vagus system is demonstrated. The vagi prepare the stomach for receiving food by setting its neuromusculature in a tonic state, making it exert a tension, so that when the food enters, the viscus can contract upon it (peristalsis). Probably, therefore, the vagi adapt the size of the stomach to the varying amount of food. Tonus, therefore, is important. It supplies the resiliency that causes tension, so that contraction of smooth muscle-walled visera occurs.

Rhythmicity of this contraction is due to the combined refractory stage during contraction, and the stage of irritability during relaxation; tonicity then is necessary for rhythmicity, and the lack of it, as in the atonic stomach, brings about motor insufficiency. Worry can bring about appreciably the same effect. Such are some of the results of Cannon's important research.

It has been suggested that the internal secretions have to do with these stimuli, some acting on one form of nerve supply, some on another. If, for example, we inject epinephrin intravenously, we get cessation of previous peristalsis, just as though the splanchnics had been stimulated, and if this is true of one internal secretion, perhaps some other secretion has its antagonistic effect, and different portions of the gland have even antagonistic results. The observation of Eppinger and Hess seem to bear this out, and they concluded that where an organ is supplied by both sets of nerves they act antagonistically. Smooth muscle cells whose double innervation is preserved in a state of equilibrium, maintain, therefore, a tonus, while disturbances of this equilibrium produce changes in tonus,
increasing it or inhibiting it, according to which nerve system predominates, e.g., while epinephrin acts on the sympathetic, atropin is its antagonist.

This question of motor power and contractility leads me to speak briefly of gastric ulcer and one of the more suggestive views as to its etiology.

Basing his premises on the work of Eppinger and Hess, Bergman has advanced a most interesting theory. The work referred to deals, firstly, with the action of the two antagonistic sets of nervous systems which supply the smooth muscle fibres of the abdominal viscera, the extended vagus and the sympathetic. If the equilibrium which ordinarily maintains tone be disturbed, it induces sometimes spasticity, sometimes flaccidity. Spasm of the gastric muscle is, of course, an obvious and frequent occurrence in gastric ulcer, and just as in spasms of any other smooth muscle tissue, so here it produces pain, e.g., a similar sequence of events occurs in vascular angina, in uterine disturbances, in gall-bladder inflammation, and so on. To a certain extent this might explain the local pain of gastric ulcer, but more than this, the local spasm produces ischaemia by constriction of the vessels of the mucosa and this in turn permits of autodigestion. Lichtenbelt's work bears out this possibility, and Payr has already proved to his satisfaction the circulatory origin of many simple cases of gastric ulcer.

Bergmann regards any vagal nervous irritant, or stimulus, as a cause of local spasm. This irritant, however, or stimulus, acts only under certain constitutional conditions,—conditions which give rise to stigmata of susceptibility to nervous stimuli. He draws attention to the fact that patients with gastric ulcer have many associated conditions which lead to this susceptibility, in other words, they show the symptoms of an abnormal reaction in the visceral system, e.g., hyperchlorhydria, spastic motility of the stomach, spastic constipation, pain, tremor, cold extremities, dermatographism, etc.

Again, this primary stimulus may be a disease, or may be psychic; sometimes appendicitis, sometimes stone in the kidney, precedes a history of gastric ulcer. Rössle who calls gastric ulcer "the second disease" bases in similar views on this theory and on the almost invariable antecedence of some primary cause, organic visceral disease, or psychic disturbance.

This fundamentally nervous origin of gastric ulcer suggests the need of some therapy by means of which spasticity is diminished, and the secretions inhibited, in order that thereby food may be
encouraged to pass on and the healing of the ulcer favoured. Atropin in fulfilling these requirements is warmly advocated—just as in the past—but now with reason founded on experiment.

Whatever be the etiology of gastric ulcer, certainly success has not followed its treatment in a very large proportion of cases.

Statistical evidence has never yet been reliable, for physicians have erred too often in their diagnosis, while the surgeons even with the abdomen exposed are not always—indeed cannot be always—certain of the presence of an ulcer. In many doubtful cases I think a gastroenterostomy is performed, and when no further signs of ulcer develop, it presumably adds one more to their records of success in this form of treatment. Indeed, it has sometimes been my experience that it is more easy to convince a surgeon, than the medical clinician or pathologist, of the presence of an underlying ulcer. Records which can show so many fruitless explorations where ulcer has been suspected, attest sufficiently to the difficulties in diagnosis, for while typical cases are easy of detection, a very large proportion present diagnostic problems of great difficulty.

I do not know if it is justifiable to regard exploration of the abdomen as a serious undertaking, but the physician who looks on his patients with a medical eye cannot fail to see a change; often the operation seems to have added years to their appearance, much of their former vigour has gone, and they are not always so resistant subsequently to the inroads of attack, be it on the viscera, or the nervous system. It would be wrong to decry exploration of the abdomen, but one would like to hear more surgeons repeat the aphorisms of one of our most distinguished colleagues who said, "The more I gather of surgical experience, the less I feel like operating."

X-rays:—The statement has been made that x-rays with the bismuth meal, have replaced laparotomies as a means of diagnosis for ulcer. The earlier view, however, that the bismuth shadow lingering in one localized portion was pathognomonic of simple ulcer, has too often proved fallacious. Bismuth does not remain in ulcers, unless they are penetrating, nor can other ulcers be thus diagnosed unless an actual deformity or stenosis exist.—Baetjer's interesting observation that in duodenal ulcers the stomach empties itself in twenty minutes is but an expression of hypermotility, and though doubtless a valuable adjunct to diagnosis, is perhaps not infallible.

With reference to the medical treatment of gastric ulcer, I would merely like to draw attention to one feature. I refer to
the short duration of our so-called cures, and our apparent indifference to detail. When we consider the unfavourable conditions under which an acute simple gastric ulcer exists and is expected to heal, with irritants of all kinds, motor, mechanical and chemical, interfering with its rest, surely four weeks is but a very short time in which to set our dietetic restrictions. This, I think, may explain to some measure our failures, for success seems more certain the longer the cure is maintained. Suitable rectal alimentation for longer periods, then suitable bland and soothing diet for many weeks, might possibly be productive of healing, at the same time continuing in larger doses over a longer period the drugs which alleviate and soothe, and act efficiently on the etiological factors. Repeated examinations of the stools for occult blood should be persisted in for months before the patient should be allowed to feed indiscriminately.

One might reasonably expect by this means to obviate the necessity of subsequent surgical interference, for if, as our autopsies show, many unsuspected gastric ulcers heal spontaneously, surely with careful medical treatment we might reasonably expect like results where we are previously warned of their existence.

As a physician I do not feel competent to discuss the surgical aspect of gastric ulcer, but I think that experience teaches everyone that the surgical treatment of this disease is still far from satisfactory. No one will deny the remarkable results which are achieved in very many patients on whom gastro-enterostomy has been performed, but the enthusiasm with which some surgeons advocate the indiscriminate use of this method of treatment in all cases of chronic gastric ulcer, and their zeal to perform the operation, can, I think, only be due to their inability to see the results. A careful analysis of these cases has indeed never been made, by which I mean that the cases have been insufficiently classified to satisfy us with proofs as to where the selections should be made; the tendency is becoming more and more to regard only those cases where marked stenosis exists as being satisfactory in their result, for it is astonishing how many patients upon whom this operation has been done indiscriminately, require either further medical treatment, or renewed operations. If the surgeons do not hear of these cases, certainly the physicians do.

If, indeed, the operation be performed where stenosis exists, or in case of a chronic fibroid ulcer, a complete artificial stenosis of the pylorus is created, and if the short circuit be so placed that not the fundus but the antrum is selected for the new opening, no
doubt results are very much superior to those in which indiscriminate operations are performed. But where operations are recommended, no matter where the ulcer lies, on the basis that perforation or fatal hæmorrhage may occur, or that such conditions may lead to ultimate ulcer, I do not think that one would find satisfactory results except in a very small proportion of cases. Examine, if you will, by the fluorescent screen to see what becomes of the new opening, and one will find wherever the pylorus is patent food will pass through its accustomed passage rather than through the new opening. Small wonder then that Mr. Lane scoffs at the idea of gastro-enterostomy, and prefers a short intestinal circuit of his own.

In conclusion I would like to suggest that in preference to limiting the means of diagnosis to one or two special methods, such as x-rays, or exploratory laparotomy, or the newer and more elaborate chemical estimations of the motor power, that the surgeon and physician should jointly consider every point of view in diagnosis, before urging a radical cure of a disease that, after all, may not exist.

The next award of the Alvaringa prize of one hundred and eighty dollars will be made by the College of Physicians of Philadelphia on July 14th, 1914, provided an essay is submitted which, in the opinion of the committee, is worthy of the award. Essays may be upon any subject in medicine, but they must not have been previously published and they must be typewritten, either in the English language or accompanied by an English translation; they must be in the hands of the secretary, Dr. Thomas R. Neilson, 19 South Twenty-second Street, Philadelphia, on or before May 1st, 1914.
FRONTAL TUMOURS*

BY R. W. MANN, M.D., C.M.

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The symptoms of any case of intracranial neoplasm may be classified into (1) general, due to increased intracranial pressure, and (2) local, depending upon the part of the brain affected and due to a disturbance in function of the particular region attacked. The general symptoms include headache, vomiting, optic neuritis, vertigo, and mental failure. When accompanied by a history extending over several weeks or months the general symptoms are usually sufficient to establish the diagnosis of an intracranial tumour. It might be mentioned in passing that Bright's disease, lead poisoning, and the severe anaemias have sometimes been confused with brain disease on account of the headache, vomiting, dizziness, and retinal changes which may manifest themselves.

After a general diagnosis of brain tumour has been made the exact position of the growth should be determined if possible, and in order to do this we depend upon the local or localizing symptoms. As indicated above, these localizing symptoms vary according to the region attacked, and their value depends upon our knowledge of the anatomical seats of the various functions. When certain parts of the brain are diseased there are no definite symptoms to indicate a disturbance of function. These parts, the functions of which are obscure or not easily investigated, are usually known as silent areas. When any one of these silent areas is the seat of a tumour we must attempt to form a diagnosis by a careful consideration of the history of the case and by the elimination of all regions which seem to be unlikely sites. In some cases the per-

*From the service of Dr. H. B. Anderson, St. Michael's Hospital.
version of functions occasioned in neighbouring areas may be easy to recognize, and may at once suggest a certain silent area as the primary seat of disease.

The frontal lobe is usually included amongst the silent areas, and this obviously implies that disease of the frontal region may be exceedingly difficult to recognize. In the frontal lobe we include only the region anterior to the praecentral sulcus. Since the higher intellectual functions are known to have their seat in this region it might be natural to expect an early mental change in any case of frontal disease. In some cases we do find a noticeable change in conduct, with loss of the power of orientation, morbid fears, anosmia, insomnia, amnesia, illusions, hallucinations, delusions, etc. In other cases remarkably few signs may occur.

Edwin Bramwell reports a case of a large glioma of the right frontal lobe, which was repeatedly examined during life by competent observers. No localizing clue was obtained until just before death, which was sudden. There was no anosmia and no discernible mental change, with the exception of some irritability of temper. For the four years previous to death the patient had been the subject of general epileptic seizures. In four cases reported by Bruns there were symptoms of cerebellar disease, such as vertigo, lurching, hypotonus and weakness of muscles on the side of the lesion, tremors, incoördination and nystagmus. In addition there was some degree of paresis of a hemiplegic or monoplegic character on the opposite side of the body.

In five out of twenty-four cases reported by Dr. S. A. K. Wilson, of the National Hospital, London, there were cerebellar symptoms. These cerebellar symptoms are usually said to be due to a backward pressure on the cerebellum, but Strümpell thinks that they are more likely to be due to involvement of the centre in the Rolandic area which presides over the movements of the trunk muscles. Dieulafoy quotes several cases in which there was no psychical or intellectual trouble whatever. He also quotes several cases of glioma and gumma of the first and second frontal convolutions, giving rise to Jacksonian epilepsy, and therefore suggesting involvement of the Rolandic area. In a summary of his remarks he states that we have no sign or symptom which will enable us to differentiate Rolandic from frontal Jacksonian epilepsy. It is evident that Dieulafoy considers disease of the frontal region capable of causing Jacksonian epilepsy, while the adjacent Rolandic area is still performing its functions normally.

It must also be remembered that in those cases which do not
show any definite general symptoms of pressure the intellectual changes which may be present are often very suggestive of general paralysis of the insane, or of the mental deterioration which may result from a prolonged use of alcohol. In these cases the Wassermann reaction, the results from the iodide, mercurial or salvarsan treatment, together with a careful enquiry into the history of the condition, are often helpful in arriving at a diagnosis.

The changes in the reflexes may be of great importance, not so much as a local manifestation, but as a general sign. The deep reflexes are usually accentuated. The plantar reflexes are frequently absent, or may be extensor in type. The abdominal and epigastric reflexes are often diminished or absent on the side opposite the tumour, and are specially important, owing to the fact that they are likely to be affected very early in the course of the disease. Presumably the reflexes are changed on account of disturbance in the pyramidal system.

After having located the position of the tumour in the frontal region, if that has been possible, the next point to decide is its probable structure. A positive Wassermann reaction or a marked improvement under treatment by salvarsan, mercury, or potassium iodide would naturally suggest a gumma or other syphilitic disease. A positive Calmette or Moro test would point to a tubercular focus, such as a solitary tubercle. The presence of disease in any other part of the body would indicate the possibility of the cerebral lesion being of the same nature. The age of the patient, the history, and the situation in the frontal lobe, would suggest certain varieties of tumours rather than others.

Varicities, with age, and positions in which they are likely to occur.

The following briefly summarises the tumours of the brain in their order of autopsical frequency:

1. Glioma. Is chiefly found in the cortex, pons, or medulla; occurs chiefly in the middle-aged or young. The majority of tumours which develop before adult life are glioma or tubercle.

2. Sarcoma. Sarcomata arise from the meninges, blood vessels, or bone; they are the most common type in adults. The majority of tumours after adult life are either sarcomata or gum-mata.

3. Tuberculoma. Is chiefly basal, and especially in cerebellum; it is by far the most common type in childhood.

4. Gumma. Mostly seen at base of brain or brain-axis. Very frequent in adults from thirty to forty-five. Not so often seen at autopsy, as it is the type which is preëminently amenable to treatment.
6. Parasitic Cysts.

The structure of the tumour, in addition to its location, having been determined, the question of treatment immediately arises. Syphilitic diseases are usually treated by potassium iodide, mercurial compounds, and salvarsan. For tubercular nodules, lumbar puncture and tuberculin may be tried in selected cases. For almost all other varieties of tumours operations should be performed if removal seems possible. In some cases, when the growth is not removable, it may be necessary to trephine, in order to prevent blindness and relieve vomiting and headache.

The following case is one which we recently had the opportunity of studying. The diagnosis of frontal tumour was made during life, but we experienced great difficulty in coming to a conclusion as to the nature of the growth. Before entering and after leaving St. Michael's Hospital, where our observations were made, the patient was under the care of Dr. W. D. McIlmoyle, of Bracebridge, Ontario.

The patient was a male; age forty; married; occupation, hardware salesman.

Complaint: headache, convulsions, and difficulty in walking.

Personal History and Previous Illnesses. He was born in Canada forty years ago, and had never lived outside this country. Some years ago he worked in a factory and at carpentry. For the last six years he had been a hardware salesman. He smoked excessively from youth, but always abstained from the use of alcohol. He had urethritis twenty years ago, but denied any syphilitic affection. Three years ago he had arthritis of the left knee. Some years previous to this he suffered from typhoid fever.

Family History. His father is said to have died of rheumatic fever at the age of sixty. The mother is living and well at seventy. Three sisters died of typhoid fever. One brother and one sister are alive and well. There is no history of tuberculosis or of mental or nervous disease in any member of the family, or relations.

History of Present Illness. The first symptoms began in June, 1912, when the patient’s wife was wakened in the middle of the night by a noise, which she thought originated in her husband’s throat. This noise was followed by a jerking of the limbs. On turning the patient on to his back he became quite still, and subsequently began to snore. He is said to have bitten his tongue during this attack, but not to have passed urine or faeces.

Early in August he had severe frontal and temporal headache
on both sides, more or less continuous, but somewhat worse in the mornings. At this time he also developed marked mental symptoms. These took the form of fits of depression, with crying, irrational talking, asking the same question several times, "sinking feelings," and loss of interest in everything. At the same time he began to experience difficulty in walking, frequently staggering and occasionally falling.

About the middle of September he had fits, in which the face became red, the legs stiffened, and the arms jerked. These lasted for from two to three minutes, and were followed by sleep with stertorous breathing. The attacks recurred several times a day, but with longer intervals between them as time went on. In many of the seizures the left elbow was held in a flexed position for some time. There was no biting of the tongue or incontinence. About the end of September the fits ceased, and the patient gradually became comatose, with occasional lucid intervals. As far as we are able to ascertain there was no rolling of the eyes or rotation of the head, as is common in frontal tumours.

When brought from Bracebridge on October 9th, and admitted to St. Michael's Hospital under Dr. H. B. Anderson, the patient was delirious and had incontinence of urine and faeces. The temperature was 97·4° F., the pulse 68, and respirations 20. The urine was normal. A Wassermann reaction was done by Dr. Gordon Bates soon after admission and several times subsequently with blood serum and with cerebro-spinal fluid. On every occasion the result was negative. An x-ray examination of the head revealed nothing abnormal. The ophthalmic report by Dr. H. A. McCullough was to the effect that there was well marked optic neuritis in both eyes, with loss of accommodation of the pupils to light. On account of the mental condition of the patient the accommodation of the pupils for distance could not be ascertained. Fifteen grains of potassium iodide, three times a day, were ordered, and this dose was continued while the patient remained in the hospital.

We first investigated the condition of the patient on October 21st, twelve days after admission. At this time he was quite conscious and appreciated his surroundings. He complained of loss of memory, and said that he frequently experienced difficulty in regard to orientation in time and place. He was very emotional, sometimes crying without provocation, and at other times exhibiting a vague restlessness and silly jocularity. Articulation, phonation and the quality of the voice were apparently unchanged. The
naso-labial furrow on the left side of the face was not so well marked as on the right. Sensation of the pharynx was dulled and the palate reflex was absent. On phonation the uvula moved slightly to the right. The tongue on protrusion moved slightly to the left. The grips of the hands were strong and equal. The legs also possessed good muscular power, and were apparently equal in size and strength. There was no spasticity in any of the limbs, but the gait was ataxic and Rombergism was well marked. There was no incoordination or tremor in the arms or hands. There was no jaw-jerk, and no tendon reflexes could be elicited in the arms. The knee-jerks were brisk and equal on both sides. There was absence of ankle clonus, and the plantar reflexes, when obtained,
were flexor in type. The abdominal and epigastric reflexes were well marked on the right side, but almost absent on the left. There was no sensory disturbance, except on the palate, as noted above.

On November 27th the patient was discharged from the hospital, partly because it was not certain that he was not suffering from a frontal gumma, which could be influenced by the medicinal treatment just as well at home as in the hospital, and partly because he had expressed himself as unwilling to undergo an operation in case it was decided upon as the proper method of treatment. During his stay in the hospital and for a few weeks subsequent to his discharge the improvement was indeed remarkable. From a state of delirium on admission he recovered to such an extent that he could talk quite rationally and walk without assistance. After his discharge he acquired a voracious appetite and at times had attacks of vomiting. The iodide treatment was continued to the end of the year 1912, when the previous symptoms of mental feebleness began to reappear. In the early part of January, 1913, the condition became rapidly worse. The patient died about the middle of the month.

Dr. McIlmoyle obtained consent for a post-mortem examination, and performed an autopsy under considerable difficulties. The brain was forwarded in a fresh state to Dr. Anderson, who placed it in a hardening solution to prepare it for sectioning.

On superficial examination of the brain in the fresh state, the whole anterior part of the right cerebral hemisphere could be seen to be distinctly larger than the left. Over the enlarged portion the convolutions were somewhat flattened. On palpation over the right frontal and Rolandic areas there was a sense of loss of resistance as compared with the same areas on the opposite side. When hardened the brain was sectioned, and disclosed a tumour with ill-defined margins in the frontal lobe of the right cerebral hemisphere. The extent of the tumour in various directions was as follows: Inferiorly it reached almost to the caput of the caudate nucleus. It was, however, slightly in front of this, and immediately over the roof of the anterior horn of the lateral ventricle: in this locality it most nearly reached the internal capsule, being not more than 1 cm. away from the anterior fibres (Fig. 2). From this lowest point the tumour could be traced in continuity upwards to the surface of the hemisphere at the anterior end of the superior frontal sulcus. On the brain surface it occupied an area of 1.5 cm. in width by 2.5 cm. in length, and equally implicated the gyrus frontalis superior and gyrus frontalis medius (Fig. 1). Be-
tween this cortical involvement and the lower limit of the tumour, near the head of the caudate nucleus, there was a broadening in all directions, so that 1 cm. beneath the frontal cortex it extended backwards considerably, and nearly reached the motor fibres of the corona radiata (Fig. 1). About midway between the upper

![Diagram made from a tracing of a horizontal section, a considerable distance below that represented in Fig. 1.](image)

The upper border is on the outer surface of the right cerebral hemisphere, while the lower border is on the mesial surface. T. is the tumour, which is bounded by indefinite borders, and contains a few gelatinous masses. C. is the claustrum. I.C. is the internal capsule. C.N. is the caudate nucleus. L.V. is the lateral ventricle, and C.C. is the corpus callosum. S. is the fissure of Sylvius. Both diagrams are looking from below upwards.

and lower limits of the growth the greatest antero-posterior and lateral diameters were found, and measured about 6'3 cm. in a transverse direction by 3'5 cm. in an antero-posterior direction (Fig. 1). On the mesial surface of the gyrus frontalis superior the tumour again appeared superficially, occupying an area of 1 cm. by 1 cm. (Fig. 1). It might be noted that the growth was not discerned on the cortical surface until the brain had been cut into, the pia mater removed, and the tumour traced from the cut surfaces.
The cut surface of the tumour presented several hæmorrhagic areas, and also several small sized areas of gelatinous transformation—the "gallertiger Umwandlung" of Kaufmann. These areas of gelatinous transformation were very firm in consistence after the brain had been hardened. The edges of the tumour shaded off very gradually into the surrounding tissue, suggesting an infiltrating glioma.

The gross appearance of an infiltrating glioma was confirmed when a microscopical examination was made. The microscopic sections showed a richly cellular glioma, with areas of hæmorrhage and areas of degeneration, which stained very poorly. Several giant cells were found. Some of the polymorphous nuclei of these were round and some more oval. They demonstrated well the properties which have given rise to the term gliosarcoma. This term, however, is a misnomer, since a sarcoma arises from the mesoblastic tissue, while a glioma originates from the epiblast. The similarity of these gliomata to the sarcomata consists only in their richly cellular property and their rapid growth.

Some of the points which determined the diagnosis in the case just quoted will now be recapitulated. The headache, optic neuritis, vomiting and dizziness considered together pointed to an organic intracerebral disease. The length of time over which the history extended, and the normal course of the temperature, ruled out any acute condition, such as acute meningitis or cerebral abscess. The holding of the left arm in a flexed position in many of the seizures, the smoothness of the left naso-labial fold, the movement of the uvula to the right on phonation, the protrusion of the tongue to the left, and the diminution of the left abdominal and epigastric reflexes, suggested the motor area of the right cerebral hemisphere as the seat of the lesion. It will be recalled here that Dieulafoy holds that disease of the frontal area alone may account for Jacksonian seizures. The absence of the extensor type of plantar reflex was against the proposition that the motor area could be involved to any considerable extent. The early mental enfeeblement, the age of the patient, and the lack of definite localizing symptoms, pointed to the right frontal lobe as the site chiefly involved. The negative Wassermann reaction would apparently rule out any syphilitic affection, but the marvellous improvement under treatment by potassium iodide and the admission of previous venereal disease caused all in charge of the case to hesitate in diagnosing a non-syphilitic tumour. Indeed, the concensus of opinion was that a right frontal gumma was likely to be the condition present.
A voracious appetite is said to be common in tumours in the neighbourhood of the uncinate gyrus. In this case the voracious appetite was a terminal symptom, and evidently had no localizing value. With the exception of the staggering gait cerebellar symptoms, such as noted by Bruns, Wilson, and others, were absent.

Ferrier, writing in Allbutt’s “System of Medicine” summarizes his article very well in the following paragraphs:

1. Lesions of the frontal lobe may be said to be not infrequently latent.

2. On the other hand, in some cases, especially if the lesion is bilateral, and even in the case of lesions which are not calculated to cause pressure or disturbance of the brain in general, there may be mental symptoms, of which the chief characteristics are failure of memory, hebetude, apathetic indifference, tendency to sleep, vague restlessness, inability to concentrate attention, and silly jocularity.

3. Regional diagnosis of a lesion of a frontal lobe is rendered more probable if, in addition to the psychical symptoms, there occur convulsive or paralytic symptoms, monoplegic or hemiplegic, on the opposite side of the body. These symptoms are indicative of extension of the disease backward into the Rolandic area.

4. The diagnosis of lesions of the frontal lobe may be made still more certain if, in addition to the symptoms enumerated under 2 and 3 above, there are signs of pressure in the anterior fossa, with perhaps unilateral loss of vision, anosmia, or paralysis of one or other of the oculomotor nerves.

5. The diagnosis is confirmed if, in addition to some or a combination of several of the above mentioned symptoms, there is pain on deep pressure on the frontal bone. This pain may be entirely absent if the lesion is subcortical, and is especially to be found in cases of tumours causing tension or irritation of the dura.

Before concluding we desire to express our thanks to Dr H. B. Anderson for his kindness in giving valuable suggestions and allowing us to publish the above notes of the case, which was under his care while in St. Michael’s Hospital. On behalf of Dr. Anderson we also wish to thank Dr. McIlmoyle, who was so keen in his interest and study of the case as to perform an autopsy under most inopportune circumstances.

BIBLIOGRAPHY

Dieulafoy: “Text-book of Medicine.”
Strümpell: “Spezielle Pathologie und Therapie innerer Krankheiten.”
Kaufmann: “Spezielle Pathologische Anatomie.”
Ferrier: Allbutt’s “System of Medicine.”
A BONE STAPLE-PLATE

By J. K. McGregor, M.D.

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The chief difficulty in using the ordinary bone plate in the treatment of fractures by the open method is to keep the fragments in position while the screws are being inserted. This increases the manipulations, lowers the vitality of the parts and renders them more liable to infection.
Some workers have found a bone staple easier to use, but have met with two objections, namely, the spike is too large and tends to split the bone, and too long allowing it to penetrate almost any bone except the femur. For two years a combined staple-plate, as described, has been employed with very satisfactory results, by myself and a few friends.

Figs. A and B show the ordinary plate with spikes in the middle or at the ends. The spikes are half inch in length, round, thin, and very sharp, so that they may be started into the bone with the pressure of the thumb. As soon as the spikes enter the bones any distance the fragments do not move and the reinforcing screws can easily be inserted.

Figs. C and D show how a German silver band may be attached to a plate or staple-plate; this proves very useful in oblique fractures of the long bones. The band is raised at intervals so that it does not completely surround the periosteum.

Cure of lepers. Three inmates of the leper station at Peel Island have been released. These are aboriginal half-castes and a South Sea Islander. The Queensland natives came from York Peninsula and Gayndah district respectively. The Acting Commissioner for Public Health states that the men had been in the institution five or six years, and it was indicated in reports that they had shown lepra bacilli on their admission. During the eighteen months he had visited Peel Island, however, he found that these three men had not shown any signs of the disease. They will be released under surveillance, and must report themselves every three months. Two white men were discharged from the institution under similar conditions about six weeks ago.

—*Australasian Medical Gazette*, October 4th, 1913.
THE CANADIAN MEDICAL

Editorial

AN IMPORTANT EXPERIMENT

These are days of rapid advances in medical education, and it is safe to say that no institution during the past twenty years has had more influence in initiating reforms which are now common features of most curricula than the Johns Hopkins school and hospital. In practically all the more considerable schools at the present day the heads of departments in the preliminary subjects, anatomy, physiology, pathology, etc., give their whole time to teaching and research. But the advisability, or even the feasibility, of making similar arrangements in the clinical branches has not been apparent. It was first suggested by Dr. L. F. Barker more than ten years ago, and when he was recalled from Chicago to Baltimore to fill the very large vacancy left by Dr. Osler, he urged that the professorship of medicine be put on the full-time basis. The proposal gave rise to a warm discussion, but it has been evident for some time that its realization was only a matter of providing the large endowment required.

The necessary funds are now forthcoming, the Genera Education Board having recently appropriated the munificent sum of $1,500,000 to the Johns Hopkins Medical School, "for the purpose of so reorganizing the departments of medicine, surgery and pediatrics that the professors and their staffs in these departments will completely withdraw from paid practice in order to devote their entire time to the care of patients, teaching and research in their respective departments." It is explained that this does not mean that these professors or those of their assistants who are on the full-time basis may not see and treat patients outside the hospital, but
any fees for such services are to go to the fund. Nor does it mean, of course, that all the teachers in these departments will come under this arrangement. The majority of the teaching staffs will still be composed of men engaged in private practice.

So radical are these changes that there cannot fail to be differences of opinion as to how the experiment will turn out. We believe, however, that there is no institution where it could be given a more favourable trial. The present heads of the departments affected are, besides Dr. Barker, Dr. W. S. Halsted, and Dr. John Howland. These men are all in sympathy with the change, but it has not yet been announced whether they will be in a position to continue to occupy their chairs under the new arrangement. The salaries to be paid have not been fixed, but will probably be less than half or one-third of their present incomes. If they feel they cannot retain their professorships, it is hoped that the school may still have the benefit of their services. The scientific spirit for which it has always been famous, makes such a thing possible.

And this calls attention to one manifest disadvantage of the scheme, namely, the difficulty which must be experienced, at any rate now in the transition period, in filling such positions as those proposed with men of established reputation. But even so the gains may well outweigh the loss which this and other disadvantages entail. Both students and hospital patients will benefit in many ways, and by providing the workers with adequate salaries, the facilities for clinical research are increased enormously.

The General Education Board was established in 1902 to distribute the proceeds of a fund—now some fifty millions—placed in its hands by Mr. Rockefeller in aid of higher education. The present gift is by far the largest the board has ever made to one institution. It is very fitting that the fund is to be called the Welch Endowment for Clinical Education and Research in recognition of the great services rendered by Pro-
fessor Welch to medical education in America. The working out of the experiment will be watched with keen interest.

INDIANS AND TUBERCULOSIS

HERE is a wide-spread belief that the semi-civilized American Indian of to-day is a degenerate compared with the "noble savage" who roamed the pages of our juvenile fiction, if not the forests of our country in the days of the pioneers. And it is customary to consider the vices and diseases of the red man to be the result of contact with the whites. We have, it is true, taught him the abuse of fire-water, and deprived him, if deprivation it be, of the discipline of war. Alcohol, like a sinister shadow, has always dogged the march of civilization. Yet, in the light of history who but the cynic or fanatic will maintain that a sober barbarism is preferable to a moderately alcoholic civilization?

The chief enemy of the Indian to-day is tuberculosis, and this, too, has been laid to the charge of the conquering race; for the existence of the disease on this continent in pre-Columbian days has often been doubted. The evidence of the early New England physicians, however, is against this view; and certainly it is difficult to see how one can read far in the Jesuit Relations without becoming convinced that scrofula and phthisis were very prevalent amongst the aborigines in the early seventeenth century, perhaps quite as prevalent as to-day. Moreover, the hygiene—not to mention the morals—of the wigwam, especially in the winter quarters, was certainly not better than that of the modern reserve. Doubtless tuberculosis is the principal factor preventing any great increase in the Indian population, and yet it would seem that the aborigines are probably more numerous now than ever before. Indeed, with a vast country and an abundant food supply, even making generous allowances for the sacrifice of life in continual warfare, it is difficult to account for the astonishing sparseness of the population of the continent.
three hundred years ago without conceding the prevalence and destructiveness of infectious diseases.

These matters are brought to our attention by Dr. D. A. Volume, of Erskine, Alberta, who writes that having recently had the opportunity of examining about three hundred on the reserves between Winnipeg and Port Arthur, he "did not find a single Indian in whom the physical signs of some form of tuberculosis were not present." For this racial susceptibility he offers an explanation. Indians, he says, have a thin skin of peculiarly fine texture, as evidenced by their complexions in youth and the multitude of minute wrinkles which the skin displays in age. Inferentially the mucous membranes are correspondingly thin, the armour as it were is weak, and the lining of the respiratory tract, for instance, allows the germs to gain an easy entrance into the system. Similarly, assuming that the Irish, as a race, are thin-skinned and the Jews thick-skinned, the terms being used in their literal sense, he would account for the susceptibility of the former to tuberculosis and the relative immunity of the latter. The case of the negro is not touched upon. The theory is also held to apply as a rule to individuals, those with delicate skin, thin nails and silky hair being relatively more prone to the disease.

The hypothesis is interesting, and if the premises be sound, the thinness of the skin and mucous membrane might well be an index of susceptibility; but the principles of immunity, the study of which has yielded such a rich harvest to humanity in recent years, are anything but simple, and our limited knowledge of them would certainly lead us to suppose that the causes of racial resistance to an infectious disease lie more than skin-deep.

THE AMERICAN COLLEGE OF SURGEONS

The first formal convocation of the American College of Surgeons was held on the thirteenth of last month, and the time seems opportune for some comment on the aims of
the institution. The advances in surgery during the past few years have come with such rapidity that a good deal of readjustment is necessary. We have on the one hand brilliant achievement: on the other mediocre work far below a reasonable average. Some standardization of surgery is needed and in this need the American College of Surgeons has found its particular task—to promote "some understanding of the responsibilities of surgical work, some recognition of the differences between surgical work and medical practice, some definition of the special training and experience that a doctor should have before he undertakes the responsibilities of the graver operations of modern surgery." In order to establish a standard, the intention is "to recognize those men now in practice whose training, experience, and character entitle them to be considered specialists in surgery or in the strictly surgical specialities, . . . the choice to be based on individual fitness alone." It is proposed, when the College has been in existence for one year, to admit to membership by examination only.

Some criticism has been made, first, because the college is a "guild," and secondly, because men who are not specialists, but who are doing good work in surgery, are excluded. In a sense, the first objection is true, but the "guild" is open to all who show fitness; as regards the second cause for criticism, this is an age of specialization, and the men who are best fitted to assist the college in its chosen work are those whose whole effort is directed towards the elevation of the standard of surgery.

The college has taken up the evil known as "fee-splitting," to which reference has already been made in this Journal, and thus expresses itself: "The college will not knowingly select for, or retain within, its ranks any one who practises fee-splitting, directly or by subterfuge."
THE ST. JOHN MEETING

As has been previously announced, the date of the next annual meeting of the Association which is to take place in St. John, N.B., has been fixed for the four days, July 7th to 10th, inclusive. The necessary preparations for ensuring the success of a large medical meeting make heavy demands on the time and energy of the local physicians. But the profession in St. John has been well organized for the purpose under the able leadership of the president-elect, Dr. Murray Maclaren, and the local secretary, Dr. J. S. Bentley, and the various committees have taken up their tasks with enthusiasm. Work has begun on the arranging of the programme, and it is requested that those members who may desire to contribute papers communicate as soon as possible either with Dr. Bentley, or with the general secretary.

_Probably no medical man in the country has been more faithful than Sir James Grant in attending meetings, a good habit which with advancing years he shows no sign of relaxing. Indeed he seems to wear his years lightly. Like the optimism of ben Ezra, the utterances of a vigorous and enthusiastic old man are always inspiring. In an address which Sir James gave as president of the Canadian section of the recent International Congress on School Hygiene at Buffalo, he took as his subject School Hygiene and Child-life. In it the octogenarian shows keen appreciation of the needs of the child and its education. He pleaded amongst other things for the country life and the improvement of country schools, and for instruction to mothers on diet, not only for babies, but for older children, statistics gathered in the great American cities having shown a sadly large proportion of the school children to be chronically underfed. He showed that the educational system of the present day was becoming more cumbersome and complicated, and a serious test of strength_
to young brains. The mental and physical wellbeing should advance equally. Each brain, like each blade of grass, was single in character and power, and its merits were to be studied. Difficult as this might be, the outcome would subserve the best interests of a progressive age. There was need of teachers or inspectors trained in psychology to detect the mentally deficient. For stimulating the faculty of observation, a little practical encouragement to collect such things as specimens of the common insects should be begun early. Finally let the children's feet be guided, and thereby ultimately the arms of the nations, into the way of peace.

At a recent meeting of the Medical Council and the University of Alberta, an agreement was reached whereby the Medical Act was amended so as to give the University of Alberta the power to specify the subjects for examination as well as the right to conduct the examinations. It was agreed also that any person in possession of a diploma from an approved medical college and therefore entitled to write an examination, should be given an interim license to practise anywhere in the province at a distance of not less than twenty miles from the office of a licensed physician; in case of failure, the applicant to be afforded another opportunity to pass the examination and the interim license to be renewed. The purpose of the amendment is to remove the barriers existing in the way of physicians going to Alberta from other provinces and at the same time to safeguard the public interest. The University is offering this session the first year of a course in medicine. It is the intention, ultimately, to give a five year course of study, based on the findings of the committee of "the Hundred Leading Educators of the United States and Canada," but for the present the first three years' work only will be given. A committee, consisting of the president, the scientific members of the teaching staff, and the university examining board, has been organized for the purpose of mak-
ing the necessary arrangements. This year the work will be confined to the pure sciences, chemistry, biology, physics, with one modern language, and with the addition of bacteriology the work of this latter department being in charge of Dr. Revell. During the winter two professors in medicine will be appointed, one to the chair of anatomy, the other to that of physiology. Additional appointments will be made to meet the requirements of the second year from among the local medical men; and the following year two other full-time appointments will be made. The laboratories for the second year work will be set up and equipped during the year. The legislature, at its recent session, passed an act giving the university the right to call upon all public institutions for anatomical material, so that abundance of material from the point of view of anatomy will be available. A building will be erected next summer to serve as a temporary accommodation for this department.

In entering upon the department of medical instruction, the University of Alberta to a large extent has been actuated by a desire to improve conditions now existent in the rural districts of the province. At present there are wide tracts, sparsely populated, where it is extremely difficult to obtain medical assistance. It is hoped that the great need for practitioners in these districts will be met when men, familiar with the need, are trained in the profession of medicine under their own conditions. The university is to be congratulated upon its entrance into a new field of activity, and we wish it every success in the accomplishment of its purpose.

In a recent editorial we advocated short periods of residence in a sanatorium as the ideal method of giving students a much needed practical knowledge of early tuberculosis. Consequently we are gratified to learn that the scheme is to be put in operation at Ninette, for the benefit of the students of the Manitoba Medical College—and of the sanatorium, which with a recent addition, the gift of the Daughters of the
Empire as a memorial to King Edward, has accommodation for one hundred and fifteen patients. The plan was suggested by Dr. Bell of the Provincial Board of Health, and has received the hearty support of the superintendent, Dr. A. Stewart, and an enlightened board of trustees.

Dr. Thornton, vice-president of the Dominion Medical Council, writes that "the Manitoba Medical Council at its regular meeting at Winnipeg on October 8th, dealt with Dominion Registration. It was unanimously agreed to accept for registration in the province all applicants who presented a certificate of registration on the Dominion Medical Register, whether the same had been obtained by examination or by virtue of ten years' previous provincial registration, subject only to proof of identity and payment of the provincial registration fee of one hundred dollars. The Registrar was also authorized to issue to applicants the certificates necessary to enable them to register on the Dominion Register. The fee for a certificate of ten years' provincial standing was placed at five dollars. The fee for a certificate of holding a medical degree accepted by this council to enable the applicant to take the Dominion examinations was placed at twenty-five dollars, but in the event of such applicant being registered in the province, twenty dollars of this would be credited on the registration fee." In addition to that of Manitoba, the councils of Ontario, New Brunswick and Nova Scotia have accepted Dominion Registration in its entirety.

Dr. Ernest Glynn, of the University of Liverpool, in an inaugural lecture on the study of disease in domesticated animals, recently made an earnest plea for the establishment of a hospital for animals in connexion with the veterinary school at Liverpool. Enumerating the diseases which are common to man and to the domestic animals, he shewed how frequently the one is the outcome of the other, and how researches in animal diseases might lead to knowledge of human ailments.
In connexion with International Labour Treaties, an official conference of government representatives was held at Berne during the last week of September. Resolutions were adopted on this occasion to prohibit the night work of boys under sixteen years of age and to determine the maximum duration of a working day for women and young persons under sixteen. The night work of women and the use of white phosphorus in match manufacture have been prohibited already in many of the large industrial centres of the world.

In reference to the epidemic of smallpox in Sydney, New South Wales, the Australasian Medical Gazette contains an editorial which deals with the attitude of the government towards vaccination. When the epidemic broke out—and since then over seven hundred cases of the disease have been reported—a deputation “representative of the profession and the commercial interests of the city, waited upon the Premier to point out that the experience of all countries has been to show that vaccination, and vaccination alone, was effective as a preventive of smallpox.” Against a compulsory vaccination bill was heard the cry of the anti-vaccinationist, aided by the labour supporters of the government, and the result has been the introduction of a bill which provides for infantile vaccination, revaccination at the age of ten and again at the age of twenty-one years, but with a “conscientious objection” clause which completely nullifies the measure, for any one who so desires can thus avoid vaccination. In view of the facts, resolutions were passed at the annual meeting of the New South Wales Branch of the British Medical Association and at a meeting of the Federal Committee in Sydney last July, to the effect that in the opinion of those bodies, the medical profession should be consulted by the government before legislation was introduced which required the coöpera-
tion of the medical profession to make it effective.
Book Reviews


The frequency with which new editions of this manual are called for indicates a widespread popularity among practitioners and specialists, and shows that it fills admirably the important function of a students' text-book. An examination of this new edition shows that it reflects the subject in its latest aspect. Many sections have been wholly rewritten and enlarged. Emphasis has been laid on the most modern methods of diagnosis and treatment. The excellent series of illustrations has been increased by many new ones, which have been inserted wherever they could be of value in helping to an understanding of the problems under discussion.


This book is an expression of the practice which prevails at the Marine Biological Laboratory at Nood's Hole, and is issued with the aid of the former and present members of the staff of that important station. It has arisen out of the laboratory directions for students, and the matter is arranged in natural sequence. The note of the book is a continual reference to the forms of adaptation which fit the different animals for their particular lines. The book will have a wide interest even outside of the laboratory. Much of it may be read, and understood, by any intelligent person who has chance access to material along the sea-shore. As a companion on a summer holiday it would be admirable.
Books Received

The following books have been received and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.


The annual meeting of the Ottawa Anti-tuberculosis Association was held on Tuesday, October 21st. Dr. J. A. Machado, who was re-elected president of the association, stated that during the year there had been one hundred and twenty-three new cases of tuberculosis, bringing the total number up to three hundred and forty-four. Fifty-seven of these had died. The May Court Dispensary staff had examined during the year one hundred and thirty-seven patients, forty-five of whom were non-tubercular. The Perley Memorial Hospital for incipient cases, with its forty beds, had proved of great assistance. The association now feels great need of an administration building. The officers elected for 1913-1914 are: honorary president, Mr. J. Manuel; vice-presidents, Archbishop Hamilton, Dr. G. S. MacCarthry, Sir L. H. Davies, Hon. E. H. Bronson, the Mayor of Ottawa; recording secretary, Mr. W. Tucker; corresponding secretary, Rev. Dr. Moore; treasurer, Mr. G. B. Irvine; and solicitor, Mr. J. E. Orde, K.C.
THE PRESENT STATUS OF SURGERY IN PULMONARY TUBERCULOSIS

There have appeared within the last three or four years several articles from the pen of surgeons dealing with the technique and the results of operations designed to benefit certain cases of pulmonary tuberculosis; and the whole subject of surgical relief in this disease has taken on a new phase. While the tendency in the earlier attempts of surgery was to attack the lung substance itself, chiefly in the way of draining cavities or resecting portions of tuberculous lung, the newer work, based largely upon the results of artificial pneumothorax and calculated to imitate the effects of pneumothorax, has concerned itself chiefly with the attempt to produce lung collapse by the resection of ribs. The lung itself is not to be touched; all work must be extra-pulmonary. While Quincke, and Spengler, and Turban, twenty years ago and more, carried out the resection of ribs over tuberculous cavities in the idea of producing a local collapse of the lung, it remained for Brauer to lay down the principle that any limited resection of a few of the ribs was quite insufficient, and that in order to obtain results it was necessary to resect a large number of ribs and a considerable portion of each one of them. Only thus could one get the effect of atmospheric pressure with that proper collapse of the lung which the results of artificial pneumothorax had shown to be necessary. Friedrich elaborated and systematized the operation proposed by Brauer, and established the principle that the greater the removal of ribs the greater, other things being equal, was the benefit derived from the operation. He published last year the results of twenty-eight cases operated on by his method. Although eight of his patients died from the operation, a large proportion of the remainder were greatly benefited by it, and he points out that all his patients were in a more or less hopeless condition before operation. Friedrich's operation consisted in an almost entire removal of the ribs of the affected side from the tenth up to the second and sometimes even including the first. The objection was immediately raised, with justice, that his operative mortality was prohibitive. As a matter of
fact, even when the operation was done in two stages, as Sauerbruch later recommended, its immediate danger was very considerable. We shall refer later to the nature of this danger. During the last two years, however, there have been published by Wilms and by Sauerbruch methods of operation which in their hands have given a very low operative mortality. Sauerbruch in particular has published a long general review of the question, and gives in detail the history of forty three cases of his own. The writer had occasion during the last summer to talk the subject over with him. The number of his cases meanwhile had risen to somewhat over eighty. It is the chief purpose of this review to give a résumé of this work of Sauerbruch's.

One may begin with the proposition that the climatological and dietetic treatment of pulmonary tuberculosis has but slight beneficial influence upon the more advanced cases, particularly those with ulcerative processes, and with cavities. In this fact, which is generally admitted to be true, lies the justification, at least to a certain extent, for operative interference, if it can be demonstrated that operation can improve the patient. The bulk of the work hitherto done is of German origin, and, as one would expect, the scientific basis of the operations proposed has been properly worked out. It is worth while reviewing briefly this aspect of the subject.

The work upon artificial pneumothorax in the treatment of lung tuberculosis, that is upon its effects in the healing of diseased lungs, may be taken as of equal value in explaining the curative effect of extensive rib resection. In both cases the object to be attained is collapse of the affected lung; in the one case by the injection of nitrogen gas, in the other, by allowing the atmospheric pressure to compress the lung through the soft parts of the chest wall after the bony thorax has been removed. In Brauer's view artificial pneumothorax and chest wall resection are merely two different ways to the same goal. Artificial pneumothorax is the operation of choice. But where it is impossible to carry this out on account of adhesions, the removal of the ribs comes to be considered. For the sake of brevity this removal of ribs may be referred to in what follows as thoracoplastic, the name which by common consent is now given to the operation in Germany.

What is the effect upon the lung which has been collapsed by either of these methods? First of all the lung is of course greatly reduced in volume; this is the purely mechanical effect of compression, and the practical result is that cavities are made smaller, or
are obliterated. Secondly, the lung is put at rest, it is excluded from its proper function; as a result the blood circulation suffers; aeration is imperfect; the blood remains venous; and the end result, as has been shown by much experimental work, is the development of fibrosis. The lymph circulation likewise suffers stagnation inasmuch as the respiratory movement represents the chief factor in promoting the lymph flow, as was shown by Tendeloo: the practical result of this is a lessened absorption of toxins. Experimental work has also shown that to deprive the lung of its function, to make it air-empty, as for instance by ligating the main bronchus, results in fibrosis. The ligation of the pulmonary artery or veins, the cutting of the phrenic nerve with its consequent paralysis of the diaphragm, the ligating of the main bronchus, all these with their common factor of excluding the lung from its specific work, and the alteration in its circulation, result in the development of fibrosis. Now fibrosis is the prime factor in the cure of tuberculosis. Thus the collapse of the lung artificially produced, may be expected to tend towards the cure of tuberculosis both by inducing fibrosis and by the purely mechanical effect of compression of cavities.

Of course it is clear that to obtain a complete collapse of the lung by means of resection of ribs, pretty well all of the ribs on one side must be removed. If the operation in this respect is partial, the beneficial effects are apt to be partial. But it soon became evident through Friedrich's work that a complete thoracoplastic was a dangerous operation. We know from the pathology of open pneumothorax that the mediastinum by reason of the lack of the cohesion force which normally exists between the lung surface and the chest wall, together with the effects of atmospheric pressure, is shoved to the opposite side during inspiration, and hinders the sound lung in its inspiratory unfolding; during expiration on the other hand, it yields to the one-sided pressure of the expiratory forces and returns towards its own side; the result is that there develops what the Germans call "mediastinal fluttering." This paradoxical to and fro movement of the mediastinum leads to considerable diminution of the work of the other lung, the result of which is dyspnœa, which may become quite serious; indeed, through its secondary effect on a weak heart, combined with its direct effect upon the respiratory exchange, it may cause death within a short time. Clinically in such cases there arises after operation a characteristic picture. On the operated side one sees the chest wall drawn in strongly during inspiration, and pushed out during expiration. This so-called "paradox" is the result of the "mediastinal flutter-
ing," and the effect upon the respiratory function, and upon the heart, is the same as with an open pneumothorax. After the patient has got over the shock of the extensive operation, there appears a modified cyanosis which gradually increases; breathing becomes superficial and very rapid, and the reversed respiratory movements of the operated side can be seen even through the bandages; expectoration is very difficult; the pulse is small and frequently running. In unfavorable cases the dyspnoea increases to such an extent that respiration becomes panting; ultimately after great distress the patient dies from the interference with respiration, with in many cases, a simultaneous heart failure. On the other hand, when the patient overcomes this serious condition, the ultimate clinical results resemble in their good effects the best results of artificial pneumothorax. One sees the same diminution or disappearance of sputum, the same fall of temperature, the same improvement of the general condition.

It became clear that the total removal of ribs on one side, that is the complete thoracoplastic, was too dangerous an operation, (and even Friedrich, its protagonist, is beginning to give it up), so that various modifications safer for the patient have been advised. Wilms two years ago proposed what now goes under the name of "columnar resection." The operation, briefly, consists in the removal of three or four centimetres of each rib from the second or third to the eighth or ninth, in the paravertebral line, and, if necessary, of a second removal some time later, of one or two centimetres of the ribs in front besides the sternum from the second to the fifth or sixth. Sauerbruch in the majority of his cases now does a somewhat more extensive operation than this of Wilms', but much less extensive than the old complete thoracoplastic. In one, or in sometimes two settings, he resects from the first or second to the tenth ribs posteriorly taking away about ten centimetres from the lower ribs, and four or five centimetres from the upper ones, the resected piece gradually becoming shorter as one goes up. In very bad cases where he desires complete retraction and complete functional rest of the lung, he still carries out the complete thoracoplastic, but does it only in three or four settings. In this way he claims that the mortality is reduced to some five or six per cent. The general principle underlying the various modifications in extent of rib resection is that the less rib one takes away, the less perfect is the retraction of the lung and its functional rest; therefore, in extensive disease of the lung, Wilms' operation is apt to be of slight value. He draws particular attention to the danger
of doing a partial rib resection over cavities in the upper lobe on account of the danger from the interference with expectoration which may allow an aspiration of the secretion of the cavity into the lower lobe; in such cases he says one should always begin with rib resection over the lower lobe, even if the latter is comparatively healthy. The technique of Sauerbruch's operation is thus described. The skin incision runs from the level of the second rib vertically downwards, in the paravertebral line, and bends forward along the tenth rib. The muscles are cut through in the direction of the incision so that the scapula at its posterior border is freed, and can be bent forward upon its anterior edge. It is astonishing how far the scapula can be lifted up and pulled forwards. The ribs are now resected from below upwards, beginning with the tenth or eleventh, to the extent of ten centimeters below, and four or five centimeters above. The decision as to how many ribs are to be removed in the first sitting depends upon the condition of the patient during operation. In the majority of cases one can confidently remove from the tenth to the second or first in one sitting without asking too much of the patient. In other cases when the condition is not good, one should confine one's self to the removal of four or five ribs. The removal of the first rib, in Sauerbruch's opinion, depends upon the palpation of the apex during operation. If after the resection of the second rib he is able to press the apex downwards with ease, it is not necessary to remove the first; if he finds the apex resistant, it is better to resect the first.

The question of the indications for operation is perhaps the most important, and as yet perhaps the least certain part of the whole question. The extra work put upon the sound lung is apt to lead to a certain degree of emphysema. But apart from that there is the danger of lighting up an already active or even quiescent focus of disease in the other lung. This has been observed a number of times after operation as after artificial pneumothorax. Still, a certain amount of disease, if quiet and of old date, does not contra-indicate the operation. In the diseased lung the conditions demanding operation are the same as those which make artificial pneumothorax justifiable. In general it may be said that the greater the tendency to ulceration and to cavity formation, the clearer is the indication for operation. Patients with long-standing disease which is progressive, which has been uninfluenced by climatic treatment, which has led to cavities, which is accompanied by fever and considerable expectoration, and in whom the other side is comparatively healthy, have been found to be the best subjects for the operation.
With regard to the clinical results, as has already been said, the most marked concern the diminution of sputum, fall of fever, and the improvement in the general condition. The lessening of sputum is so marked and constant a symptom that important conclusions may be drawn from it as to the later course of the disease; particularly when the amount of expectoration has been large, its diminution is sometimes astonishing, and it is actually a criterion of the steady improvement. On the other hand, if after early reduction of the sputum, the amount increases again, one may conclude either for an aggravation of the process, or for insufficient effect of the operation. Amounts of two hundred, even of four hundred centimeters have been observed in numbers of cases to disappear entirely, although gradually. The character of the sputum also changes, usually from the lumpy purulent type to a mucous and foamy appearance. The number of the bacilli is reduced; quite often they disappear entirely. The fever also gradually falls in the favorable cases after a preliminary rise, and parallel with this goes an improvement in appetite, in the subjective sensation of well-being, and in sleep; weight frequently increases.

As to the results, Sauerbruch reports upon forty-three cases of which eight were completely cured. Naturally the definition of cure is only a clinical one, but he understands by the word “cure” a condition in which the patients are completely free of fever, have no sputum, and above all no tubercle bacilli, and have become able to work; more than this, at least one year must have passed after the operation. Eight of his patients fulfilled these conditions. In seven others he noted a very good result in the sense of marked improvement: in four of these indeed, he felt that he could expect a cure later. Thirteen patients were definitely improved by the operation, although not so markedly improved as those just mentioned; some of these had been operated on only shortly before his report, whilst in others a second operation was necessary; still in seven of these thirteen he felt, from the course of the disease after operation, that further improvement or even cure was to be expected. Three patients were uninfluenced by the operation. On the other hand, four patients were definitely made worse by increase of the tuberculous process on the other side. Three patients died as the result of the operation, of these, however, two were exceptionally serious, in that they were completed by pyopneumothorax. If these two exceptions (desperate cases) had been excluded from the operation, his mortality rate would have been only one in forty-three, which equals 2.14 per cent. As to the late mortality, there
died at various periods after the operation, six patients, either of tuberculosis or of secondary tuberculous pneumonia. The total mortality including these late cases would amount to 17.3 per cent. These results compare very favourably with those observed after artificial pneumothorax. Sauerbruch counts that already twenty per cent. of his patients are cured, and that a still larger number with the lapse of time will be cured; their present course justifies this expectation. Such results, considering the serious nature of the disease, and the failure of climatic treatment, he feels afford complete justification for the operation. He recognises that surgical treatment of lung tuberculosis is still in its beginnings. It is clear that with a disease such as pulmonary tuberculosis, with the variety of its clinical and pathological pictures, and its well-known difficulties in matters of diagnostic and prognostic, there is still much to be done in the way chiefly of establishing the proper indications for operation, and also in the way of working out the technical details. It has to be confessed in the light of experience that mistakes were made, particularly at the beginning of the operative treatment of the disease. In a certain number of cases Sauerbruch says he refuses operation where formerly he would have considered it justifiable.

Sauerbruch's article closes with the detailed report of the forty-three cases mentioned, together with a number of x-ray pictures. It represents up to date the most complete account of this new branch of surgery, and one can see that in the matters of careful preparation, honesty of relation, and superior knowledge, it represents a model of the surgical monograph.

E. A.


It is hoped that the wing which is being added to St. Luke's Hospital at Ottawa will be completed about the end of December. It is the gift of Mr. J. R. Booth and contains two large operating rooms, nineteen private and two public wards.
Harmful Action of Urotropine. Muenchener Medizinische Wochenschrift.

"In hexamethylentetramin (urotropine)," writes Dr. Wilhelm Cuntz of the Heidelberg Skin Clinic, "we have one of the best drugs for the treatment of bacterial inflammation and catarrh of the urinary passages. Naturally one meets with countless failures in the use of this drug, but one does not, as a rule, anticipate any unfavourable influence upon the local process. Nevertheless there are cases in which urotropine actually increases the existing symptoms. The unfavourable action can show itself when the remedy is prescribed in the usual manner, dissolved in water and taken after meals, with no overdosage, by irritation of the urinary tract, haematuria and albuminuria. This fact has not been altogether overlooked by those who have made a study of the literature of urotropine, but it has not been sufficiently commented upon. In certain cases the harmful action is difficult to recognize if there is already a morbid process at work, which in itself is prone to complications, and so it happens that the drug is given in even larger doses, to the patient's harm."

The author then quotes case reports of various patients whose symptoms had become very marked under urotropine, many cases showing quite severe haematuria and albuminuria, and who had improved at once on withdrawal of the drug. The usual dose was two tablets of half a gram each dissolved in water three times a day after meals.

Finger Joint Replaced by one of the Toe Joints. By Dr. Goebell, of Kiel. Muenchener Medizinische Wochenschrift.

A man thirty-seven years of age, a violin player, consulted the author about his left little finger, saying that he had suffered much pain in the second interphalangeal joint for about a year. The pain first came on after he had executed a very difficult violin ex-
ercise and for four months he had been unable to use the finger for playing, and feared he must give up his musical vocation. Apart from a mild, fleeting gonorrhea at fourteen years of age he had always been healthy. The left little finger, in the region of the second interphalangeal joint showed a distinct spindle-shaped swelling. The articular ends of the phalanges were much thickened. Active and passive movement were painful and restricted, and crepitus easily elicited. The x-ray showed the thickened ends of the phalanges. It was, in fact, a severe crippling inflammation of the joint, leading to destruction. The early attack of gonorrhea had nothing to do with the condition. After various forms of treatment had failed, the following operation was performed on June 6th, 1912: an incision was made over the extensor aspect of the affected joint reaching to the root of the nail. The extensor tendon was exposed and its attachment to the terminal phalanx divided; the joint was then exposed. The ends of the bones were found to be much thickened. They were sawed through in such a manner as to leave a concave surface at the ends of the remaining bones, and the joint was removed. The first interphalangeal joint of the second toe, left foot, was then exposed through two lateral incisions and the joint removed by sawing through the bones so as to leave a convex surface at the ends of the removed bones. A Gigli saw was used for this work. The excised joint with its capsule was then placed in the space prepared for it in the little finger, and, after the extensor tendon had been sutured into place, it fitted and kept its position so well that it was not found necessary to wire the bones. The incisions in toe and finger were then closed. The after treatment consisted in the application of iodine, local hot-air baths, and passive motion.

Result: On March 17th, 1913, active and passive movement were almost normal in extent, and accompanied by a slight rubbing sound, but with no pain. Patient could play the violin almost as well as before the joint was affected. He still continues the local hot-air applications at intervals.

Dr. Max Krabbel, of the Bonn Clinic, has published a work on the filling of bone cavities with free-transplanted fat. The method has been used successfully in cases of osteosarcoma, simple chronic and tuberculous osteomyelitis. The presence of fistulae is a contraindication to the procedure. In cases of widespread necrosis of bone and involvement of the surrounding soft parts the plug of fat may only be inserted after careful removal of all diseased tissue.
If primary union is not effected, or should a fistula occur, the plug is to be removed at once.

Fuchs, of Breslau, claims good results from the use of pituglandol. He has used it, among other cases, once in a case of twin pregnancy with hydramnios and weak pains; once in a breach presentation with premature rupture of the membranes; once in a primipara with a brow presentation; in an artificially induced labour in conjunction with a bougie introduced into the uterus; in a case of placenta praevia lateralis; and in an unsuccessful attempt to cause an abortion at the tenth week.

From Buda Pesth comes the observation that many of the so-called vagotony cases show contraction of the pupil during inspiration, and dilatation during expiration. It is also noticed that those showing this pupillary phenomenon also exhibit a respiratory cardiac arrhythmia, but the converse does not hold true. The phenomenon is more usual in youth and especially in cases showing a pathological pulmonary condition.

The Pharmacological Institute of Vienna publishes the following statement regarding salvarsan:

The "acute" action of salvarsan is not caused by the arsenic ions, but by the whole compound. This is a totally different action to that of arsenic itself, and in many respects the direct opposite. The "chronic" action, on the other hand, is caused by the destruction of the compound and the deposition in the tissues of the actual arsenic ions. Salvarsan, in proper doses and given with faultless technique, is a relatively harmless remedy. At any rate it shows very little toxicity considering its arsenic content. The acute fatal poisoning of a healthy organism by large doses of salvarsan is caused by its action on the heart. In the case of a diseased organism, especially when the arteries are affected, there can occur shortly after the injection very alarming symptoms, and even death, as the result of the action on the diseased arteries. Or again it may be the kidneys that are at fault. If the general condition of the patient is carefully studied one should succeed in avoiding the evil effects of salvarsan, and obtain good results from its employment.

G. C. Hale.

London, Ontario.
Obituary

REGINALD HEBER FITZ

Although it is eminently human, it is not a little saddening that a prophet is apt to be without honour in his own country. The first great explorer of new territory in medicine of the North American continent since Ephraim McDowell, has died, and the leading medical journal of his home city does not even give his obituary or biography: it merely contents itself with a meagre article of little over a page. Rightly the whole of the number following his death should have been devoted to his memory. The foremost medical journal of the United States, the journal of the American Medical Association, of which association he was perhaps the most distinguished member, has followed this lead, merely noting his death by five lines or so of small print huddled together with notes concerning a score or so of other members of our profession in its obituary column. And yet the recognition of appendicitis as a special entity is due to Dr. Fitz; to him is due the fact that America led for long years—and still leads—in the recognition and operative treatment of this disease. There is no other common morbid state the recognition and treatment of which is so essentially due to American initiative. Fitz it was whose paper at the first meeting of the Association of American Physicians in 1886 opened up the whole of this territory. He may truly be claimed as the first and the greatest of a great band of men who have in our generation brought renown to the United States by their devotion to medical research, and by their brilliant achievements. Nor is this his sole claim to medical immortality! To his labours as a pathological anatomist, and at the same time as a clinician, to his acute powers of observation and enquiry, we owe the clinical and pathological recognition of another morbid state, one it is true, not so common, but which, nevertheless, thanks to his labours, is to-day being increasingly recognized as a cause of grave abdominal distress, the condition, namely, of hemorrhagic pancreatitis, with its accompanying fat necrosis. This is "Fitz's disease" every whit as much as Addison's disease is Addison's. As is rightly stated by the Boston Medical and Surgical Journal, it
is not given to many medical pioneers to have more than one great
discovery to their credit.

To us it has always been a matter of wonder that Dr. Fitz
received so little recognition from his fellow countrymen. There
was never any unseemly squabble as to priority; his position as a
pioneer has been freely admitted on every hand, and yet little
honour has been done him. Possibly there is something in the fact
that, physician as he was, his observations were of prime value to
the surgeon: that our surgeons have overlooked his claims because
he was not of their order and that his fellow physicians have been
Gallios. It may be urged that the man himself was responsible.
Genial and kindly, he was at the same time eminently modest
and devoid of any particle of self-seeking. Highly regarded, nay
beloved, by those who had the privilege of his near acquaintance,
had neither the presence nor the voice that stamped him as a
leader among men. For long years a member of the Harvard
Medical Faculty, first as professor of pathological anatomy, and
later of the theory and practice of medicine, he did not stand out
as a notable teacher. He did not dominate. This surely is all
the greater reason why in these days we should do him honour.
We are glad to note that his old university has held a memorial
meeting, and that on the evening of November 17th, addresses
were delivered by Dr. Keen, of Philadelphia, Emeritus President,
Charles W. Eliot, and H. P. Walcott, Chairman of the Board
of Trustees of the Massachusetts General Hospital, Prof. Thayer,
of Baltimore, and Professor Councilman, of Harvard. This is
as it should be. But if at the time of his death his services were so
little recognized by the profession at large, in the years to come his
fame must grow and steadily increase, so that the United States
in the future will surely regard him as among the very foremost
of its great men.

Dr. James Baugh, of Hamilton, Ont., died suddenly from
heart failure, October 16th. Dr. Baugh, who was in his sixty-fifth
year, was born in Shropshire, England. He was a graduate of Tri-
nity Medical College, Toronto, and had followed the profession of
medicine for about thirty years. He commenced his professional
work in London, Ont., going thence to Waterdown, Galt, and finally
to Hamilton, where he spent the past twenty-five years. He was
a Mason and an honorary member of St. George's Society. He
leaves a widow, one son and one daughter.
Dr. J. M. Cameron died at Yakima, Washington. Dr. Cameron was born in Nova Scotia and was educated at Arthur and later at Toronto. He practised for over twenty years at Galt, Ontario, and in 1906 went to join his brother at Yakina, where he continued his professional work. The cause of death is reported to have been mastoid abscess.

Dr. Odell Robertson, of St. Jacobs, Ontario, died November 1st, in the eighty-seventh year of his age. Dr. Robertson was a familiar figure in Waterloo County and had practised in the village of St. Jacobs for forty-five years.

Dr. Charles Stuart Murray, of Toronto, died of pneumonia November 6th. Dr. Murray was born in Limerick, Ireland. He graduated from Toronto University and also did some post-graduate work at Edinburgh. He was surgeon on the steamer Adriatic for seven years, practising afterwards for a short time in Newark, N.J. He then retired from professional life and went to reside in Toronto.

In the obituary notice of Dr. George Allan Kennedy in the November number, it was stated that death was due to cancer of the tongue. From more exact information it appears that this was not the cause of death.

News

Maritime Provinces

The Charlottetown Guardian draws attention to the fact that pork intended for export must be inspected for possible traces of tuberculosis or other infection, while that intended for home consumption is subject to no inspection. The necessity for inspection is evident, for about ten per cent. of the pork inspected is found to be tuberculous.

Dr. J. J. MacPhee, of New York, has been elected a Fellow of the Royal Medical Society of Great Britain. Dr. MacPhee was born in Prince Edward Island.
Several cases of typhoid fever have occurred at Trenton, N.S.

Reports come from Halifax of an epidemic of typhoid fever. The disease appeared about the beginning of October and the number of cases has increased rapidly. An emergency hospital has been opened with accommodation for fifty beds. A careful investigation into the possible causes of the outbreak is being conducted and every precaution taken to prevent the further spread of the disease.

As a precaution against a possible outbreak of smallpox, all the school children in Glace Bay have been vaccinated. The contagious diseases reported during the month of September were four cases of scarlet fever and one of infantile paralysis.

Eighteen cases of typhoid fever have been reported recently in Trenton, N.S.

Forty-seven patients were treated in the Victoria Hospital at Fredericton during the month of October. One death occurred.

ONTARIO

The Royal Victoria Hospital at Barrie, on September 30th last, completed its sixteenth year of activity. During the past twelve months, 418 patients received treatment in the hospital, and 960 days of treatment were given. Thirty-nine births and twenty-six deaths occurred.

At the annual meeting of the Fort William Royal Marine and General Hospital Board, the difficulty of collecting fees from patients was discussed, and it was decided that in future payments would be required to be made weekly. The president reported that six hundred and fifty-nine patients were admitted to the hospital during the year, and there were fifteen births and twenty-eight deaths. The cost of administration during the year was $16,095.52.

The annual meeting of the Welland Hospital took place October 28th. During the year ending September 30th, four hundred and thirty-seven patients were admitted to hospital; twenty-five deaths and seventeen births occurred. The number of days of
treatment was six thousand one hundred and seventy-five. The hospital is overcrowded and the question of providing more room came up at the meeting. It was suggested that a nurses' home should be built but no definite decision was made.

The biennial meeting of the Interurban Medical and Clinical Association was held November 3rd at the Toronto General Hospital.

A reception was given on November 4th at the Toronto Academy of Medicine in honour of Sir Rickman John Godlee, president of the Royal College of Surgeons. In the evening, Sir Rickman lectured before the Academy on the removal of foreign bodies from the lungs.

During the month of October, the cases of infectious and contagious diseases reported to the Ontario Board of Health numbered 706, with 143 deaths; this is less than during the same month last year, when 898 cases were reported and 134 deaths occurred. The cases this year included typhoid fever, 294 cases, 33 deaths; diphtheria, 255 cases, 30 deaths; smallpox, 27 cases; scarlet fever, 189 cases, 6 deaths; tuberculosis, 106 cases, 62 deaths; measles, 83 cases, 2 deaths; infantile paralysis, 5 cases; cerebrospinal meningitis, 6 cases, 4 deaths.

The nurses' home of the old General Hospital at Toronto has been converted into a measles hospital containing thirty cots.

The following contagious diseases were reported in Ottawa between October 6th and 28th: diphtheria, 30 cases; scarlet fever, 19 cases; typhoid fever, 7 cases; tuberculosis, 2 cases; smallpox, 2 cases; measles, 6 cases, and chicken-pox, 5 cases.

A conference of provincial representatives was held at Ottawa October 30th. The conference was called to discuss the evidence obtained by the special committee appointed last year to investigate the pollution of streams and navigable waters. Hon. J. D. Hazen was elected chairman. A resolution was unanimously passed advocating a Federal department of health.

At a meeting of the management committee of the Toronto Board of Education, held October 30th, it was decided that one of
the physicians attached to the public school medical staff devote himself to the examination of the heart and lungs. This was done on the recommendation of Dr. Struthers, who considered that it would be of great assistance in the early diagnosis of phthisis.

The annual dinner of the Oxford County Medical Association was held at Woodstock October 29th. Dr. S. McLay presided. The guest of the evening was Dr. Fotheringham, professor of medicine in the University of Toronto, who gave an interesting address.

An epidemic of smallpox is reported from St. Onge, near Ottawa. In some instances all the inmates of a house were found to be suffering from the disease, which is of a very mild character.

During the year ending September 30th, 1913, four hundred and sixty-seven patients were treated in the Owen Sound General and Marine Hospital. Last June the county of Grey granted one thousand dollars to the building fund in addition to the annual grant.

A resolution was passed recently by the board of directors of the Vernon Jubilee Hospital, requesting that the city council take over the assets and liabilities of the hospital at the earliest possible date. During the month of September, thirty-one patients were admitted to the hospital, thirty-six were discharged, and sixteen operations performed.

A fire broke out in the General Hospital at Niagara Falls on the evening of October 15th. It was soon extinguished and no serious damage was done.

Eleven cases of smallpox were reported recently in Collingwood. A strict quarantine was enforced, the schools and theatres closed temporarily, and all children vaccinated.

At the annual meeting of the Board of Governors of the Ross Memorial Hospital at Lindsay, it was decided to increase the rates charged to patients. In future the charges will be,—public wards, $1.00 a day; semi-private wards, $1.50 a day; private wards, $3.00 a day. The number of patients treated during the year was 367, including 15 births; the total number of hospital days was 6,087, and the average duration of stay in the hospital was 16’39 days.
An outbreak of typhoid is reported from the village of Union, where fourteen cases have occurred within the past few weeks.

The military hospital at Kingston has been equipped with a medical laboratory for the third division.

QUEBEC

The present building of the Montreal Dispensary is too small and it is proposed to build a new dispensary at the corner of Inspector and St. Antoine Streets.

The Mackay Institute, Montreal, for the blind, deaf and dumb, has just concluded its forty-third year of activity. Seventy pupils were enrolled during the year and many were most successful in the examinations. The health of the pupils was good with the exception of a few cases of whooping cough. The superintendent reports a diminution in the number of blind: this is due partly to the work done by the Society for the Prevention of Blindness and partly to the care given to infants by nurses of the Victorian Order.

Dr. J. R. Oulton has been appointed superintendent of the Alexandra Hospital at Montreal.

Since last May forty-five cases of smallpox have been reported at Calumet. None of these proved fatal. It is hoped that the outbreak is now over.

During the week ending October 25th, one hundred and twenty seven cases of infectious disease were reported in Montreal. Among them were forty cases of diphtheria, seven of smallpox, and twenty-three of tuberculosis.

Several cases of smallpox have occurred on a farm just outside Grenville. The disease is still prevalent throughout the province and the number of cases reported each day is increasing.

MANITOBA

An outbreak of diphtheria occurred at Gretna at the beginning of October. The schools were closed and other necessary precautions were taken and the number of cases soon diminished.
The following officers have been elected by the Manitoba College of Physicians and Surgeons: president, Dr. McCalman; vice-president, Dr. Ross; registrar, Dr. Gray; treasurer, Dr. Coulter.

A sum of money has been collected for the purpose of giving a prize for an essay on original research work in physiology or physiological chemistry done in the laboratories of the University of Manitoba. The prize will be awarded annually or biannually, as may be decided.

If the necessary funds can be obtained, the central building of the St. Boniface hospital is to be rebuilt. An application has been made to the provincial government for financial assistance.

The trustees of the Winnipeg General Hospital have made application to the Legislature for an amendment to the charter of the hospital, so that if application be made by any person, an investigation into the administration of the hospital, its finances and accounts, may be made by the Commissioner of Public Utilities. Until such legislation is secured, the commissioner has been requested to investigate any complaint that may be made to him.

In the Hampton County Court, on November 7th, judgement was given in the appeal of the four physicians of Sussex, N.B., who were convicted on September 10th, on a charge of violating the Canada Temperance Act. The appeal was sustained in each case and judgement given accordingly, with costs amounting to thirty-three dollars in each case.

SASKATCHEWAN

The St. Paul’s Hospital at Saskatoon, which was opened recently, has accommodation for one hundred patients. The cost of the building was one hundred and seventy-five thousand dollars.

The Waddell Memorial Hospital at Canora is almost completed. Dr. Gray, of Montreal, has been appointed superintendent.

An x-ray apparatus has been given to the Victoria Hospital at Prince Albert by Dr. Strong and Dr. MacMillan.

A slight outbreak of smallpox recently occurred at Barwick among the Indians in the Soo reservation.
It is reported that seventy-one cases of typhoid were under treatment in Regina on October 1st.

Twenty-two cases of typhoid were admitted to the Moose Jaw Hospital during the month of September.

**ALBERTA**

Certificates of qualification permitting them to apply for license to practice in the province of Alberta have been granted to the following candidates by the University of Alberta: H. Barrow, L. C. Conn, R. G. Douglas, J. F. McCracken, W. A. Proud, W. A. Scanion, F. Standish, B. C. Sutherland, J. A. Jardine, A. B. Wickware, C. F. Atkinson, P. Dahl was granted a supplemental examination in anatomy and pathology.

Since January 1913, forty-four cases of tuberculosis have been reported in Edmonton, and twenty deaths from the disease have occurred.

The question of greater financial assistance to rural hospitals was recently brought up in the provincial parliament by Dr. Stanley, member for High River. He also suggested that a maternity grant should be made to the wives of new settlers.

An administrative building and a nurses’ home are to be added to the Vancouver General Hospital. The nurses’ home will be built large enough to accommodate one hundred and fifty nurses and will cost about $115,000. The cost of the administration building is estimated at $90,000.

Dr. C. D. Holmes has been appointed medical officer of health of Saanich municipality, to succeed Dr. H. Rundle Nelson who has resigned.

In future the Vernon Jubilee Hospital will be under the direction of a committee of twelve, including two members of the city council, two members appointed by the provincial government, and eight appointed for periods of three years by the city council. It is understood that a by-law will be submitted to the rate-payers for seven thousand dollars, which sum is required to free the hospital from debt.
Canadian Literature

Original Contributions

Dominion Medical Monthly, November, 1913:

The treatment of renal dropsy ............................................. H. A. Hare.
Internal hemorrhages: Can we control them? .................................................... F. Billings.
Tuberculin treatment .......................................................... H. Mackenzie.

The Western Medical News, October, 1913:

Mammary cancer ................................................................. J. Gunn.
Infection of the antrim of Highmore ........................................... G. P. Bawden.

The Canadian Journal of Medicine and Surgery, November, 1913:

The pharmacopoeia of the botanical physician eighty years ago .................. W. R. Riddell.
The newer ideas of the pathology and treatment of gout ................................ F. W. Rolph.

The Canadian Practitioner and Review, November, 1913:

President's Address, delivered before the Academy of Medicine, Toronto ........ H. J. Hamilton.

The Canada Lancet, November, 1913:

Consideration of some of the newer operative procedures on the frontal sinus and ethmoidal labyrinth ........................................... P. G. Goldsmith.
A case of hydronephrosis ..................................................... H. C. Burroughs.

Le Bulletin Médical, November, 1913:

Traitement scientifique complet de la tuberculose par la combinaison du traitement rational, du traitement chimiothérapeutique, du traitement physiothérapeutique ........................................... P. Dubé.
Medical Societies

CANADIAN HOSPITAL ASSOCIATION

The Seventh Annual Conference of the Canadian Hospital Association, held in Toronto on October 20th, 21st and 22nd, was one of the most successful ever held. Taking place as it did in the new General Hospital, no one attending the meeting could fail to carry away valuable information apart altogether from that gleaned from the splendid papers and addresses which made up the programme. The meetings were well attended and many outside superintendents were present, taking this opportunity of studying at first hand the workings of the new hospital. Among other things one of the newer phases which continually cropped up in regard to the papers and discussions was the matter of social service in connexion with hospitals. Dr. A. H. Boyce, the president, in his address dwelt upon the importance of influencing public opinion, especially in rural communities, in adopting precautions for the prevention of disease. Dr. J. N. E. Brown, formerly of Toronto but now of Detroit, gave a very interesting and instructive illustrated lecture upon the hospitals of the old world and the new. Dr. Clarke, the superintendent, gave a paper on Hospital Construction, after which he gave an opportunity for the delegates to inspect the new hospital, which is now numbered among the best to be seen anywhere. A paper on tuberculosis was read by Dr. George D. Porter, of Toronto. Dr. E. H. Young, assistant superintendent of Rockwood Hospital, Kingston, was elected president of the association.

ALBERTA ASSOCIATION FOR PREVENTION OF TUBERCULOSIS

The Alberta Association for the Prevention of Tuberculosis was formed by the Edmonton and Calgary branches of the Canadian Association, at a meeting held at Calgary on October 22nd last. The formation of this association is the result of years of work on the part of those in the province of Alberta who recognize
the need for more definite and united action in the prevention of the disease. With the exception of the sanatorium at Calgary, where forty patients received treatment during 1912, there are at present only twenty-three beds available for tuberculous patients throughout the province. Against this it should be noted that seventy-six cases of pulmonary tuberculosis have been reported to the provincial board of health during the present year and one hundred and seventy-two deaths from the same cause have occurred. The objects of the Alberta Association are to prevent the prevalence of tuberculosis by enlisting the coöperation of the people, by collecting and publishing useful information concerning its prevalence throughout the province, by coöperation with the government and other organizations in the enactment of proper laws adapted for the prevention of the disease, by promoting the organization and work of local societies, any of which may be affiliated with the association, by aiding in the provision of suitable sanatoria, and by other methods which from time to time may be adopted.

The honorary president of the association is the Lieutenant Governor of the Province, and the honorary vice-president is the Premier of the Province. Other officers are: president, John A. McDougall; vice-presidents, W. A. Georgeson, Calgary; Walter A. Huckvale, Medicine Hat; H. G. Nyblett, M.D., Macleod; Hon. Duncan Marshall, W. H. Clark, Edmonton; secretary, J. H. Hanna, Calgary; treasurer, Thomas Underwood, Calgary.

It was decided that a sanatorium—to be named the Queen Mary Sanatorium—should be established between Mitford and Midnapore, on land, three hundred and twenty acres in extent, which has been granted for this purpose by the Dominion government. A board of control, with power to add to its members, was elected. It was resolved that indigent cases receiving treatment in the Queen Mary Sanatorium should be paid for by the municipality in which they resided.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

The second regular meeting of the society was held Friday, October 17th, 1913, Dr. D. F. Gurd, president, in the chair.

Case Report: A diverticulum of the bladder containing a large stone, Dr. Wm. Hutchinson. The patient was a man of fifty-
nine years of age who was referred to me by Dr. Shaw. He complained of slight frequency of micturition during the day, which had been present for about a year. During the past three weeks this frequency had increased and become present at night. With this increase there developed pain in the region of the bladder. Catheterization revealed the presence of five ounces of residual urine, which was loaded with pus. The prostate was found to be somewhat enlarged. The first stage of a prostatectomy was formed and then it was found that there was a large diverticulum containing a stone. A drainage tube was inserted into the bladder and ten days later the diverticulum and stone removed. The stone was about the size of a duck's egg.

Discussion. Dr. J. G. Adami: I did not quite gather whether Dr. Hutchinson had determined if this was a congenital or acquired diverticulum. From the general history and the lateral position, it rather signifies the acquired than the congenital form.

Dr. Hutchinson: From the examination of the stone, I felt that the diverticulum was of the acquired type. There are, however, certain points in favour of its being congenital. In the first place it had definite muscular walls and a contracting orifice, but on the other hand it was not in the situation in which congenital diverticula are found.

Pathological Specimen: The pathology of Charcot's neuro-arthropathy, with lantern demonstration, Dr. J. Kaufmann.

The specimen is a right knee-joint which shows the changes in the articular surfaces of the bones, the synovial membrane and the periarticular tissues. A remarkable change is noted in the articular and nutrient arteries. There is a marked endarteritis obliterans and a distinct mesarteritis; there is also a marked endo-, meso- and peri- phlebitis. The bones themselves show a marked thinning of the compact layer and a corresponding increase in the size of the medullary cavity. A small gummatous mass was found in the periarticular tissue. The marked chronic inflammatory reaction associated with the active lymphocytic cell invasion leads one to believe that we are dealing with a progressive and active process, and the presence of the gumma and the vascular changes typical of lues make one believe that we are dealing with an active luetic lesion. The remarkable changes in the articular and nutrient vessels suggest that we are dealing here with a vascular arthropathy rather than a neuropathic change.

Discussion. Dr. C. K. Russel: This case is of extreme interest and importance to pathologists and neurologists. I do not
know of any similar observation. Of course one recognises, especially in the last two or three years, that we must change our ideas about para-syphilitic conditions, etc., since the spirochete has been found in the brain of general paralytics and in the cord in tabes dorsalis. At the same time it is a little dangerous to argue that all cases of Charcot’s joint are due to gumma, especially when one gets an absolutely similar condition in syringomyelia, which has nothing to do with syphilis. Clinically, these Charcot’s joints are often seen to clear up considerably under active syphilitic treatment, especially if they are obtained early and treated strenuously with salvarsan and other drugs, and I think that many of them may be due to a gummatous condition; this seems all the more probable when one recognises that in these cases there is often associated more or less severe injury to the affected joint. One can imagine that a piece of lesser resistance has been formed and an opportunity given for the spirochete to proliferate. As to the endarteritis and the lymphocytic infiltration, is it not true that these would be present in any chronic inflammatory focus, as Dr. Gruner has suggested? This observation of Dr. Kaufmann’s should have the effect of making every case we come across the object of more thorough study.

Dr. J. G. Adami: While a healthy man looks down upon the process indicated by the old phrase, “Thee scratch my back and I’ll scratch thine,” I cannot help thinking that we in Montreal are a little apt to be hypercritical regarding the work done by our colleagues, and that a heartier glow of appreciation of work well done would stimulate the whole of our medical community. With regard to the communication by Dr. Kaufmann, in my opinion it stands with Dr. Russel’s work on the experimental production of the Argyll-Robertson pupil, as containing observations of which we as a society may well be proud. All of us who have enquired into Charcot’s joint disease must, I think, have felt thoroughly dissatisfied with the trophic and neural theories of causation which hitherto have held sway. They did not adequately explain; the conditions in the cord and the nerves passing to the part did not confirm the idea that we dealt with a neurosis. I have seen a large number of Dr. Kaufmann’s sections and wholly agree with him that they present a syphilitic infiltration around the vessels. The condition of those vessels alone strongly suggests a syphilitic lesion. I should rejoice had he been able to detect the spirochetes, but the added presence of a definite gummatous mass wholly confirms his contention, and this being so we can at last comprehend the nature
of the joint changes, namely, that we are dealing with a syphilitic periarteritis, and arteritis in general which leads to obliteration of the vessels and in addition atrophy and absorption of the tissues supplied by them. More and more we are coming to realise that these vascular changes are the striking histological feature of progressive syphilis. I do not deny that nerve changes induce atrophy and even atrophy of the bones, and in this connexion I think Dr. Kaufmann has been unfortunate in mentioning the changes associated with syringomyelia in the same breath with these "Charcot changes." The former I am fully prepared to regard as neuratrofies. I am quite prepared to find that syphilitic lesions may show themselves at regions of lowered resistance and irritation and to see in this combination the explanation of why particular joints are affected and why Charcot's disease develops.

Dr. Norman Viner: I have been very much impressed by Dr. Kaufmann's demonstration, but there is one point I would like to hear made more clear. If Charcot joints are nothing more nor less than a manifestation of tertiary lues, as Dr. Kaufmann seems to maintain, how is it that every Charcot joint one sees is associated with tabes or general paresis, and never with a mere tertiary lues. I have seen a few cases of Charcot's joint in the knee, the ankle, and the elbow, but not one of them was a frank lues, but each occurred in association with general paresis or tabes. In short, if Dr. Kaufmann's theory is right, we should expect to see the vast majority of Charcot joints in straight lues, whereas we see it in none. Finally, I would like to ask Dr. Kaufmann whether the specimen exhibited to-night comes from a case of tabes, general paresis, or tertiary syphilis.

Dr. Fraser B. Gurd: I have always had a point of view with regard to these atrophies and other conditions that were associated, or supposed to be associated, with nervous lesions, which it seems to me would be of interest in discussing this case and explaining the questions which Dr. Viner has brought up. In leprosy similar types of lesions are found. There are arthropathies in the metatarsals, and there frequently occur atrophies and eventual "falling off" of fingers and toes. The usual point of view taken with regard to these phenomena is that they are due to the disturbance of the trophic nerve supply—trophic disturbances. In the leper I have never seen a case in which the history of trauma did not play a part to which the whole course of the affection could be traced. The common cause is burning of the toes. The fishermen burn their toes when coming in from fishing or stub their toes in some
way, and my belief is that there is an active inflammatory lesion of the joint. In certain types of syphilis there is a diminution of the sensibility of certain parts and as a result the patient's pain perception is not acute and he is willing to walk about with knees in a state of inflammation which a normal individual would not be able to do. I fully accept Dr. Kaufmann's explanation that the lesions are luetic—they are undoubtedly inflammatory—and the reason that they obtain such tremendous progress is that the individual is able to walk about on them, whereas a normal individual with sensitive powers would be bed-ridden. There is the same thing in the peripheral lesions in syringomyelia— injury. As with the fishermen there is a history of burning of the fingers and toes, and loss of them as a result of diminution of sensitiveness owing to the nervous lesion.

**Paper:** A symposium on the Seventeenth International Congress of Medicine.

1. Dr. Maude E. Abbott. The symposium was opened by Dr. Maude Abbott with a description of the Museum of the Congress particularly of that portion of it which had been allotted to the International Association of Medical Museums, in which McGill had been largely represented, and the Wellcome Historical Museum, which was also a collection of magnitude and of the highest interest. The Congress Museum occupied a long series of well-lighted rooms on the second floor of the Imperial College of Science, South Kensington. It was divided into twenty-three sections, of which twenty-two, anatomy, physiology, pathology, etc., corresponded with the divisions of the Congress proper, while the twenty-third was an additional special department, the section of Museum Technique, which was organized, by special invitation, by the Medical Museums Association, with the cooperation of the Museum Committee of the Congress. This section occupied a relatively large space at the extreme end of the Museum proper, and was the most representative part of the collection, forming in itself a miniature museum, the large international membership of the association contributing to it scientific material of the most varied character, all of which being especially prepared for exhibition purposes was legitimately comprised under the heading of Museum Technique. Following the circulars sent out by the association, the section was divided into: (1) museum technique proper consisting of methods of preservation, preparation and mounting of material; (2) methods of housing and display, and (3) museum administration, including entry system, methods of indexing, cataloguing, and teaching.
Among exhibits of especial interest in this section were the following: Prof. Wahby, of Cairo, Egypt, showed a remarkably large and elaborate collection of specimens prepared by corrosion injection methods, both in fusible alloy, coloured celluloid, and wax, showing the cavities or channels of the body, and the relation of their ultimate ramifications. This old-time method was here carried out on such an extensive and complicated scale both in the human subject and in the lower orders, as to present some finer anatomical and physiological points not previously objectively demonstrated. Prof. Spalteholz, of Leipzig, had a beautiful exhibit, which he demonstrated in person throughout the Congress, of specimens showing his special methods of rendering organs and tissues transparent by placing them in a solution of similar refractive index. Thus a human hand, the arteries injected with cinnibar-gelatine, decalcified and rendered maximally transparent by means of a mixture of oil of wintergreen and benzyl benzoate; the skeleton of a sole stained with alizarin; a transparent human skull, etc., The various stages in the process were also shown, i. e. bleaching in (1) forty per cent. alcohol, (2) benzol, (3) mixture of oil of wintergreen and benzyl benzoate equal parts. Prof. Vollhardt, of Mannheim, had a unique and most valuable series of hearts fixed by a special method to show different degrees and stages of hypertrophy and dilatation of the chambers in the various valvular lesions and in extra-cardiac strain. His procedure was to distend the heart chambers at autopsy, preserve in kaiserling, and after fixation pass through graded strengths of alcohol, xylol and xylol-paraffin, finally immersing in liquid paraffin and keeping at a suitable temperature until thoroughly saturated. Then remove from the paraffin bath and drain. Windows may be cut from the walls of the chambers, the organ retaining its shape as during life. Prof. Adolph Meyer, of Baltimore, showed glass reconstruction models of the brain, in which the magnified serial sections were traced on glass sheets in inks, variously coloured to represent the different anatomical structures, the whole bound together and forming a transparent glass block, in which the intimate relations of parts are visible. Loose-leaf catalogues on slightly different plans were shown by Prof. Lorain Smith, Edinburgh, Dr. Braxton Hicks and the McGill Medical Museum. Mr. E. L. Judah, of McGill, had a number of exhibits, which elicited much interest and approval, among which may be especially mentioned series of museum jars, graded to fit various organs, a special museum jar cement (Muir and Judah), specimens mounted on frames to preserve their anatomical relations and in fluid under clock glass, etc.
The meetings of the International Association of Medical Museums were held in a room adjoining the section of Museum Technique. There was a large international attendance and lively interest was displayed. A symposium on the microscopic technique of nervous tissues by Dr. Georgine Van Heumen, Dr. René Sand, Brussels, and Ariens Kappers, Holland, and communications on vital staining by Dr. R. A. Lambert, New York, and on maceration of renal tubules by Prof. Carl Huber, Ann Arbor, were important contributions.

Numerous exhibits of great interest were seen in other parts of the Congress Museum, as well as in the section of Museum Technique. Thus, splendid series illustrating occupational diseases with the causation of fatalities and results were portrayed. The new cardiac pathology was abundantly illustrated by electrocardiographic and polygraphic work.

The Wellcome Historical Museum, originated by Mr. H. S. Wellcome, of the well-known Burroughs & Wellcome firm, was one of the most important and interesting features of the whole congress. It was recognized as the museum of the section of the History of Medicine and was opened by Sir Thomas Barlow, president of the Congress, with addresses by Sir Rickman Godlee, president of the Royal College of Surgeons; Sir Francis Champneys, president of the Royal Society of Medicine; Sir Frederick Treves, and Dr. Norman Moore, president of the Section History of Medicine. The collections occupied two large suites of rooms and were arranged on the basis of the evolution of the history of medicine along the lines of primitive folklore on the one hand and the development of the rational Hippocratic school on the other.

This is, we believe, the first purely historical museum inaugurated. Its successful inception was greeted with enthusiasm and appreciation by the International Congress of Medicine.

2. Dr. J. G. Adami: I have been asked to speak about the outstanding features of the recent International Congress in London rather than about any individual section. Inevitably following these directions I was led to follow the lines taken by Sir Thomas Barlow, the president, by Ehrlich and the other deliverers of addresses, and must begin by a comparison between the previous London congress in 1881 and the present. In making that comparison there are certain distinctions that stand out so strongly that they must arrest everyone's attention. First and foremost, there is the marvellous change that has come over the world in thirty-two years. In 1881 it was a memorable event for any foreign physician
to make the pilgrimage to London; to-day, with improved methods of communication it is a commonplace event to take a journey of one or two thousand miles. In its day the 1881 congress shone out above its predecessors on account of the extraordinary attendance; the presence then of three thousand members constituted a record. This year's congress was similarly a record and in point of numbers constituted the greatest international congress perhaps ever held. Medical men poured in from all centres and corners of the world. There were more than eight thousand full members and more than two thousand of these brought their women-folk with them. And the extraordinary fact was that, save in the immediate neighbourhood of the meetings, the characteristic bronze medal—a badge so handsome that all were proud to wear it—was rarely to be encountered, for London is so huge that ten thousand visitors spending a week there for one particular event was scarce noticeable, they were swallowed up in the huge city. The hotels and places of amusement showed no overcrowding and life outside the congress went on as usual. Even to those of us who know and appreciate our London, this could not be but impressive.

Next must be noted the admirable way in which this huge congress was managed. There was no fuss, no agitation, and with the one rare exception of the entertainment at the Guildhall—due to the fact that whereas in one part of the daily journal it was clearly stated that entrance was to be by ticket, in the programme for the day the fact was not noted that the Lord Mayor would receive only a limited number, and as a result there was a painful mob of disappointed men and women besieging the entrance to the hall—with this one exception, everything was achieved with extraordinary precision and smoothness. The arrangements might have been in charge of officials accustomed for years to handling large bodies of men, but as a matter of fact only a few weeks before the opening the whole of the active staff consisted of the general secretary, Dr. Herringham, and one or two typewriters; and Dr. Herringham had had no previous experience of such work. Here in justice it must be added that Mr. Meakins, who had been on the official staff of the previous congress, loyally aided Dr. Herringham from his experience. Those, however, who have attended recent international congresses, more particularly in Southern Europe, at Lisbon or Rome for example, could not but realise that the success of the Britisher must largely be due to his extraordinary powers of organization.

A word also must be said regarding the munificent hospitality
of our London colleagues. Each night one or other president of a section at some club or hotel gave a dinner to some two to four hundred guests. The series was started by the dinner given by the government at the Hotel Cecil, and culminated with another given by the president at the Savoy. Each of these entertainments was wonderfully arranged and served, while the number of private dinners to two to four dozen guests was beyond counting. And again under the unwearied and cheerful guidance of Miss Barlow, the ladies of the congress were kept constantly entertained.

Turning now to the work of the congress it is impossible, in the first place, not to compare the previous and the present presidents—Sir James Paget with thoughtfulness imprinted upon every line of his face, the cultured orator whose very presence stamped him as a man apart, and Sir Thomas Barlow, a wholly different type, sturdy in build, proclaiming himself in word and act as the Lancashire man but, while doing this, showing those virtues that have brought Lancashire men to the fore: simplicity of demeanour, sound common sense and directness. No matter what occasion, and occasions were many, Sir Thomas Barlow managed with an extraordinary happiness to say that which was exactly the right word. His presidential address was most happy.

Next we came to the great public addresses given in the Albert Hall. It has been said that the 1881 congress was rendered notable by the presence at it as active participators of five immortals, Pasteur, Lister, Koch, Virchow, and Huxley—five men assured of being remembered through long centuries to come. In anything similar likely to be said regarding those who gave the addresses last August? Certainly there was one man who stood out as a peer with the five just mentioned, one sure immortal, namely, Paul Ehrlich. How about the rest?—Chauffard, who gave the address in medicine, Harvey Cushing in surgery, John Burns on public medicine, and Bateson on heredity? Will Bateson, for example, tell upon posterity? He is, it is true, a man of extraordinary ability and force and his work during all those long years upon variation and the laws underlying heredity has caused extraordinary interest. Yet that work—the study of Mendelism—seems to me to be leading to an impasse. Mendel's law only tells us what combinations and permutations may occur among the group of unit characters already possessed by the individuals, it throws no light upon evolution proper, upon the acquirments of new characters in the development of the race. Undoubtedly the greatest general address given, that which made the greatest impression and was the most masterly,
was that given by Harvey Cushing, and those of us who know him realise that great as have been his achievements in experimental surgery, much more is still to be expected of him. That address may well be submitted to those who to-day are agitating against the employment of animals in research. It was a triumphant and timely indication of what that research has accomplished for mankind during the last thirty years, what English medicine and surgery has lost during that period because of the restraining Act operative in Great Britain. The address by the Hon. John Burns had a singular interest in the noble testimony given by one, himself once an artisan, as to what the working classes owe to preventive medicine.

The outstanding features in the congress of 1881 may be said to have been the triumph of Lister in connexion with asepsis, the opening up of bacteriology as part of the work and the interest of the medical man through what Pasteur had accomplished together with the demonstration given by Koch during the course of the congress of his methods, now the universal methods of culture of bacteria. Of this last congress what will possibly be regarded as the outstanding features are:—first of all, as told by Ehrlich in his address, the triumph of the method of chemio-therapy. We in Montreal are proud to think that in his development of salvarsan, Ehrlich started from the observations of one of our Montreal men, Dr. Wolferstan Thomas, upon the value of atoxyl in sleeping sickness. This chemio-therapy has not only proved itself useful in diseases caused by trypanosomes and spirochetes and as indicated by Leonard Rogers' admirable work in Calcutta with the amoeba of tropical dysentery (through the use of emetin); the work within the last few months of Morgenroth and others, demonstrates that we can look forward to the destruction of the simpler and more resistant bacteria by similar methods. It may well be, therefore, that we shall date from this congress the passage from the treatment of infections by immune bodies, in itself a notable achievement, to the treatment by specific chemical substances.

In the second place, possibly, as indicated by the discussion upon beri-beri, we may regard this congress as establishing the recognition of a group of diseases due to defective nutrition, the recognition that beri-beri, ship beri-beri, scurvy, Barlow's disease, and yet other conditions, are due, not to the mere lack of abundant food, but to a deficiency in such food of what are termed vitamins, bodies present in extraordinary minute quantities but which if not present lead to the gravest organic disturbances.
And lastly, as an extraordinary difference between to-day and thirty years ago must be mentioned the participation of the whole world in this congress. A generation has seen a public becoming generally wide awake to the development of modern medicine. It was most striking how day after day not merely the British journals but those in France and Germany and upon this continent reported the addresses and the discussions. Medicine now is a matter of which, as in the old Greek days, every cultivated individual must have some intelligent knowledge, that knowledge is part of the full education of to-day. We are carrying the people along with us in medical advances, not merely in hygiene but in infectious diseases. Only ten years ago it was regarded as a bold thing to demand the notification of tuberculosis; to-day so intelligent is the public interest in these matters that there should be no difficulty in carrying out the recommendation of the congress in demanding of every government of every civilized state, that they take steps for the notification and the eradication of venereal disease.

3. Dr. R. A. Kerry: One great trouble with the congress was that there were so many papers one wanted to hear which were scheduled for the same time, that if you wished to attend your own section regularly, you had to miss a great deal that was instructive and important to yourself. There was one object lesson, however, which the younger men would do well to heed, and this was the manner in which several of the veteran members attended every day, were on time and followed all the discussions with the utmost interest. Mr. Nettleship, who retired some years ago, was very noticeable in this respect.

In the Ophthalmic Section there were four principal discussions, the first on that peculiar intractable affection termed "Chronic Uveitis," which is exemplified by more or less exudate into the eye, varying with the severity of the case and followed, in the most severe type, by a shrinking together of the eyeball and panophthalmitis. The heading under which the paper was given out was "Chronic uveitis not due to syphilis or tuberculosis," so that those in authority evidently do not agree with the view held by some authors that the disease is always tubercular. Probably further light on the question will result in its being included in that great class of diseases which has claimed so much attention in recent years, due to chronic mixed infection. No form of treatment as yet seems to be of much use in these cases.

The next discussion was on glaucoma, a subject of great interest to us all, and was extremely interesting in that Professor Le-
grange, Major Herbert and Major Elliott, to whom the recent advance made in the treatment of this disease is so largely due, were all present and took part in the discussion. It seems to be conceded that Major Elliott’s trephine operation has some advantage in that it is more easily and quickly performed. It is to be remarked, however, that even though in the majority of cases the operation is extremely satisfactory so far as preventing damage from increased pressure is concerned, the injury to the nerve in cases in which the operation is not performed soon enough is of a more or less permanent nature; cases also in which operation is followed by cyclitis are apt to be unsuccessful as the exudate tends to close the trephine opening.

There was a fairly long discussion on the influence of light on the eye, and there was a most appalling array of different affections, which we seldom if ever meet here. This was more or less a classical study, a great deal of stress being laid on the permanent changes in the tissues by exposure to strong light, cataracts and inflammatory changes in the fundus being the most serious.

Szily and Morax, in their papers on anaphylaxis, produced much the same impression as the perusal of Richet’s book, that there is a great deal not proven and on which we require further information. It seems though that extended observation in this new field may lead to some remarkable results. The peculiar condition of local anaphylaxis and the even less known auto-anaphylaxis may upon further study reveal totally new principles and furnish us with very efficacious modes of treatment. The reaction produced by local anaphylaxis in the eyes is associated with exudate of plastic material and resembles that in chronic uveitis, so that if we can produce the condition at will, we need not despair of being able to prevent or remove it. It is interesting to note that the use of albumins from the crystalline lens to produce anaphylaxis yields variable results, the rule of specificity being inconstant.

There were many other good papers read at the congress and one particularly good one was read at the Ophthalmological Congress at Oxford, by Dr. Mauvas, of Paris, on albuminuric retinitis, illustrated by a series of beautiful slides in which he showed that the condition of the vessels in the eye was the same as those in the kidney.

4. Dr. G. E. Armstrong: The congress was an education to all of us who had the opportunity there afforded of meeting so many of the leaders in surgery in Great Britain and on the Continent; those on this side of the Atlantic we are more familiar with. The
meetings were well attended and the papers of a very high quality. The reading of papers in foreign languages is rather trying, I think, to most Anglo-Saxons. We may perhaps read German fairly easily, or French, and most of us, or some, can follow a clinic in German or in French with comparative ease, but to sit in a room and to hear an address read rather rapidly with all the nice words and fine phrases thrown in, is another matter. Some of us, I think, found that we would have to read the paper afterwards to get the good of it. The discussions on these papers might be more full, but for lack of time. One cannot take in the full trend of a heavy surgical paper but at the same time an exchange of views by the master minds would be of very great interest and more easily understood. It was commonly said that there was nothing very new before the surgical section. Perhaps there was no great epoch-making paper, but some of the symposiums and some of the papers really made a very important step forward, crystallized the opinions of different countries, the experiences of different clinics; and in that way I feel that the congress was really one of the most useful and helpful from an educational point of view that I have ever had the privilege of attending.

TORONTO ACADEMY OF MEDICINE

The regular meeting of the section of medicine was held on the evening of October 14th, Dr. J. T. Fotheringham in the chair. After a brief address by the chairman on the work of the ensuing year the business of the evening was proceeded with.

Dr. Fotheringham read a report of a case of cerebral abscess in a young girl developing after an otitis media and a subsequent mastoid operation. A week after the operation while being given an enema, she suddenly became unconscious and ceased breathing. The outstanding features of the case were (1) absence of fever, (2) no eye changes, (3) absence of rigours, (4) absence of vomiting, (5) absence of giddiness, (6) no mental confusion. Dr. Middlebro of Owen Sound reported a similar case. Dr. Armour enquired in reference to ante-mortem pallor replacing cyanosis. Dr. Reeve said that cerebral abscesses often have thick walls and should be opened with a sharp pointed knife.

Dr. Fotheringham presented a case of tetanus. The patient, who was a male aged eighteen, injured his foot, and thirteen days
later developed stiffness particularly at the back of his neck; B. tetani were recovered. Ten centigrams and later twenty centigrams of Flexner's serum were given, sedatives every four hours, and injections of a dram each of carabolic acid and glycerin. An ounce of carabolic acid was given in three days; no nephritis resulted, although there was some hematuria. Dr. Parsons had used the serum but never fifty per cent. carabolic acid. Dr. Strathy reported a case in which mild tetanus had followed the administration of serum. Dr. Paul Scott enquired as to the protective dose of serum. Dr. Carveth advised suction and the use of tincture of iodine as a preventative.

Dr. H. B. Anderson then reported some of the work done at the International Medical Congress, paying particular attention to syphilis for the investigation of which a Royal Commission had been appointed. Ehrlich, he said, was the most prominent figure at the congress. Dr. King Smith also spoke of the important part syphilis had played in the discussions. One of the most interesting papers was on the control of syphilis by legislative measures. The need of hospital accommodation was emphasized, while another important point brought out was the fact that the regulation of prostitution did not decrease venereal diseases.

ALBERTA MEDICAL ASSOCIATION

The next annual meeting of the Alberta Medical association will take place at Medicine Hat. The president of the association for the year 1913-1914 is Dr. C. E. Smyth; the secretary is Dr. T. W. Gershaw, Medicine Hat.

ESSEX ASSOCIATION OF MEDICAL OFFICERS OF HEALTH

The first annual meeting of the Essex Association of Medical Officers of Health was held at Windsor on November 4th. The meeting was a successful one and was well attended. A paper on tuberculosis was read by Dr. Casgrain; and papers dealing with
sanitation in its various aspects were read by Drs. Ashbaugh, McCormick, Brien, and Poisson. The election of officers resulted as follows: president, Dr. J. W. Brien, Essex; vice-president, Dr. Paul Poisson, Tecumseh; secretary-treasurer, W. J. Beasley. The next meeting of the association will take place at Windsor next January.

PERTH COUNTY MEDICAL ASSOCIATION

A MEETING of the Perth County Medical Association was held at St. Marys, on October 8th. It was well attended. Dr. G. W. Ross and Dr. H. A. Beatty, of Toronto, each read interesting papers. The question of the fees charged by profession was discussed, and the following rates were adopted as a minimum schedule: day visits, $1.50; night visits, $2.00; telephone consultations, 50 cents to $1.00; country visits, $1.50 within the first mile, and an additional 50 cents for each succeeding mile.