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PERFORATION IN TYPHOID FEVER.

BY

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Toronto.

This accident is so frequent a cause of death in typhoid fever that it merits our most serious consideration. In recent years, operation has resulted favourably in so many cases that there is good reason to look for much more favourable results as the conditions become more thoroughly understood and the necessity for prompt action better realized.

The frequency of perforation varies considerably in different seasons, just as does the severity of the disease itself. It occurs in about one and a half to three per cent. of all cases of typhoid fever. In the Toronto General Hospital during the last two years the number has been 5 in 240 cases, nearly 2.1 per cent. There were in all twenty-five fatal cases, 10.4 per cent., so that perforation occurred in 1 in 5, or 20 per cent. of the fatal cases. This is considerably higher than the general average percentage of reported cases. In 4680 autopsy reports examined by Fitz, perforation occurred in 6.58 per cent; and in the 2,000 autopsies at Munich there were 114 perforations, 5.7 per cent. However, in the Johns Hopkins' series, perforations occurred in over 30 per cent. of the fatal cases.

Without studying our own statistics, we can scarcely realize how frequently this calamity overtakes our patients; at least we will find it difficult to have before our minds in each case we see the risk of perforation in that individual case, and in the event of the accident occurring, that his life will probably depend on its early recognition, as only in prompt action on our part lies any hope of saving his life.

The character of the perforations is variable and has a marked bearing on the symptoms. First, the perforation may be large, owing to the slough extending through the bowel, including the peritoneal coat.

Then, as the slough separates, the intestinal contents escape early and freely into the peritoneal cavity and there is rapid diffusion of infection throughout the cavity by means of the lymphatics. More frequently, separation of the slough is delayed; in that case the diffusion of infection is also delayed so that the symptoms are at first local and correspondingly milder. *Secondly*, from extension of the ulcerative process through the peritoneal coat the perforation may occur as a single small opening, usually at the bottom of a small ulcer formed by the destruction of a solitary gland; or a number of small cribriform openings may form at the base of a sloughing Peyer's patch. In such cases the peritonitis will usually be localized at first and become rather slowly diffused. A *third* form is described; after the sloughing and ulceration has extended to the subserous tissue rupture of the serous coat may result from various causes, such as the tension of peristalsis excited by irritant contents as milk curds and other undigested food; pressure on the abdominal contents during straining at stool or by external pressure; injury by coarse particles in the contents of the intestine, as the outer coat of grain in unstrained gruel, etc. In these cases, the opening being large and suddenly formed, the intestinal contents escape rapidly and widespread infection of the peritoneum quickly follows.

In the next place the symptoms of perforation vary according to the situation which the perforated bowel occupies in the abdominal cavity. The nearer it lies to the central part of the abdomen the more fulminating will be both the local and constitutional symptoms. Owing to its proximity to the central nerve structures in the abdominal cavity, the pain will be more sudden, extreme, and diffuse, so that it will give no indication as to the seat of the lesion. We meet with cases of appendicitis from time to time with symptoms of a similar character. In such cases the appendix extends far inwards into the umbilical region, and when it ruptures or becomes suddenly gangrenous there is sudden and virulent peritoneal infection. A similar condition may result from rupture of a septic gall-bladder. Any of these accidents will be rapidly followed by meteorism and spasm of the abdominal muscles. Shock will be extreme and sudden in development. Furthermore, owing to the great vascularity of the central portion of the peritoneal cavity, great facility is afforded for absorption, consequently toxæmia takes place with extreme rapidity. On the other hand the nearer the perforated bowel lies to the periphery of the abdomen the more focal will be the attendant phenomena, and the more accurately can it be localized by subjective as well as objective symptoms. In such

cases, the local and constitutional symptoms are both milder and more gradual in development.

Perforation may occur in any kind of case, even the mildest ambulatory one, but, in common with other accidents, it is much more frequent in the severe cases with active abdominal symptoms such as diarrhœa, meteorism and hemorrhage—all symptoms of extensive and deep ulceration. This greater liability to perforation in diarrhœa cases is well shown in the Johns Hopkins' Hospital service in which the accident occurred in twenty out of one hundred and fifty-seven cases with diarrhœa—12¾ per cent, as against ten in six hundred and seventy-one non-diarrhœa cases, 1¾ per cent. Our own experience is similar; in four out of the five cases there was marked diarrhœa—in some of them caused by the daily administration of purgatives; in the fifth case, sent into the hospital after perforation occurred, there was moderate diarrhœa and slight hemorrhage. It is probably a matter of indifference so far as the liability to perforation is concerned whether the diarrhœa is due to irritation of the bowel by the toxins of the disease, by irritating bowel contents from injudicious diet, or by purgative drugs. The symptoms depend not only on the situation and nature of the perforation but also on the severity of the general symptoms and the degree of toxæmia. In those with much prostration and blunted perceptions the symptoms may be quite masked, especially if meteorism is marked, so that the occurrence of perforation cannot be more than suspected. In a second class of cases, rare ones in which there is much toxæmia but without mental obtuseness, the local reaction may be so slight that there are no abdominal symptoms to mark the occurrence of the accident, just as may occur in septic peritonitis from other causes—e.g. strangulated bowel or gangrene of a fallopian tube. In a *third* class, milder cases in which neither the mental nor physical perceptibility is much, if at all, obtunded, the symptoms are practically always frank. To this class probably belongs the majority of all cases of perforation; at all events, it is in these cases that there is at least a fair chance of recovery if treatment is prompt. Fortunately, the great majority of cases of perforation occurring in this country, at least, for several years past, belong to this class. Cases of extreme toxæmia with marked meteorism, profuse diarrhœa, muttering delirium, and subsultus tendinum are of rare occurrence.

It is worthy of note that the immediate symptoms are due to perforation and local irritation of the peritoneum, while the later ones are caused by the peritonitis and septic absorption caused by infection by pyogenic organisms and not by the typhoid bacillus.

If we examine the various works in medicine, large and small, we will find that the majority of writers describe the onset of the symptoms of perforation as marked by extreme severity—sudden acute pain, rigidity of the abdomen, some fall in temperature, acceleration of pulse, anxious facies and rapid onset of collapse. So far as my own experience goes, only a small minority of cases show this extreme degree of disturbance. It is of great importance that we should appreciate the fact that the symptoms of perforation may at first be only few and moderate in degree; otherwise the condition will not be recognized at once and therefore proper treatment will be delayed. It will not be amiss to emphasize the fact that every minute's delay adds to the gravity of the condition and lessens the probability of recovery, one might almost say, in a geometrical ratio.

We know that the phenomena of typhoid fever may vary very much in different seasons or in cycles of seasons. A decade or two back, the disease in Toronto was marked by much greater severity than it has been of late years. In warm climates it is probably a much graver disease than in our temperate climate. In consulting the Johns Hopkins' Reports one is struck by the almost uniformly severe course of the disease in almost every case of perforation—high temperature, rapid pulse, diarrhoea meteorism, and delirium. We see few such cases; as already said, ours are nearly all of a much milder type, although often greatly protracted. Notwithstanding this, our percentage of perforation cases is nearly as high as in the more severe types.

Of the symptoms of perforation, *pain* is much the most important and constant. In the milder classes of cases that occur in this country, it is practically never absent. It may be the only symptom. It may be so slight that little complaint is made of it, even by a patient otherwise in good condition, but it is always persistent, and usually but not necessarily paroxysmal. This one character of *constancy* should be emphasized as it stamps the pain as due to an organic lesion and not to functional spasm. Persistent pain is the only symptom I have never known to be absent in perforation of typhoid fever in the milder type of cases we are discussing. Of course my experience is relatively small, but in it are two cases illustrative of the course in many others. The first was that of a case of ambulant typhoid in a man aged 48. He had been under treatment for a dyspnoea due to a syphiloma of the apex of the right lung. Three months later, after he had recovered from the dyspnoea, he sought advice for malaise and loss of appetite; no cause for it being apparent, it was thought to be due to the effect of the potassium iodide which he was taking. The drug was stopped. He did not report

again for two weeks. When seen then he said he had had moderate pain in the abdomen for two or three days. He was found sitting in a chair, looking much distressed. There was fluid in the abdomen to the level of the anterior superior iliac spines. The abdominal wall was not tense nor was there great tenderness. Death occurred next day and at the autopsy two small typhoid ulcers were found in the ileum and a perforation 1 mm. in diameter at the bottom of one of them.

The other case was even more instructive. It was that of a man, aged 32, in the General Hospital a few years ago. His illness was moderate in degree; there was slight diarrhoea but the abdomen was of normal appearance and his mental condition was quite clear. In the third week, one afternoon while I was in the hospital, he felt a rather sudden, though not severe, pain in the lower part of the abdomen, but not distinctly localized. There was no tenderness or increased tension in any part of the abdomen, nor change in temperature, pulse, or respiration, or in the facial expression. He himself regarded the pain as of little moment. The instructions left were that he was to have plenty of water but no food nor any anodyne; he was to be closely watched and his condition reported in three hours—sooner if he were worse, the intention being to have an operation done if even this moderate pain persisted. He was reported in the evening as free from pain, and concern regarding him was dismissed. On seeing him next day, there was no apparent change in his condition but he said the pain still persisted. It was then found that through some misunderstanding, morphine, grain  $\frac{1}{4}$ , had been given the evening before. His pulse was about 90 and temperature 102 F., the same as for some days previously. The abdomen was flat, quite soft everywhere, not tender nor presenting any abnormal condition. My colleague, Professor Cameron, saw him with me and we concluded that the persistent pain, though slight, must be due to an organic lesion and, therefore, almost certainly to perforation, and we decided to operate. An oval perforation, about 1 cm. in the long axis, was found about thirty inches above the ileo-cæcal valve and the coil of intestine in which it occurred lay down in the pelvis behind the bladder. The general peritoneal cavity was fairly protected by the filling of the inlet of the pelvis by other coils of intestines. By this time, however, twenty-six hours after the onset of the pain, and therefore after the occurrence of the perforation, infection had been carried up to the root of the mesentery by the lymphatics which were marked out by red striæ, and it was to this infection that the fatal result four days later was due. Had the operation been done early, as intended if the pain persisted, there is no reasonable doubt that he would have recovered.

These two cases clearly emphasize the importance of even slight pain, if persistent, notwithstanding the absence of all other symptoms and signs. The first cause probably had no other symptoms and the second certainly had not.

The pain signifies local peritoneal irritation by whatever cause produced whether with or without perforation. A variety of conditions may be concerned in causing the pain to be slight and in preventing the occurrence of other phenomena. The infective bacteria may possess little virulence; partial adhesions may circumscribe the area of infection and so delay, if it does not prevent, the diffusion of the infection in the peritoneum; the patient may possess a sufficient degree of immunity to inhibit the activity, if not arrest, the growth of the infecting bacteria; and further, some people are but little sensitive to painful impressions.

However, sudden persistent pain in cases of typhoid fever is not always due to perforation as infection may occur without that accident. This was well illustrated in the case of a woman in the hospital lately; she was apparently suffering from typhoid infection. She had had a miscarriage two weeks before being received into the hospital; she was then suffering from a febrile condition which had existed probably from the time of the miscarriage, but apparently not due to it. The leucocytes were only 3,900, the spleen was large and the Widal reaction was reported well marked. At 9.30 on the evening of the 16th day after parturition and the second after admission to the Hospital there occurred a sudden pain, felt chiefly in the upper zone of the abdomen; it was persistent with fairly marked paroxysms. The abdomen was distended and somewhat tense, but an enema reduced it considerably. On seeing her an hour after the onset of the pain, the abdomen was rounded but quite soft in all parts; it was tender, especially in the upper zone; the spleen and liver were palpable; there was free sweating, especially of the face which was slightly cyanotic and its expression haggard. The pulse was very frequent and weak, temperature 104, respiration rapid and shallow. The leucocytes were then over 11,000 and there was some fluid in the peritoneal cavity. Sudden acute infection of the peritoneum had evidently occurred, and, as she apparently had typhoid fever, perforation was the most probable cause of it, although, of course infection may occur without perforation. Dr. Primrose saw her with me and we deemed immediate operation advisable, as probably giving her the only chance of recovery, although the outlook was anything but favourable. On opening the abdomen, some brownish serum was found in the cavity, the intestines in the upper

part were decidedly congested, but the ileum, appendix, colon and pelvic organs appeared healthy to the hurried examination that had to be made, as she was bearing the anæsthetic badly. She recovered well from the operation and was somewhat better next day, but died the day following. An autopsy was not permitted. The diagnosis is quite uncertain. There was no history of a previous attack of typhoid fever, so that the low leucocyte count and the Widal reaction were strongly suggestive although not conclusive evidence of typhoid infection. However, that does not discount the value of persistent pain as a sign of peritoneal irritation; it is important to note that in this case it was not attended by any tension of the abdominal muscles.

Even in some graver cases of perforation the symptoms are not very marked nor their development rapid, although the pain is always of sudden onset and persistent; other symptoms may appear gradually. In a lady, aged 65, seen lately, the symptoms were not severe. Moderate persistent pain began suddenly, was later followed by some distension of the abdomen and slight tension of the muscles, chiefly in the right lower quadrant. There was some tenderness in all parts of the abdomen, but somewhat more marked in the same region. The pulse and temperature had not been disturbed; the general appearance had not been altered much and there was no sweating of the face or elsewhere. An operation was done as soon as possible. The peritonitis was slight and confined to the cæcal region, yet the abdominal tenderness had been general. In the ileum was found a large slough extending through the peritoneal coat but as yet not separated. This accounted for the moderation of the symptoms and their gradual development. The sloughing area was turned inwards and the wall of the bowel stitched over it. The rest of the bowel seemed in good condition. She did very well for two days, when there was again a rather sudden accession of pain, vomiting, increased distension and prostration; this was considered to be probably due to fresh infection at the sutured surfaces. She died two days later. At the autopsy the sutured peritoneal surfaces were found united and in good condition; a short distance above this part were two fresh sloughs similar to the first one. Without these additional perforations she should have made a good recovery. It is but another illustration of one of the many pitfalls besetting the path of even the most promising cases of perforation.

I have purposely restricted my remarks to the more moderate cases in which the patient's perceptions are sufficiently clear to appreciate anything that causes discomfort and to complain of its occurrence—by far the largest class met with in this country. In them, pain is the



one symptom that may be said to be never absent; it may be only slight, but whether severe or slight it is, with very rare exceptions, persistent, and therefore not due to functional disturbance; other symptoms usually follow, but more gradually. Of these, abdominal tension localized or general, is the most common and important. It may, however, be so slight as only to be appreciated on careful examination.

Recently, increase in blood pressure has been found to occur in all cases of peritonitis. I have no doubt of the correctness of the observation, although I have not had the opportunity of testing it.

The value of leucocytosis in the diagnosis of perforation is very great. Leucocytosis begins promptly with the occurrence of perforation or of peritonitis from any cause; this was well shown by the case above referred to in which at the operation no perforation was found. In some cases, probably only in those in whom toxæmia is marked, the leucocytosis may disappear very early, so that its absence will not exclude the possibility of perforation.

In these milder cases, there is probably seldom any disturbance of the pulse, temperature or respiration, and with such moderation in the symptoms general depression would be gradual and collapse a late phenomenon if it occurred at all. Some of these milder cases are probably due to typhoid perforation of the appendix.

My own views as to our duty in these cases of perforation are perhaps best illustrated by the regulations governing the management of cases under my care at the Toronto General Hospital. Any case of typhoid fever in which pain occurs is to be reported at once to the house physician, who makes an immediate examination. A complete record should be made of the condition and all changes noted as they occur. If the attack of pain is unmistakably due to perforation, or even if there is good reason to fear that such is the case, immediate notice is to be sent to me and to my surgical colleague, the aim being to have an operation done immediately so as to prevent peritoneal infection. So important is immediate operation that it is better done at once even by a member of the house staff rather than wait unduly long for the services of one of the surgical staff.

In mild cases in which there is only a possibility of perforation having occurred, the patient is to be closely watched by the house physician. All food is to be stopped, no anodyne of any kind is to be given, but water is allowed to be taken freely. If the pain persists for an hour or so, then notification is to be sent out as in the undoubted cases.

There seems to be no doubt that it is imperative to act at once when symptoms of perforation occur in these milder cases of typhoid fever. I think this is imperative even in the cases occurring in out-of-the-way places where expert surgical aid cannot be promptly obtained. Three of Shattuck's (Trans. of the Association of Amer. Phys. Vol XV, page 111) cases were such as should have recovered had they been operated on early. He says they show that fatal peritoneal infection may occur within one or two hours after perforation. However, these must have been cases in which the infective organisms were extremely virulent. In other cases, on the other hand, recovery follows operation done even after general peritonitis has occurred; in these cases the infection must be less virulent and the immunity of the patient may be greater. Similar results follow non-typhoid perforation of other organs, notably the appendix. Every physician should be quite prepared to operate himself under such circumstances. The operation is not so difficult that a capable physician should not be able to deal with it practically as efficiently as the most expert surgeon. The chances for the patient operated on immediately by the physician are very much better than for those in whom operation is delayed for a few hours in order to procure the assistance of even the most capable surgeon. No doubt such prompt action in country places, where assistance is not available, entails grave responsibility on the physician in charge. In many cases the diagnosis cannot be made with absolute certainty, but, fortunately, even if there is no perforation, the operation in most cases does not seem to be followed by material injury to the patient's condition. Under the most favourable conditions only a moderate percentage of the cases recover and the physician who operates promptly may be blamed by the friends for the fatal result. Notwithstanding all this, in a case with symptoms strongly indicative of perforation, it is a risk and responsibility that he cannot well evade if he is to do his whole duty.

When there are decided symptoms present there can scarcely be a question that it is in the patient's interest to accept the danger of an unnecessary operation rather than the infinitely greater one of a perforation left untreated; the former is attended by more or less danger, while the latter is practically hopeless.

In the cases of profound toxæmia or marked typhoid state in which there has been great prostration with meteorism, delirium, and diarrhœa, perforation is often accompanied by early and marked collapse. In these cases it may be questionable whether operation should be done before the symptoms of shock have at least partially

passed off. In such cases either course is beset with difficulties; on the one hand, if we wait for shock to pass off there is danger of peritoneal infection spreading widely, and on the other hand, immediate operation may cause a fatal termination through shock. Each case will have to be determined on its own merits, but even here I think that, with rare exceptions, it is in the interest of the patient that immediate operation should be done, as the danger from peritoneal infection that follows so rapidly on perforation is probably a greater menace to life than even the shock. In these severe cases, even with immediate operation, the percentage of recoveries will always be very slow.

In order to carry out such prompt treatment in cases of perforation it is necessary not only that each case shall have the attention of a well-trained nurse but also that the services of the physician shall be at once available when required. It is difficult to make the public appreciate the necessity of such vigilant expert attention, especially as it will materially add to the expense in caring for each individual case.

As the accident occurs in only about two per cent of cases, the liability to it in any given case, especially if running a mild course, is easily overlooked even by the physician, so that the public can scarcely be blamed if they fail to realize the danger. It is, however, essential that the physician has a clear appreciation of all dangers that beset the path of even the mildest case of typhoid fever.

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## APPENDICITIS.

BY

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The introduction of this well-worn subject would seem to call for some apology, were it not for the necessity of keeping constantly before the profession the uncertainty of its behaviour. I may say, I think, with a certain amount of authority, that the laity is keenly alert to the fatality in neglected cases of appendicitis, and fully appreciates the few risks encountered in the cases operated upon early.

It may not be too much to say that the average public possesses a very intelligent comprehension of the subject, and it is not an uncommon experience to find people suggesting operation and insisting upon it before the regular medical attendant had even considered it. Time and again I have found patients presenting themselves at the hospital

for operation independent of any influence exercised by their physician. This does not come about from any lack of competency on the part of the medical adviser; for the average physician is notoriously competent, but is due to the fact that the public appreciates the uncertainty of the outcome. Every surgeon of experience finds himself interrogated by anxious friends as to whether such an operation, if done earlier, would have materially effected the result, and in justice to himself in the art which he practices, the question must be truthfully answered. The risks surrounding the performance of surgical work are sufficiently hazardous without courting complications, or adding difficulties to the situation, which would jeopardize a favourable outcome. I think I can say, without much fear of challenge, that the man who advocates an appendectomy as soon as a diagnosis can be made will never regret it. But the man who waits a few days, until the products of an already ruptured appendix have created havoc to the peritoneum and a general toxæmia established, will certainly have some occasion for concern. It is a common experience to obtain a history something like this. The patient was taken ill with severe pain in the right iliac fossa—followed by some general abdominal discomfort, readily controlled by local applications and small doses of some opiate; no thermal or circulatory disturbance and no abdominal distension. Things travelled along in an uneventful way until the second, third, and maybe even the fourth day, when the countenance changed, some tympany occurred, and the blood current became more rapid. The examination in such a case readily discloses a general peritonitis and if one can get the patient—even at this time—something may be done, but unfortunately the “ice bag” and the “opium suppository” are still fashionable and often persisted in. When the abdomen is opened, pus pours out through the incision,—the intestines are plastered over with a fibro-plastic exudate, which may be stripped off in ribbons a yard long.

Now, what may we expect in such a case? This is no false picture; the canvas is as true to every day experience as the flight of time. Those of us who are dealing largely in abdominal work are keenly aware of the large percentage of suppurating cases that come to us, and not only suppurating but death indelibly stamped on their brow. Many appendices perforate with the first manifestation of pain, and in those cases no one can be blamed, inasmuch as it is impossible to get in ahead of the first symptoms. But when the diagnosis is made—instead of waiting for something to turn up, as Dr. Maurice Richardson has so aptly put it—advise an operation, and with this advice the responsibility is immediately transferred to the patient and his family.

In a community like this—where there are so many hospitals—it would not be difficult to spend a few hours each month in the operating room. There you will have object lessons presented which will bear greater fruit than any sermon I can preach. Notwithstanding the fact that the literature on this subject has been most exhaustive, the experience of the average hospital surgeon will show that 40 per cent of cases presented for operations are suppurative, and twelve to fifteen per cent of the total present a general suppurative peritonitis. In this latter group there is no effort to wall off the product; the contents of the appendix are poured out into the “abdominal cavity,” and are free to travel where they please.

Now, we may ask ourselves—after a study of over a thousand appendectomies—what the conditions are which lead up to the perforation in the greatest number of cases. Perforation into the “peritoneal cavity” occurs most frequently in the primary attack, and is due in a striking number of cases to the presence of a faecal concretion which once established, increases in size until the lumen of the appendix is completely plugged, and the distal end becomes converted into a closed cavity. The rest of the story is a gangrenous and perforated appendix. In those cases I am positive that very often the first pain a patient experiences is when the rupture occurs.

The localized pain and tenderness, which is so characteristic, unmistakable and ever present, in non-perforative appendicitis, is usually very soon supplanted by tenderness and pain extending throughout the whole abdominal cavity. The patient complains of the left side just as much as the right and frequently greater pain just above the umbilicus than anywhere else. The insidiousness of the condition, from the time of perforation until well-marked general conditions show themselves, may be exceedingly misleading. In many cases a chart is not much use to us; in fact we might better throw it in the waste paper basket and trust to our physical signs, which will not deceive us very often if we only look well. Time and again I have found the patients with a happy expression; no pyrexia or circulatory disturbance; expressing themselves as being very comfortable, when the abdominal cavity contained quantities of pus.

The rupture of any of the abdominal viscera into the peritoneal cavity must always be looked upon as a grave condition. The higher up the rupture, if intestinal—the greater the risk, and the more fatal the issue, if unrelieved. The peritoneum, however, is more tolerant and resistant to pernicious influences than most of us suppose. An opening for drainage is all that it asks to work out its own salvation. The simple

opening of the abdominal cavity with drainage, in gunshot and other wounds of the intestines, has been followed by recovery many a time, in spite of very imperfect surgical intervention, exemplified by faecal fistulae afterward, which closed spontaneously.

Drainage of the "abdominal cavity" for suppurative peritonitis has always been, and promises to be, a perplexing problem. Methods which facilitate the readiest drainage naturally suggest themselves as being the most effective. For this reason, a drainage tube which will permit of the easy escape of all material as rapidly as it is formed would seem the most practical. A double drainage tube—one exceedingly short, simply entering the abdominal cavity; the other possessing considerable length, sufficient to reach to the pelvic floor, has in my experience performed the best work. The use of gauze for drainage purposes is almost useless inasmuch as it constitutes a plug. Its removal is exceedingly painful; forming strong attachments to the abdominal viscera, and occasionally producing serious injuries to coils of intestine in its removal—even being responsible for faecal fistulae, and predisposing to serious post-operative adhesions. In women a pelvic drain will accomplish much.

It is doubtful whether the different positions suggested possess special advantages over the horizontal. The elevation of the trunk in the Fowler position would rather favour an accumulation of pus in the pelvis, while the former position will allow the readiest escape of all material from the different parts of the abdominal cavity; and it is a well-known fact that any fluid remaining free in the peritoneal cavity will naturally gravitate to the pelvis even in the horizontal position. Furthermore, if one considers the comfort of the patient he will invariably select a horizontal position rather than the inclined plane.

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### CERVICAL RIBS CAUSING PRESSURE ON THE BRACHIAL PLEXUS.

BY

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Since reporting before the Medico-Chirurgical Society in November 1906, a small series of cases with radicular palsy of the brachial plexus caused by cervical ribs, the following case has come under observation:

Mrs. O. P., 28 years of age, was referred to me by Dr. McCrae in the Medical Outdoor Department of the Royal Victoria Hospital, January 3rd, 1907. She complained of wasting of the right hand with numbness and pains radiating down the inside of the forearm; and cough and pains in chest. For the past five years she suffered from crampæ

in the hands, not in one more than another, and sometimes these occurred in her feet as well.

Twenty-two months ago, when ill with pneumonia, she had some pain down the inside of the right arm, but this passed away on convalescence. Sixteen months ago, when the second to last child was born



she again complained of pain and numbness in the right hand and forearm. She describes these pains as like toothache radiating down the inside of the forearm from the elbow, affecting all the fingers. She found that this was relieved by elevating the arm above the head. The numbness was in the same region on the inside of the forearm. The cramps became more frequent and more severe, affecting the fingers

and thumb of the right hand, especially when she attempted to use her hand to grasp any object. The hand always felt colder but never became blue. It was more sensitive to knocks, etc., than the other hand. Wasting of the muscles was first noticed six months ago; and when her last child was born, four months ago, there was an exacerbation of all symptoms.

Patient has had a cough for about two years; pleurisy seven years ago; a small hæmoptysis last winter; pneumonia 22 months ago. Patient has been married four years, three children and two miscarriages. There is a family history of tuberculosis.

*On examination:* Cerebral functions normal. She has a bi-lateral apical lesion, tuberculous in nature, and the apex of the lower lobe is also affected on the right side. The cranial nerves are normal, though occasionally the right pupil has appeared a shade larger than the left; both react to light and accommodation.

*Muscular System:* There is wasting of the forearm muscles on the ulnar side of the flexor surface; two and a half inches below the internal condyle the circumference of the right arm is a quarter of an inch smaller than the left. There is also wasting of the small muscles of the thumb, the muscles of the hypothenar eminence, and the dorsal and palmar interossei. See figures. There is relative weakness in extension and flexion of the wrist and in ulnar flexion. In flexion of the fingers to make a fist there is weakness, especially marked in the index finger. Abduction and opposition of the thumb are practically nil; flexion of the thumb is weak. There is marked weakness in adduction and abduction of the various fingers, not so marked weakness in extending the distal phalanges on the semi-flexed proximal ones.

*Sensory system:* Subjective pain as already described. Objectively there is an area of analgesia and anæsthesia on the ulnar side of the forearm extending over the 5th and the ulnar half of the 4th finger. See figures. The reflexes are all normal.

There is no spinal curvature. No inequality of the pulse on deep inspiration. To faradism none of the small muscles of the thumb react; reaction is absent also in the interossei and in the flexor profundus digitorum and diminished in the flexor carpi ulnaris and the abductor minimi digiti. The other muscles react normally.

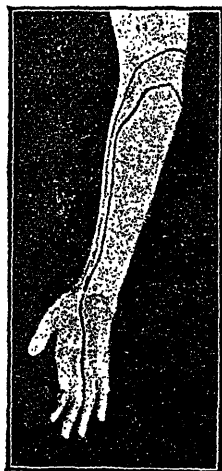
The skiagraph shows bilateral cervical ribs. See illustration. Of course the objection is inevitable that here pleuritic adhesions may have involved the lower roots of the brachial plexus, but I think this may be disregarded; first, on account of the great similarity in the history and the sensory and motor paralysis between this case and the cases I have



already reported, and second, if there were adhesions with the apical pleura one could not imagine elevation of the arm relieving pain. One would think it would rather increase it by traction.



In this case, as in the others, the paralysis, both motor and sensory, is confined to the distribution of the 8th cervical and 1st dorsal roots.



In my former report other etiological factors have been discussed. In this case I would like to add that loss of weight seems to have been a factor to a large extent.

## PARTIAL GASTRECTOMY FOR PYLORIC CANCER.

BY

A. E. GARROW, M.D. AND CHAS. A. PETERS, M.D.

J. R., 41 years old, was sent to the Royal Victoria Hospital on December the 15th, 1903, by Dr. Haldimand, complaining of pain in the upper part of the abdomen, vomiting and very obstinate constipation.

Until one year ago the patient enjoyed good health, then without any apparent cause, he was seized with severe pain in the epigastric region, accompanied by nausea, vomiting, some fever and followed by obstinate constipation but without jaundice.

During the year he had several severe, besides some milder attacks of this character, the last, four days before entering the hospital. With the exception of an attack of typhoid fever, when he was 28 years old, his previous history was of no moment.

Examination on entrance revealed a very tender mass in the upper right quadrant of the abdomen, suggesting a distended gall-bladder, but an exploratory incision on December the 18th, 1903, shewed that the swelling was due to a collection of semi-solid and greenish-yellow fluid lying partly in front of the peritoneum, extending upwards in front of the ribs, and intraperitoneally occupying a part of the sub-hepatic space, to the right of the gall-bladder, which latter was moderately contracted but contained no gall-stones.

There were numerous veil-like adhesions between the liver and omentum. The cavity was packed and partially sutured. The patient made an uneventful recovery and returned to his employment, enjoying excellent health for a period of fifteen months. The fluid removed from the abscess-like cavity was examined, and reported to be sterile.

In April, 1906, the patient consulted Dr. Peters for attacks of severe pain coming on two hours after eating, more or less persistent epigastric distress, eructations of gas and obstinate constipation, from which he had suffered for about 6 weeks. An examination of the stomach contents, removed one hour after an Ewald's test breakfast, was made.

The fluid measured 80 c.c., was hyper-acid but contained no organic acids. The inflated stomach was neither displaced nor enlarged, and an X-Ray plate shewed no abnormal condition.

Systematic examination of the stools was also undertaken and this led to the discovery of pieces of gauze which were passed on several occasions during June. This gauze did not resemble in texture that used for surgical dressings in the Royal Victoria Hospital. The subsequent laparotomy confirmed the opinion that the gauze had gained entrance to the alimentary tract by the ordinary aperture.

It was believed that the motor function of the stomach was interfered with, by adhesions, known to be present a year or more before. Medical treatment and careful dieting after a fair trial had failed to give relief, so exploratory incision was advised and readily assented to by the patient.

Laparotomy on August 28th, 1906, shewed numerous recent and old adhesions at and about the pylorus.

There was also a firm, but not hard, nodule over which the peritoneum glided, situated about  $1\frac{1}{2}$  inches from the pyloric ring. The stomach was not apparently enlarged nor displaced. The pyloric ring felt firm and was firmly fixed to the back of the abdominal cavity.

Posterior gastro-jejunosomy by the "no loop" method was performed, and the small nodule removed for microscopical examination. Shortly after the patient returned to the ward, he had a profuse hæmatemesis due in all probability to an uncontrolled vessel in the section made in removing the small tumour. Had a continuous through and through (hæmostatic) suture instead of three interrupted sutures been employed in closing the wound, this accident would in all probability not have occurred. Bleeding was arrested by giving the patient adrenalin chloride in drachm doses in small quantities of very hot water. Convalescence was much delayed owing to the profound anæmia. Within a week after the operation the patient was enjoying a liberal diet and had no further epigastric distress, microscopical examination shewed the tumour to be carcinoma as well as one small but swollen gland removed from the gastro-hepatic omentum.

The patient was informed of the nature of the growth and readily assented to the removal of the diseased part. This, however, was further delayed owing to the development of a parietal abscess in the scar of the first operation wound, which left a small but deep sinus, so that it was not until November the 8th, 1906, that partial gastrectomy was undertaken. The stomach was freed from the gastro-hepatic omentum as far as the gastric artery, which latter was ligated. The section included about one-half of the greater curvature. The section through the duodenum passed one inch wide of the diseased tissue. Both openings were closed by continuous through and through silk sutures and two rows of Lembert suturing and the carcinomatous pylorus was removed.

To prevent any alteration in the anastomosis between the stomach and the jejunum a few "staying" sutures were inserted into the free border of the gastro-hepatic omentum and the sutured end of the stomach, thus preventing any sagging of the latter. Owing to the

presence of the infected sinus a drainage tube was carried to the bottom of the cavity.

The convalescence was very satisfactory, and there was no vomiting. At the present writing the patient has returned to work as foreman in a large factory. He has gained seventeen pounds in weight since the last operation, has had no pain and the bowels are regular. If he eats an unusually "heavy" meal he complains of a sense of fullness, otherwise there is nothing to remind him that he has lost the "grinding" part of his stomach.

## KOCH-WEEKS CONJUNCTIVITIS.

BY

HANFORD MCKEE, B.A., M.D.

Assistant Surgeon to the Eye and Ear Department, Montreal General Hospital.

For the first description of Koch-Weeks' Conjunctivitis, and for the knowledge that this form had a definite etiological cause we are indebted to Weeks. In 1887 he described a form of acute contagious conjunctivitis which appeared epidemically, especially in the Spring and Fall. In the conjunctival secretion he found constantly numerous very fine short bacilli, lying free or in the pus cells. A growth on media of these fine bacilli was very difficult to obtain. At first mixed cultures were obtained. The bacillus xerosis was always present. With this mixed growth Weeks was able to set up a typical conjunctivitis and as the bacillus xerosis caused no re-action in the conjunctival sac he concluded that the small bacillus was the etiological factor. Later Weeks was able to grow the small bacillus in pure culture, and proved it to be the cause of this form of conjunctivitis.

As Koch, working in Egypt had described this same small bacillus, in 1883, the form of conjunctivitis and the bacillus received the name Koch-Weeks.

Since 1887 the Koch-Weeks bacillus has received much attention. Morax made a very complete study of the cultural characteristics of the bacillus and published his work in 1894. Since then numerous places have furnished large epidemics of contagious conjunctivitis due to the Koch-Weeks bacillus, until it is now recognized as one of the commonest and most contagious forms of conjunctivitis.

It is an interesting fact that in different localities, different forms of conjunctivitis seem to predominate. In New York, Koch-Weeks conjunctivitis is very frequently seen. In Nebraska (Gifford) pneumococcus conjunctivitis is prevalent, while in Montreal the Morax-Axenfeld is by far the most common form. A similar interesting variance has been

noted in Europe. While Morax-Axenfeld conjunctivitis is the most common form here, Koch-Weeks and pneumococcus conjunctivitis are very frequently seen. They seem to occur epidemically, while the Morax-Axenfeld form we have with us always.

Koch-Weeks is especially prone to occur in epidemics and is the favorite form for schools and institutions where a large number of persons are brought together. I saw a boy a short time ago, who was home from one of the large boarding schools. "All the boys had sore eyes" and I expect of the same variety as he—the Koch-Weeks.

The clinical picture of Koch-Weeks conjunctivitis is a varied one. After an incubation period of 24 to 48 hours the lids and conjunctiva are red and swollen with a mucus or muco-purulent discharge. The bulbar conjunctiva is especially congested and swollen and may show about the lumbus, tiny phlyctenular-like masses.

The clinical picture may be much more severe, as the following case will show. One evening last summer I was called to see a young woman of 18 years who had been suffering for three to four days with "inflamed eyes." The history was that the children in the family had all had "sore eyes" but had recovered with frequent washings with boracic solution. This case was much more severe than any of the others had been and her condition was as follows: Both eyes were involved, swelling of the lids was marked, from between the lids the discharge of pus seemed to "well up." The bulbar conjunctiva was intensely swollen. The corneae were intact. From the conjunctival discharge I made a smear and stained it by Gram's method. Examination of the slide showed innumerable short thin bacilli in groups. They were Gram-negative bacilli (the Koch-Weeks) and were readily distinguished from the bacillus of influenza.

The patient was already in a darkened room and in bed. Irrigation of the conjunctival sac with warm boracic solution every half hour application of cold compresses of boracic solution constantly, also to instill drops of a ten per-cent solution of argyrol three times daily made up the treatment.

The patient made rapid progress, the following day the discharge was less, and the swelling of the lids had markedly decreased. Each day saw her condition improved and on the eighth day following she was well.

This case, showing how severe Koch-Weeks conjunctivitis may be, offers many points of interest.

The presence of an acute contagious disease in a family, increasing in virulence as it went from one person to another is not insignificant. The

clinical picture here shows how severe Koch-Weeks conjunctivitis may be. The course and treatment are also of interest.

To the above treatment Koch-Weeks conjunctivitis re-acts well. I have seen this form treated many times with solution of silver nitrate and have seen it run under such treatment a very protracted course. Argyrol seems especially efficacious here and in no way causes the pain which even weak solutions of silver nitrate seem to do here. The Koch-Weeks bacilli are not easy to find. Considerable practice is needed to find them, although one's slide may be full of them.

When a smear has been stained by Gram's method, short fine bacilli lying in groups will be found scattered everywhere over the slide. The bacilli are negative to Gram's stain so will take the red colour of the counter stain safranin. This is a satisfactory method for many reasons, but when we have learned to recognize the organism, staining with a weak solution of Carbol Fuchsin for ten minutes is a very excellent method (Axenfeld). This seems to bring out the outline of the bacilli better.

The cultivation of the Koch-Weeks bacillus is not easy. Upon ordinary media it does not grow.

One of the best media is agar mixed with Asditic or Hydrocele fluid or blood agar.

Upon any of this special media the colonies of the Koch-Weeks bacillus appear after 24-48 hours as moist transparent shiny points. From the culture the bacilli look just as they do from the prepared slide. The organisms causing conjunctivitis which is liable to resemble Koch-Weeks conjunctivitis are the pneumococcus, influenza bacillus, and the Morax-Axenfeld diplobacillus. Of these the influenza bacillus is the only one which cannot be readily distinguished from your smear preparation, but the influenza bacillus is neither so long nor so thin as the Koch-Weeks bacillus and differs entirely from it upon media.

The cultural characteristics of the Koch-Weeks bacillus may not be of such great importance to the clinician but to understand that all forms of conjunctivitis vary widely in their clinical picture is of importance. Koch-Weeks conjunctivitis varies from the mildest form, reddening of the bulbar conjunctiva to a picture resembling a gonorrhoeal ophthalmia.

But on the other hand if one is able to prepare a slide from the conjunctival discharge and to examine it, and to recognize what one finds there, it matters not to what extremes your clinical pictures go. It matters not how closely pneumococcus, influenza bacillus, and Koch-Weeks conjunctivitis may resemble one another. Find the organism

causing your conjunctivitis and you know what you are dealing with. Having found in the conjunctival discharge the Koch-Weeks bacillus we know we have to deal with a very important form of conjunctivitis. Important because it is very often seen in private practice, very often among children, and because it is one of the most contagious diseases we have to deal with.

It varies widely in its appearance, course and duration.

Koch-Weeks conjunctivitis re-acts well to proper treatment but may run a severe course, complicated with ulceration of the cornea, or a mild protracted course.

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### CLINICAL NOTES FROM THE ALEXANDRA HOSPITAL.

BY

J. C. FYSHE, M.D. and A. W. HUNTER, M.D.

The following cases, occurring in the wards of this hospital during the last nine months, appeared to us to be of sufficient general interest to warrant our venturing to report them.

A CASE OF "RETAINED TUBE."—H. J., male, aet. 2 years, 7th September, 1906, admitted on the fourth day of laryngeal diphtheria. He was intubed and injected with 15,000 units antitoxine, to which he promptly reacted. The tube was extracted on the morning of 9th October, 1906. Early on the morning of September 12th, he gave undoubted evidence of having scarlatina and was transferred to the scarlatina pavilion. By noon of this day, the laryngeal stenosis which had not been in evidence at all since the extraction of the tube, a period of three days, reappeared and soon became so intense as to necessitate reintubation. The patient was extubed on the 14th, but in about five minutes, after some slight irritation, the inspiratory stridor reappeared accompanied by nasal, cervical and epigastric evidence of stenosis. The picture was one of spastic dyspnoea, rather than that caused by an actual blocking of the passages by some foreign body. The patient became pallid and cyanosed but not in the same way nor to the same extent seen in ordinary membranous laryngitis. Reintroduction of the tube completely relieved the condition. On the 25th and on the 27th, the tube was removed, reintubation being necessary both times in a few moments. Meanwhile the temperature was remaining in the vicinity of 102 in the evening, the child having first a right and then a left sided otitis media, which ran its course without doing any further damage. On October 2nd, the tube was again extracted only to be reinserted, this time, however, after twenty-five minutes. Deliberate irritation of the nose apparent-

ly induced the spasm which made it necessary to reintube. Reintroduction was delayed as long as might be in the hope that the condition would pass away of itself, but to no purpose. A tube a size larger than the one the child had hitherto been wearing was put into the larynx, with, as usual, complete relief of the symptoms of distress. At two in the morning of October 3rd, the child was found cyanotic, anæsthetic, and almost pulseless. Respiration had ceased. No evidence of the tube having been coughed up could be had, nor could it be felt in the larynx. A tracheotomy was done on the bed and after a few moments of artificial respiration, the child began to breathe. When all was going well, a careful search for the tube revealed it under the crib. The tracheotomy tube was removed next day, being replaced by a two year intubation tube which was allowed to remain in situ until 9th October, 1906, when it was extracted, only to be reintroduced at the end of three-quarters of an hour under circumstances in all respects similar to those already enumerated. On the following day, it was decided to abandon intubation. A tracheotomy tube was therefore introduced through the easily separated edges of the wound. It was removed in two days time and the neck bandaged as tightly as possible. The breathing remained undisturbed and the wound healed rapidly with exception of a small sinus, which persisted for three weeks. On January 15th the voice was normal and the general condition of the child was excellent.

UNEXPLAINED COMPLICATION IN SCARLATINA.—W. C., male, act. 7 years, 8th day of a very mild attack of scarlatina immediately following an absolutely uncomplicated case of pharyngeal diphtheria.

Patient became restless about midnight of Nov. 13th and remained so until the next morning, when he suddenly complained of pain in the left shoulder. This pain persisted until mid-day when the patient was systematically examined. At that time there was no objective evidence of any trouble in the left shoulder, no areas of tenderness were present, nor was there any limitation of movement. In the afternoon the pain disappeared. Late on the next day, the patient again made sudden complaint of pain, this time in the hypogastrium and about the genitalia, which he was constantly seizing and irritating. Examination of the urethra and the urine revealed no cause for this pain. Urine was normally passed. During the night of Nov. 14th, patient was restless, at times almost hysterical, crying out loudly and throwing himself and his bedclothes about in an aimless sort of manner.

Next morning, Nov. 15th, the patient was abnormally quiet, lay passively in bed and showed not the slightest inclination to move about nor to speak. At noon he was still in this condition, his head and eyes were



steadily kept to the left, the latter having a vacant, senseless stare. Although there was no actual disturbance of his speech, he would take a great deal of time to answer questions put to him and it was evident that it gave him a good deal of trouble to articulate at all. Examination of the heart showed nothing beyond a slight accentuation of the pulmonic second sound. Lungs and abdomen negative. As the condition of the boy appeared most peculiar, he was watched for some little time: in about half an hour the fingers of the left hand began to twitch, the little and the ring fingers first. This twitching increased rapidly in severity and extent and soon involved the whole arm in a clonic convulsion. The mouth and lids of both eyes were at the same time similarly affected, while the head and eyes were constantly turned to the left, until an increase in the severity of the convulsion caused the head to be rather violently jerked from side to side. It always returned to the left, however. The respirations were irregularly shallow, jerky, and at times interrupted by an exceedingly deep inspiration. *Alæ nasi* very active. The whole duration of the convulsion was about three minutes. It eventually involved the left leg, in fact all the muscles on the left side of the body, in a clonic convulsion. The right side of the body appeared to be in a state of tetany all the while. After the storm had passed off, there was complete muscular flaccidity. But the interval was not long, after two or three minutes he would pass into another seizure of the same kind, and after that into another. They steadily increased in severity and eventually involved the whole body in extremely severe clonic spasms. During the last two convulsions the whole body was thrown or turned to the left, while the right leg and arm were found to be cataleptic. The reflexes during the intervals were all absent, excepting McCarthy's and to a slight extent the cremasteric reflex. Beyond involuntary passage of urine in the last convulsion, there was no loss of control of the sphincters. Between attacks, there was more or less total analgesia, but on severe manipulation, faint response to pain could be had.

Nine distinct convulsions were noted and they all followed very accurately the above description. They gradually increased in severity, especially so the last one, which, after a duration of twenty minutes was controlled by chloroform. There was no return of the attacks after the patient came out of the anæsthetic, which he did quietly and apparently much refreshed.

Dr. Russell who made an examination at 3.30 p.m., found the following condition: left sided hemiplegia, sensation normal excepting for

analgesia of the left hand, forearm and arm up to a line drawn around the shoulder at the tip of the acromion process. Fundi normal, left sided hemianopia. Superficial reflexes, knee jerks and Babinski absent. General muscular weakness.

Patient was given two grains of veronal, icebags were applied to the head and the heart and whiskey given every two hours.

The knee jerks and the Babinski remained absent until Nov. 20th, and for that time there was general muscular weakness and tenderness. The analgesia over the left arm disappeared the next day, and the mental condition then also appeared to be normal: speech was unimpaired and the patient recognized everybody and everything about him.

Further complaints of pain, of sudden onset, in the right thigh and the epigastrium were made on the 17th and 19th but in neither case was it of long duration.

On the 15th and 16th there were passed with small formed stools, small clots of blood and mucus, on the 18th a small quantity of bright red clotted blood, and on the 19th and 20th again faeces stained with blood incorporated in them.

With the first convulsion the temperature went up to 102, the pulse to 140 and 144. The urine was normal throughout.

Patient was discharged on Dec. 24th, well. At that time the heart sounds were very loud, both second sounds at the base being accentuated, there was no increase of dullness and no adventitious sounds could be heard. He has been recently seen and is in perfect health. A tentative diagnosis of multiple emboli was made, based on (1) the sudden and transient pains in the various parts of the body. (2) the sudden onset of the Jacksonian epilepsy, (3) the transient hemiplegia, hemianalgesia and homonymous lateral hemianopsia, all left sided, (4) the bloody stools associated with the abdominal pain. No source of emboli could be found other than the throat, which in this case was so very slightly involved, as to throw much doubt on its etiological significance.

**SKIN HAEMORRHAGES IN DIPHTHERIA.**—1. On July 19th, H. L. male aet. 6 years, was admitted on the 4th or 5th day of exceedingly severe pharyngeal diphtheria. The uvula, tonsils, anterior pillars, post. half of the soft palate and the left side of the buccal cavity were covered with thick, dirty gray, very offensive membrane. The patient was extremely toxic, large doses of antitoxine produced not the slightest re-action; death taking place on July 25th. On July 21st, there appeared on the dorsum of the foot, on the legs, and on the ears, small

petechial hæmorrhagic areas, none much larger than a split pea. They did not increase in size, they were hard to obliterate by pressure and they did not fade to any extent at post-mortem. A culture made from one of them with all the usual precautions showed nothing.

2. On July 20th, S. H., male aet. 6 years, was admitted on the 7th or 8th day of the illness: nasal, pharyngeal and laryngeal diphtheria, a typical neglected case. He finally recovered after two unsuccessful intubations, a tracheotomy and the administration of 25,000 units of antitoxine.

In this case also, small cutaneous hæmorrhages were noticed, on the face, the ears and the abdomen, only differing from those in the preceding case in their smaller size and greater number.

With these two exceptions, among over 150 cases, many of which have been quite as serious as the two described, no hæmorrhages of this nature have been observed.

In the B. M. J., 22nd December, 1906, McCrombie reports the occurrence of such hæmorrhages into the skin as being noted in 200 out of 6,755 cases, and that in cases of just the type described above: severe faucial diphtheria in children under the age of twelve. In most of the cases there was a fatal termination.

RELAPSE IN SCARLATINA.—W. J., male, aet. 5 years, admitted on the 4th day of a well marked case of scarlet fever. T 101.2/5, P 124, R 24. The history of the onset was typical, the rash characteristic, as was the tongue, the appearance of the throat, the tonsils and the roof of the mouth. The glandular enlargement was general, in fact there was nothing about the case to make the diagnosis at all doubtful. It ran a perfectly normal course, desquamation being profuse. Ears unaffected.

Twenty-three days after admission, that is on the twenty-seventh day of the illness, the temperature rose to 104° in the course of twenty-four hours, there was headache, nausea and emesis, most marked general depression accompanied by re-enlargement and tenderness of all the superficial glands, soreness of the throat and the appearance of a rash of a pale red hue, confluent, deeper over the folds of the skin. It appeared on the neck and extended on to the face, head and soft palate. This rash faded gradually over about four days and the temperature reached normal again in about a week and a half. There was a second well-marked desquamation, which in places could be seen going on along with the one resulting from the first eruption.

An antitoxine eruption is excluded by the character of the accompanying symptoms, drugs—the boy was not receiving, there was no

arthralgia and all the viscera and their functions appeared to be as near normal as might be.

It would seem that a relapse is the correct interpretation of the second set of symptoms.

HERPES ZOSTER AND FACIAL PALSY.—J. H. J., male, aet 38, was admitted to Ward I, 15th January, 1907, as a case of erysipelas. He was of necessity admitted to the ward before a systematic examination could be made. When this was done, the erythematous rash and the vesicles which were on the left side of the neck and shoulder, were found to terminate abruptly at the midline in front and behind, to cover an area corresponding accurately to the distribution of the 3rd and 4th cervical nerves, in short to present a very beautiful picture of herpes-zoster cervico-occipitalis. Three small vesiculo-erythematous areas struggled down over the clavicle as far as the second rib, and a patch capped the prominence of the deltoid. Constitutional disturbance was absent subjectively.

On January 18th a slight left-sided facial paralysis was noted. This rapidly increased in intensity until on Jan. 20th the appearance of the left side of the face was as typical of the affection as any text-book plate. The naso-labial fold was obliterated, there was ptosis of the left lower lid, the whole side of the face was drawn to the right, there was inability to close the left eye or to whistle. Sensation was equal on both sides, but hearing was much less acute on the left than on the right. (Patient states this to be the case when he is in perfect health.) Muscular power and reflexes normal. The paralysis increased in severity until the end of January, and then commenced to recede quickly. It was quite absent on Feb. 10th, and on the 13th, the patient was discharged well, except for sharp shooting pains over left neck and shoulder.

As a child he had measles. Gonorrhœa fifteen years ago. There is no history of lues. He is an old soldier. His occupation is that of shipping clerk in a wholesale liquor establishment.

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President Roosevelt has applied the physiological test to the water of Panama: "I drank it, and it was excellent." The *Medical Record* of December, 22nd, thinks that, in view of this evidence, no reference should be made to the *Bacillus Coli*.

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The new nurses home in connexion with the Strathcona Hospital at Edmonton has been erected and is now ready for occupancy.

THE

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## ON THE SERVICEABLENESS OF POOR RELATIONS.

The extraordinary outburst of studies in connexion with the subject of immunity that has characterised the last decade has brought to notice the existence or possible development in the blood serum of animals of substances of a very remarkable character—substances strongly specific in their reactions, but at the same time not so strongly specific that they do not exhibit group relationships. Some of these, like the precipitins may well appear to the ordinary practitioner to be outside the sphere of his interests. It may seem to him of little practical bearing that if the goat or the guinea-pig be inoculated with milk or a solution of wheat proteids, after a few days the blood serum of the treated animal, added to the milk or other proteid solution will cause a precipitate in the proteid solution employed for inoculation, that it may cause a slighter precipitate in solutions of closely allied proteids and none whatever in proteids of different constitution. But even here

a use has already been found for this out-of-the-way phenomenon. The blood serum of an animal of the laboratory that has been inoculated with human blood will cause a precipitate in solutions of human blood whereas it will be without effect on solutions containing ox or sheep blood—and the reaction can thus be employed medico-legally to determine the nature of suspicious blood stains—and has been.

The same is true with regard to hæmolysins. If the blood corpuscles of one species be introduced in small amounts into the circulation of a member of another (preferably widely separated species) the blood serum of the second animal gains the power of hæmolysing or “laking” the erythrocytes of the former. Here, as Nuttall and others have pointed out, we find the existence of phenomena which can only be explained on the theory of group relationship. If a rabbit be inoculated with the blood corpuscles of a goose its serum will acquire the power of destroying the red corpuscles of the goose; it will manifest a slight but definite power of “laking” the corpuscles of ducks and other birds, the power being more marked the more nearly are the species allied in general characteristics, but it will have no effect upon the erythrocytes of fishes or quadrupeds. This is true of hæmolysis throughout the animal kingdom and so, to come to the top of the tree we find here a further confirmation of the conclusions reached by the zoologists: we find that the blood serum of an animal immunised against human erythrocytes will actively lake the red corpuscles of man, will show some reaction with the corpuscles of monkeys, the reaction being most marked in the case of the anthropoid apes, such as the ourang and chimpanzee, least marked, if not absent, with small monkeys and lemurs, and wholly lacking with the blood of carnivorous, graminivorous and other quadrupeds. So true in its working is the reaction that we can employ it to determine animal relationship. Man and monkey are thus found as nearly related as are the various members of the salmonidæ.

This is settled. We have here the final link in the chain of proof of the common descent of man and monkey. And bacteriologists have proceeded to utilize our humble relations in other ways, reasoning along similar lines, namely, that related animals are more likely to suffer from a given disease or to be susceptible to the same germ than are animals widely separated in the scale of living beings. If we mistake not, so long ago as 1880 Van Dyke Carter in India, was the first to show that the spirochæte of relapsing fever, while it could not be transmitted to the ordinary animals of the laboratory, would grow in the blood of apes setting up in them a characteristic acute fever. Copeman and others have shown that monkeys are susceptible to small-pox and suffer from

disease just as do human beings, though with a tendency for the disease to become less virulent and die out by successive passage from monkey to monkey—just as the relapsing fever in apes may lack the proper succession of relapses seen in man.

Everyone now-a-days is familiar with the work of Metchnikoff and Roux upon syphilis, a disease which cannot be imparted to the lower warm-blooded animals, and knows their demonstration that anthropoid apes exhibit a definite chancre with definite secundines, whereas the lower present but an abortive localised disturbance. Everyone knows also that the spirochæta pallida has been found in these syphilitic lesions of anthropoid apes just as it is found in the primary and secondary sores in man.

If Brazilian papers, recently to hand, are to be trusted—and the account they give is very clear—a McGill graduate, Dr. Wolferstan Thomas, has utilised the chimpanzee to carry us one step further in our knowledge of another disease—one which as regards its causation has so far baffled us, namely Yellow Fever. The late Walter Reed and the American Commission proved the correctness of Finlay's supposition that this disease is conveyed from individual to individual through the agency of mosquitoes. Their discovery alone has not merely indicated how the disease may be arrested, but had led to its arrest in Havana, and Central America generally. No one, however, of the many workers of the many nationalities, has so far been able to isolate the organism giving rise to the disease, nor until this observation of Thomas' has anyone been able to convey the disease to other animals save man. In the Chimpanzee, according to the reports reaching us, (which are continued and amplified by a note in the British Medical Journal of Jan. 19.) Dr. Thomas has set up through the bites of infected mosquitoes, a disease having all the symptoms of Yellow Fever in man, from which the animal gradually recovered.

There is in this study of tropical diseases much of the fascination, much of the same call for inventiveness, and much if not more of the danger that attends the search for the North Pole. It cannot be said that now the actual attainment of the Pole will teach us more than we already know: with these investigations into the cause of disease and the means of arresting the same the case is very different: what is accomplished is for the betterment of humanity. If therefore each step nearer the North Pole is reached with acclaim, still more hearty should be the felicitations over each step forward in our understanding of such fell diseases as yellow fever. The difficulties and dangers in the research are great: Lazear died through his devotion to the work in Cuba,

Walter Myers in Brazil, Thomas himself was stricken with the disease and recovered, while his companion Breinl was so seriously affected that he had to return to Liverpool for a long convalescence, leaving Thomas to continue the researches single handed for the better part of the last two years. To import chimpanzees to Brazil may appear like carrying coals to Newcastle, but everything points to the fact that the chimpanzee is a nearer relation to man than are the Brazilian monkeys and the end attained would seem to justify the procedure.

### THE NEED OF CONTROL.

It is a far cry from the reticent Scot who, at the funeral of one dearest to him, discusses the weather, to the garrulous woman who describes her ovarian derangements to six friends at afternoon tea. These habits, for they are the fixed results of practice, are as widely separated as they appear to be: the former is the outcome of a habit of self-control, and the latter the result of a long-continued indulgence in the lack of it. Perhaps the prevalence of nervous break-down in this continent is due to something closely allied to this lack of self-control. It will scarcely be denied that there is too great lack of control in the upbringing of many children of the present day, for we make a by-word of the training of an American child. If in early years there is little authority exercised by others upon a child, it is not likely that in later years the man will feel it very necessary to exert a similar control over himself. It is not to be asserted that this control is lacking in things moral, or even in things physical, but rather in things mental, in the habit of mind. We are all firmly convinced that mind has a strong influence over matter, and the man who is determined to get well is likely to make a far better fight for his life than is the man who cares not whether he lives or dies. With reference to nervous break-down there are thousands of men in America who at this minute are expectant of it; not infrequently, we get what we expect, and this, like some other things, comes to him who waits patiently enough for it. Worse than the mere waiting for it, is the complacency that many an one shows when it arrives, and the evident pride with which it is at times mentioned after it has departed. It was a sorry thing that an insane parent was thought a source of shame to a son, and it was right that insanity should come to be regarded as disease no more to be reprehended than typhoid fever. Let us not make neurasthenia a disgrace, but let us not consider it a virtue. There is no special reason why one should be readier to discuss in a special way the symptoms of neurasthenia than



those of dysentery, and neurasthenia is a disease that will lessen as less attention is paid to it; no wide-awake physician will really pay it the less heed, and no one need think this to be a step in favour of the rigorous treatment of neurasthenia, but when it is less widely discussed by the laity, it will be treated in a more seemly manner.

Cases of nervous breakdown fall into two classes: first, cases in which the machine, temporarily worn out, will not generate enough energy, and second, cases in which there is enough energy but it is misdirected. We have all seen a strong man spending energy sufficient to run a business, upon the fancy that the skin over his right scapula is deficient in perspiring power, or upon some equally odd idea.

Without enlarging upon the modes of treating this disease, and at the same time, without in any degree minimising the importance of the disease, or its need for treatment, it may be said that the cure lies in discipline, in control. Doubtless it is now too late to effect the cure for this generation, but the next may profit by our efforts. Discipline, to be effective must begin with self-discipline; no man is fit to command until he is fit to obey. Our servants in America are not well disciplined, as a rule, because we have lost our control of them. Our children are apt to be forward, because we have too often failed to exercise a control over them. Our bodies and our minds run riot partly because we have never learnt to control them: trusts and labour unions run riot because we are not strong enough to control them: yellow journalism is a bane because public taste neither controls it nor seems to express any wish to control it. And the story goes on endlessly—everywhere lack of control.

Is there any cure? Not in the aggregate, perhaps, but in the individual a cure is possible. Let me begin with my own tongue and my temper, and when I have so far succeeded, I shall have my own mind so far under control that I shall no longer lose my temper over the fact that my neighbour is neurasthenic; and, best of all, it may be that it will prevent myself from becoming so.

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#### VACCINATION BY OFFICIAL VACCINATORS.

Dr. George Dock in a paper upon vaccination in a recent number of the *American Journal of the Medical Sciences* deals with means that may be taken to make vaccination universal. He points out how badly the United States fares in its small-pox figures by comparison with Germany, and points out that this depends not upon the lack of en-

deavour by statute, for the statutes of most of the States are stringent, but upon the failure of the statute to enforce itself, and the failure of the individual to submit himself to the statute. Some of the statutes are so stringent that they cannot be obeyed. The real remedy lies in the altered view of the individual and in making vaccination popular by doing it so well that it will speak in its own defence. To this end, it should be put in the hands of men whose technique will be perfect and whose observation of the case will not end at the time of vaccination. There is no purpose here, to enter into a discussion of the merits of vaccination, because these have been long proven to the satisfaction of every judicial mind: but it must be admitted that vaccination is often carelessly done, at times even in a dirty manner, and nearly always without a proper repetition of an unsuccessful attempt. These are arguments against the manner in which vaccination is practised, and must be considered. No physician would willingly undergo a vaccination that he knew was going to be performed in a slovenly, septic, careless manner, and it is our duty to see that no patient is subjected to such a vaccination. It is even now within our power to establish at different hospitals, vaccination clinics, where the number of patients would ensure the perfection of the procedure, and the continuous supply of good vaccine from a national source. This would reduce the annoying "accidents" of vaccination to a minimum, and would compel a more healthy attitude of the public mind to this necessary procedure. So large a result can come about only by the exercise of individual care, and by the lapse of some time, but each physician can do his share by conscientious attention thereto, and this, coupled with some such centralization as we have mentioned, cannot ultimately fail to produce the desired result.

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### THE CARE OF THE NURSE.

On Tuesday, Feb. 5th, Mr. Goldwin Smith, opened the new home for nurses of the Victoria Hospital for Sick Children, Toronto. This was built and furnished by Mr. J. Ross Robertson at a cost of \$130,000, and represents a magnificent addition to that fine hospital, which owes its beauty and efficiency in so great a degree to Mr. Robertson. We congratulate every one concerned, and most of all, the generous donor. We offer no apology for reproducing the sense of his manly and modest words:—

"For years the need of a nurses' home had been unmistakably shown, for these good women had been lodged in the upper rooms of the

hospital and in the tenement houses adjacent. There were no funds, and the people who had been sending money year by year for the maintenance of the hospital could hardly be asked for more money to build such a nurses' home.

"So turning the matter over in my own mind," said Mr. Robertson, "I decided that the best way out of the difficulty was to offer this building as a free gift, as a memorial of her who was with me in the beginning of my hospital work nearly thirty years ago."

"If there was a long-felt want, he continued, it has been a residence of this kind. He had heard it suggested that the housing of nurses had been overdone, and that their surroundings were not in keeping with the simple life. Still the demands made upon these women were inflexible, and nothing could be done to shorten their daily round or lessen their duty. These women came from good homes, and without recompense gave three years of their daily lives to help the hospital. The hospital could do nothing to reduce their labours, but the new building represented an effort to do something to increase their comforts."

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The name of Dr. H. D. Kemp, is as closely associated with Ste. Agathe, as that of Dr. Trudeau with Saranac; and the pretty Laurentian village is as well known in connexion with tuberculosis as is the equally pretty village in the Adirondacks. But the presence of persons suffering from phthisis has not been an unmixed blessing to the inhabitants. The authorities of Ste. Agathe have found that a prejudice has been created against their village in the minds of those who were fully sensible to the charm of the place. They are now taking measures to remove this distinction which the village has attained, by the imposition of a prohibitive tax upon sanitariums. Dr. Kemp has forestalled this change by closing his house to consumptives, a thing which in itself is regrettable. The sick he has had with him for eight years, and now he is caring for the well. The sanitarium has been renovated and converted into the Laurentides Inn, for the accommodation of any who desire a rest from the city. here is now near at hand a resort which will be a convenience to those who have hitherto been obliged to go to the United States for a period of recreation in winter or summer. Persons of experience, who have made the experiment, report that the Laurentides Inn leaves nothing to be desired for comfortable living.

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The National Association for the Prevention of Consumption has forwarded a large number of plans, photographs and architects' elevations of various sanitariums in Great Britain for the treatment of

tuberculous diseases to the office of the Provincial Board of Health of Ontario. They will form part of the provincial exhibit on the treatment of tubercular diseases, which is to be shown throughout Ontario under the auspices of the Provincial Board. Several models of huts, shacks, cots, and other appliances and equipment for combating the disease have also been received from various associations in the United States. The first place to formally request the loan of the exhibit is Kingston.

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In connexion with the death of Dr. John D. Cameron, the following resolution was passed by the Montreal Medico-Chirurgical Society:

“That this society place on record its expression of deep regret at the untimely death of a late member, Dr. John D. Cameron, lecturer of gynecology in McGill University and assistant gynecologist to the Montreal General Hospital. Dr. Cameron was a devoted, practical and incisive teacher, a warm friend to his colleagues, and in a rare degree beloved by his patients, for whose interests he considered no sacrifice of personal comfort or convenience too great in ministering to the wants of even the poorest. Cut off in the fulness of mental and apparent physical power, Dr. Cameron's death comes as a near personal loss to his colleagues, many friends in the profession, and numerous patients.

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Recognizing the advantages of a broader general education and the growing necessity of the prospective student having in addition special preparation for the study of medicine, the Board of Trustees of the University of Pennsylvania has recently decided to raise the requirements for admission to its medical school. These requirements include two years of general college training and, in addition, a certain knowledge of biology, chemistry and physics. According to the plan which has been adopted, the standard will be raised gradually, beginning with the academic year 1908-1909 and reaching the maximum in 1910-1911.

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we record with regret the death of Dr. Samuel Fairweather Wilson, of this city, which occurred on January 29th, after an illness of some months. Dr. Wilson was extremely well-known in Montreal, especially in Point St. Charles where he for many years enjoyed a large practice, living latterly at 875 Wellington street. The deceased physician was a native of Springfield, N.B., and practised in Sussex and in St. John, N.B., subsequently moving to Montreal. Of late years he had devoted his attention to electrical methods of treatment of disease. Our colleague, who died in his 51st year, is survived by a widow and daughter.

# Obituary.

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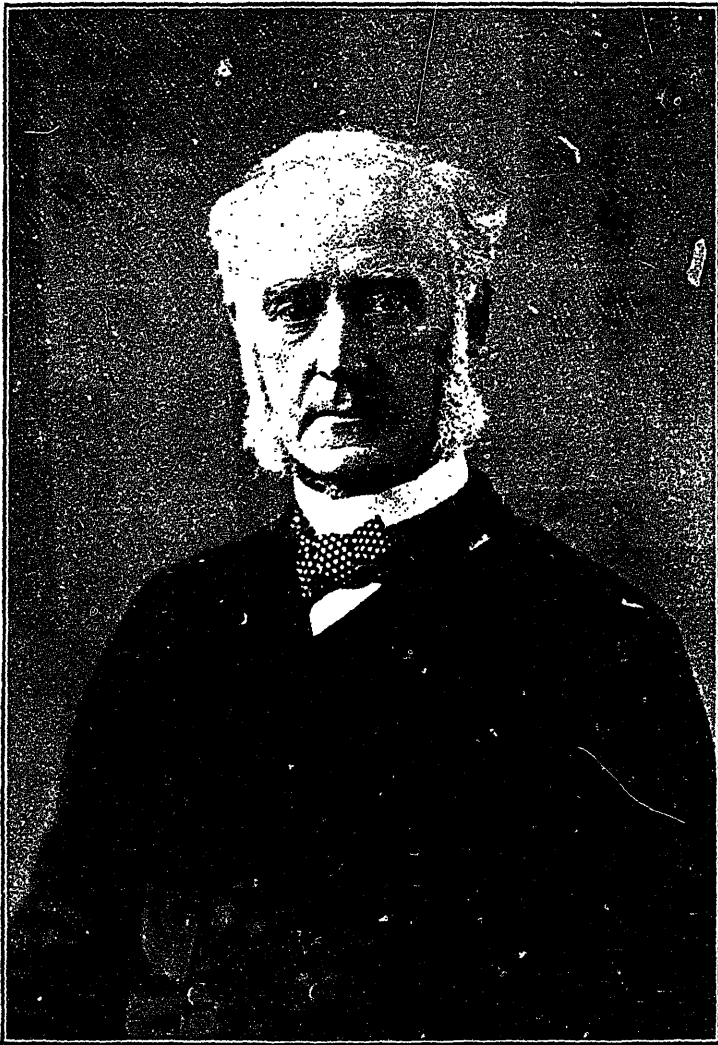
## SIR WILLIAM HINGSTON.

Sir William Hingston, M.D., died in Montreal on Tuesday, 19th February, 1907, at half-past nine in the morning, in the 79th year of his age. The immediate cause of death was a gastro-enteritis induced probably by ptomaine poisoning. The final illness lasted only seventeen hours. A fine personality passed away from amongst men when he died, and his place must always remain unfilled. We shall not see again a man with a bearing so distinguished, a behaviour so calculated to win the heart of his fellows, a manner at once so courtly and so kind.

William Hales Hingston was the first son of Samuel James Hingston and his second wife, Eleanor McGrath, of Montreal. He was born June 29th, 1829, at Linchbrook, near Huntingdon, in the Province of Quebec. His father was Lieutenant-Colonel of Militia, formerly of the 100th Regiment, or "The Dublins." He was a native of Ireland, being allied to such families as the Cotters of Cork, the Latouches of Dublin, and the Hales. After the reduction of the forces at the conclusion of the war against the United States, Colonel Hingston settled upon a grant of land at Hinchbrook, on the banks of the Chateauguay River.

This Col. Hingston feared God and honoured the King, but he was not noted for success in the management of his property. He wore his uniform habitually, and, during the time which he could spare from the hunting-field, conducted his farming operations, as he would a piece of military tactics. Consequently, when he died, in 1831, there were debts to be paid, and he left instructions that the property was to be sold for that purpose. Even if the property had been sold, the debts would not have been fully paid, and it occupied the widow fifteen years to complete the task.

That was the hard school in which the boy, William Hingston, was educated by his heroic mother. By the strictest economy she managed to educate her children at the little grammar school, conducted by John Rose, afterwards Sir John Rose.



SIR WILLIAM HINGSTON, M.D.

To his mother and these first years on the farm he owed much. The hard, out-door work, his long walks to school brought him health and physical strength. The example and precepts of his mother in whom strength of will, self-sacrifice, economy, and firmness were combined with deep Christian faith and tender motherly love, moulded the boy in a form preserved through manhood to his death.

At the age of thirteen he was sent to Montreal College of St. Sulpice. Lack of funds prevented him from receiving a full course of study, and after a year and a half's stay in that institution he was obliged to leave. The masters noticed that this pupil was unusually bright, and offered him free education; but his mother did not consider herself at liberty to accept this generous offer. At the end of his first year he had carried off a prize in every subject. During his short stay he had acquired a love of classical literature so great that for some years after his departure he spent his little pocket money in procuring private lessons in Classics from one of his old tutors. If, in after years he became a scholarly, educated man with a wide knowledge of the classics of England, Germany and France, it was due to a natural inclination for literature awakened during his short stay at college and to his own energy.

Obliged to earn his living, he entered the employ of R. W. Rexford, druggist, as apprentice and clerk. At first he employed his spare time in serious reading, but later decided to study medicine, and in 1847 entered McGill University. Rexford, realizing that he would lose a promising and diligent clerk by whom he wished later to be succeeded, put every obstacle in the way of the young student, and it was only by feigning sleep that young Hingston could procure a few short hours for study.

In 1851 he graduated from McGill, and at once crossed the Atlantic in a small sailing ship to Edinburgh, then the centre of surgery in the English-speaking world. There, he was a favourite of both Simpson and Syme; of these two men, and of Dr. G. W. Campbell, his professor of surgery at McGill, he always spoke with affection and esteem. Simpson frequently

took his pupil with him, when calling upon his private patients, a mark of confidence rarely conferred.

From Edinburgh he went to London, and attended St. Bartholomew's Hospital. For economy's sake he lodged at West Brompton, and every morning walked five miles to the hospital, returning on foot in the evening. Later he spent some months in Dublin, where he worked under Stokes, and the younger men, Corrigan and Graves. During his stay in London, Edinburgh and Dublin, he had acquired a fair knowledge of German, and then proceeded to the continent where he spent some time in Paris, Berlin, Heidelberg, and Vienna, attending the clinics of the famous men of the time. All through his stay in Europe he was obliged to practice the strictest possible economy, depriving himself of all but bare necessities, his diet at times consisting of bread and water only. His two years stay in Europe, including the expense of his degree, several certificates, private lessons in various subjects, cost him £96. This was a rare feat in economy, but he had laid aside that sum from his earnings as a clerk, and had none to whom he could turn for assistance. He knew that when that was expended he would be obliged to return to Montreal, and on strict self-denial depended the fulfilment of his ambition. Before leaving Europe he returned for a short time to Edinburgh. Simpson strongly urged him to remain as his personal assistant, but Dr. Hingston yielded to the desire of his mother, and returned to Montreal.

He opened an office in Montreal on McGill Street, and by successive stages migrated to Bonaventure Street, to Beaver Hall Hill, to Union Avenue, and finally to Sherbrooke Street. He and the late Dr. Howard were always neighbours, in these various movings.

The second year of his practice, was the year of a cholera epidemic. The ravages of this disease were fairly well confined to Griffintown and Point St. Charles, then largely peopled by penniless emigrants, most of whom were from Ireland. These poor people found that, of the physicians of Montreal, there was only one who was willing to sacrifice his days and nights for charity's sake, who was willing to come



any hour, as often as he was called, and even to sleep on the floor beside his patient, and all this without any hope of remuneration. Most of his visiting was done on horseback, and on many occasions from sheer exhaustion he was known to sleep in the saddle. Very soon his was the only medical name known in those quarters. In later years the fruit of his labour appeared. When these people became thriving, Dr. Hingston had almost an exclusive practice amongst them.

In 1860 Dr. Hingston was nominated to the staff of the Hotel Dieu, which had first opened its door in its present situation. The first patient under his care was a woman suffering from a diseased elbow, and Dr. Hingston successfully performed resection of that joint. This operative measure was a recent one in Europe and one never before practised in Canada. During the following years Dr. Hingston's practice grew steadily larger. Recently, he remarked that, for the first thirty-five years of his practice, his professional income showed a yearly increase.

In 1865 he was with a few others instrumental in reviving the Montreal Medico-Chirurgical Society. A circular signed by Dr. R. P. Howard, Dr. Hector Peltier, and Dr. Hingston was sent to a number of medical men of Montreal calling a meeting. The object of the meeting was the revival of the Society, which had been dead since 1851. The Society was again brought to life, Dr. G. W. Campbell being President, Dr. Hingston Vice-President. At the annual meeting the following year, Dr. Hingston was elected President, an honour repeated in 1873, and again in 1880. For many years Dr. Hingston was one of the strongest supporters of the Society in reading papers, presenting specimens and cases, and in discussion. His name is met with on nearly every page of the minute book of that period. It was about that time that Dr. Hingston with a few others founded the Women's Hospital and he remained on the active staff till the organization of the Western Hospital, of which he was a charter member. The Women's Hospital joined the Western, and to the latter institution Dr. Hingston always remained consulting surgeon and chairman of the Medical Board.

In 1870 the question of founding a Medical school of Bishop's College was raised, and next year a charter was granted, Dr. Hingston being named professor of clinical surgery and head of the Faculty. In a few weeks he found it necessary to give up either the new college or his position at the Hotel Dieu, so he resigned from the Faculty.

In 1882 he was named professor of clinical surgery at the Montreal School of Medicine, Victoria University. He had already been giving clinical lessons without an appointment since 1860. Five years later he became Dean and occupied the chair till the union of Victoria and Laval in 1891. From that time till his death he occupied the chair of clinical surgery in Laval University.

In 1885 the great small-pox epidemic raged and Dr. Hingston was chosen Chairman of the Board of Health. A pamphlet on vaccination as a preventive of this disease was printed and distributed by the Civic authorities and in every way Dr. Hingston worked to make vaccination compulsory. Much opposition was met with and on many occasions the great determination and firmness of the chairman had to be shown. At this time he published a book which was very favourably received, "The Climate of Canada and its relation to Life and Health."

In 1892 the British Medical Association held its annual meeting at Nottingham, and Dr. Hingston was invited to deliver the address on Surgery. The address was well received.

Sir William Hingston was a great surgeon when greatness in surgery consisted in courage, decision, and rapidity in operation. Fifty years ago he was doing capital operations as well as they could be done in those days. Surgery then was a fearful thing, and he never got over this impression that an operation was a serious matter. No surgeon who was trained in that hard school has ever been able to master the meticulous routine of modern asepsis. Sir William had much respect for the thing which had been, and was not sufficiently alive to the importance of the new. He never mastered entirely the technique of asepsis; indeed, he was never fully convinced of its importance.

In 1872, Dr. Hingston removed in one operation the tongue and lower jaw. This is the first case recorded of that operative

measure. In February, 1873, the patient was shown at the Montreal Medico-Chirurgical Society, and the case is recorded in the minutes. In the early eighties, ovariectomy for cystic and other tumours was comparatively a new operation. His success at first was small, but two or three years after his first operation he had a series—at that time remarkable—of thirteen cases operated on without a death.

It would require a formal biography to describe all the academical honours which came to him, and to mention the societies which he addressed. He had honorary degrees from two universities and in 1900 he received the honorary fellowship of the Royal College of Surgeons of England.

Dr. Hingston began his public career when he came before the people of Montreal as a candidate for the Mayoralty in 1875. He received about ten votes to his opponent's one, and, as he stated at the time, "without having spent one moment of time or one shilling of money to obtain a position which no one should seek, but which, coming as it did, no one was at liberty to decline." He was re-elected by acclamation, but declined a third term. The period of his Chief Magistracy was one of unusual importance, especially at the time of the Guibord affair. For the wise and moderate manner in which he discharged his duties Mayor Hingston received the thanks of the Governor-General, Lord Dufferin.

On May 24th, 1895, he was created Knight Bachelor and the same year he ran as Conservative candidate in Montreal Centre for the House of Commons, being defeated by Mr. James McShane. The following year he was appointed to the Senate.

Dr. Hingston had taken an active interest in financial matters. At one time he was president of the City Passenger Railway Company which has since become the Montreal Street Railway System. He was president of the Montreal City and District Savings Bank, and a director of the Montreal Trust & Deposit Company.

Sir William worked till the end, and saw his last patients in his bed-room even when his illness was sore upon him. Of late years his strength was somewhat reduced, especially since a severe attack of influenza in 1900. But his constitution was sound, and it was preserved by exercise and abstemiousness.

When in his prime, long walks of thirty or forty miles were not rare. On one occasion he covered fifty-five miles in one day. At the age of sixty-five he used to row alone to his country house fifteen miles down the river. A lover of horses he used to be a straight rider to hounds—it was his favourite sport and only recently did he give up the saddle.

His personal habits were simple. Abstemious and self-denying at table, his meals were usually remarkably small. Always sociable and a member of many clubs he had too high an idea of the importance of time to waste it in amusement.

Tall and erect, with well cut features, bearing an expression of strength and kindness, Sir William always attracted attention. His manners were courtly and refined, belonging rather to the old world and an older generation. Nor did this manner ever change, it was part of the man; it was an exterior sign of what he really was. He was as courteous to the young graduate as to those of his own age, to the penniless sufferer as to the highest in the land. He was a bright and witty conversationalist, always good company, a fair public and rare after-dinner speaker. In the Senate he rarely spoke, but when he did was well listened to, as it was felt there was much in what he said. Politics did not interest him; he entered into discussion only when principles were at stake.

His career was the embodiment of all which is best in the profession of medicine. By a long and well conducted life he won the respect of his colleagues, the confidence and affection of his patients, and the good will and consideration of his fellow-citizens.

Nor was this appreciation limited to the immediate community in which he lived. He moved with freedom in the larger world, and always and everywhere impressed the bystanders with a sense of ease, dignity, and kindness. No one has heard him utter a harsh word against a colleague, however great, however incompetent and young.

His fine perception of niceness in professional conduct, and his just appreciation of the larger propriety in life made him the confidant of the old and the mentor of the young. His judgments upon intricate professional situations were especially sure, because they were based upon feeling for rightness,

and were wholly disinterested. Medical life in Montreal will be the poorer for his loss.

Of all which is unworthy of the high tradition of medicine he had a splendid scorn and a capacity for bitter speech in its denunciation. But his harshness left no sore, since it was directed against the thing and not against the individual.

He attained his high position in medicine and surgery not so much by what he did as by what he was. It is an infallible sign that a physician has lived his life well if he has won the hearts of his patients and of his colleagues. Sir William did both.

One who knew him intimately has favoured us with the following note:—"To those who knew him well it was apparent that all his actions were regulated by some governing force, some strong unbending principle. This was his high conception of duty, his trust in God, his faith in his religion. His sense of duty, guided by a clear sense of right and wrong, had for foundation his strong faith in his Master. He tried to do his duty for duty's sake, and because he felt that was what his Master required of him. The feeling never left him that he and all others were points moving towards eternity and that the short time given to him here should be well spent. This love of duty for higher motive pervaded everything in his life. It was that which made him so trusted by his patients.

"To his patients he applied the same principles and rarely missed a chance of offering them counsel. He considered that his profession required it of him. In religion he was a staunch, uncompromising, but never aggressive Catholic; many of his intimate friends were ministers of other creeds. This deep sense of religion and duty, which to him were the same, is the key to his life. By it he accomplished what he did, occupied a position it will be hard to fill, and when he died called forth so large a tribute of sorrow and praise."

It would require much space to record the expressions of regret which have been conveyed to the family, and only a few of the earlier ones are selected. The authorities of the Hotel Dieu wrote:—"The members of the medical staff of the Hotel Dieu have learned with deep regret of the sudden death of their venerable president. At a special meeting convened for the purpose they desire to convey to the family the expression of

their profound sympathy in the loss they have sustained. They wish to manifest their appreciation of his great devotion to duty as dean of the hospital, and they desire to place on record their great admiration of his many personal qualities. They join with the reverend ladies of the Hotel Dieu, together with the patients, in mourning his death."

At a meeting of the Montreal School of Medicine and Surgery, medical faculty of Laval University the following resolutions were adopted:—"That the Montreal School of Medicine and Surgery have learned with the most profound sorrow of the death of their colleague, Sir William Hingston: that the members of the said faculty deplore all the more their loss in view of the long and honourable career of Sir William, during which he attended with equal devotion the poor and the rich, and occupied at the same time the most important and responsible positions among his fellow-citizens, while his high medical attainments shed a lustre upon Canadian medicine which extended far beyond the boundaries of his native land."

At a meeting of the directors of the City and District Savings Bank the following was passed and inscribed in the minutes:—

"Resolved, that this board record its sense of the loss it has sustained by the death of Sir William Hingston, a director of this bank since 1875, and president since 1895, whose great moral, professional and business reputation has largely contributed to maintain and increase the public confidence which this institution has hitherto enjoyed."

In the Senate Mr. Speaker, Senator Dandurand, Hon. R. W. Scott, Senators Loughheed, Cloran, Sullivan, and Ferguson deplored the event in fitting words.

Sir William is survived by Lady Hingston, Margaret Josephine, daughter of the late Hon. D. A. Macdonald, Lieut.-Governor of Ontario, four sons and a daughter. The eldest son is studying for the priesthood in the Society of Jesus; the second son is Dr. Donald Hingston, of the Hotel Dieu staff; the third, Mr. Basil Hingston, and the youngest son a student at Laval University. It is understood that a considerable fortune has been left behind.

## Reviews and Notices of Books.

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THE PRACTICE OF OBSTETRICS, IN ORIGINAL CONTRIBUTIONS by American authors. Edited by REUBEN PETERSON, A.B., M.D. Professor of Obstetrics and Gynecology in the University of Michigan, Ann Arbor, Mich., Obstetrician and Gynecologist-in-chief to the University of Michigan Hospital. Illustrated with 523 engravings and 30 full page plates. Lea Brothers & Co. Philadelphia and New York, 1907.

This, the most recent work on Obstetrics is issued by Lea Brothers & Co., as one of the series "The Practitioner's Library." The contributors are Drs. Bacon, Crockett, Dorland, Ehrenfest, Huber, Lewis, Manton, Moran, Schenck, and Warthin. The work is divided into nine sections; the physiology and development of the ovum, the physiology of pregnancy, the physiology of labour, the physiology of the puerperium, the pathology of pregnancy, the pathology of labour, the pathology of the puerperium, obstetric operations, and the new-born infant. As is usually the case in composite works of this kind by different authors, the various sections are of unequal merit and sometimes do not seem to run very smoothly into one another. In subsequent editions, this will probably become less and less noticeable. The chapter on obstetric operations is in places disappointing. For example, the operation of hebotomy (pubiotomy) which is attracting so much attention in Europe and is being done more and more frequently also on this side of the Atlantic, is dismissed in thirty-five lines, twelve being devoted to a description of the technique. The writer makes the extraordinary statement that up to the present time, *nine* operations have been reported with perfect results and attended by smooth convalescence. If he would look up recent continental literature, he would find hundreds of cases reported, in some of them the operation having been repeated in subsequent pregnancies. Perhaps the explanation lies in the fact that considerable time sometimes elapses between the writing of the article and the publication of the book. It is a blemish, however, for which the author should not be held responsible. Especial attention seems to have been given to the illustrations, many of them being from photographs taken in the University of Michigan Maternity. Some of these are good, but many others are confused and unsatisfactory. Photography of operative work is seldom a brilliant success. In the cuts of the instruments, too, occasionally old models have been figured with the obsolete wooden handles, as, for

instance, in figure 450, the Tarnier axis-traction forceps. These minor defects will, no doubt, be remedied in subsequent editions, and this system will take its place with the older systems and text-books which have undergone much revision and alteration as they have passed from edition to edition.

CONSERVATIVE GYNAECOLOGY AND ELECTRO-THERAPEUTICS. A Practical Treatise on the Diseases of Women and Their Treatment by Electricity. By G. BETTON MASSEY, M.D., Fellow and Ex-President of the American Electro-Therapeutic Association. Fifth Revised Edition. Illustrated with 12 original, full page, lithographic Plates and 15 Photographs taken from nature, and 157 other engravings. Philadelphia. F. A. Davis Company, publishers, 1906.

The fourth edition appeared only a year ago, so that it would seem that, in spite of this being a surgical age, there is a considerable demand for a work on electro-therapeutics, and especially on their application to the treatment of diseases of women. Dr. Massey has been known for the last twenty years as an enthusiastic advocate of this method of treatment; otherwise one would be surprised to find so much information on this department of a specialty. As he has the faculty of describing and explaining electrical apparatus with unusual clearness, his book is worth while studying for this reason alone. But besides that, it is a serviceable work on medical gynaecology, having chapters on the causes of women's diseases and on their treatment by all other non-surgical means. The most interesting chapters are those on amenorrhœa, due to undeveloped uterus, and menorrhagia, from subinvolution, while the chapters on fibroid tumours of which he has treated to a conclusion one hundred and ten cases is convincing. One of the greatest objections to the electrical treatment of fibrōids and other uterine diseases is the much greater time it requires compared with the surgical methods. Dr. Massey overcomes this difficulty by having several patients in different rooms getting ready, and by having assistants to keep the apparatus in order. Those of us who have given this treatment a fair trial found that we could not overcome the great objection of time consumed as well as Dr. Massey has done; but that is to be expected as he limits his practice entirely to office work, and it is well known that electrical apparatus is most efficient when in constant use. His article on neurasthenia is valuable, while the chapters on static electricity and X-Rays leave little to be desired. The only criticism that we feel like making is that, like all enthusiasts, he has gone a little too far away from surgery in



the direction he advocates. Cancer of the breast, for instance, if removed early enough, does not recur, so that his method of sloughing it out cannot be commended, if for no other reason than that it loses valuable time.

**HIGH FREQUENCY CURRENTS; THEIR PRODUCTION, PHYSICAL PROPERTIES, EFFECTS AND THERAPEUTIC USES.** By H. EVELYN COOK, M.D., B.S., London, F.R.C.S., England, of the Middle Temple Barrister at Law. Assistant in the Ophthalmic Department, West London Hospital, member of the Röntgen Society, etc. London, Baiellire, Tindall & Cox, Sept. 1906. Canadian Agents, J. A. Carveth & Co., Toronto. Price, \$2.25. 206 pages, 44 illustrations.

The book is divided into three parts. Part one treats of the history of high frequency currents, their production and physical properties and their methods of application. Part two is devoted to the physiological effects of high frequency currents. Part three to the therapeutical uses of high frequency currents, their production and physical properties and as electric currents of a very high potential having oscillations of enormous frequency. The high voltage reaches to the enormous number of 1 to 3 millions and the frequency of oscillation to three millions or more per second.

We are indebted to Professor Joseph Henry, Lord Kelvin, Clark Maxwell, Hertz, Tesla, Thomson and Darsonval for our knowledge of these high frequency currents and the historical account given is clear and simple. Passing from the history to the methods of production we have a clear account thereof with diagrams clear in character, and clearly printed, of the different apparatus for producing these currents. We commend this book to anyone who wishes to get a clear account of what high frequency currents are, how produced, their physiological action and therapeutic value, in certain diseased conditions of the body, both medical and surgical.

There are reports of cases given including sprains, dislocations after reduction, delayed osseous union, and in medicine, cases of tubercular disease of lung, scrofulous ulcerations, tubercular knee and instep, cases of sciatica, rheumatic pains, collitis, both ordinary and ulcerative, and of defective metabolic change are given with the results. It is a book of practical work and contains hints for practice in the treatment of diseases in which these currents may be expected or have been proven to be efficacious. It is printed well on good paper and with good illustrations throughout.

A TEXT-BOOK OF PATHOLOGY. By ALFRED STENDEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Fifth Revised Edition. Octavo of 977 pages, with 399 text-illustrations, many in colours, and 7 full-page coloured plates. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$5.00 net; half morocco, \$6.00 net. Canadian agents, J. A. Carveth & Co., Toronto.

Stengel's Pathology is at the present moment, perhaps, more widely used by students than any other in this continent; this is chiefly by reason of the brief, direct descriptions which can be readily found, thanks to a good index. The special pathology sections are thus commendable: in general pathology Professor Stengel's book lies open to the charge that its lessons are not sufficiently general, that wide principles are not sufficiently insisted upon; in this regard the present edition does not differ greatly from previous editions, although immunity has of necessity been somewhat enlarged, as has also the part dealing with animal parasites. It is the writer's conviction that the part of Professor Stengel's book which is called Special Pathology should begin at page 134 instead of 366: the intervening two hundred pages are not general pathology at all, and ought not to be called so: the reviewer suggests in all seriousness that this should be done, or as an alternative that the granulomata, new growths and the general effects of parasites should be treated in a general way and the result added to the first 134 pages; the former change would free the author from the appearance of treating general questions when he is not doing so, and would tend to class the book where it rightly belongs—namely, as a text-book of special pathology.

J. McC.

A MANUAL OF PATHOLOGY. By GUTHRIE MCCONNELL, M.D., Pathologist to the St. Louis Skin and Cancer Hospital and to St. Luke's Hospital, St. Louis, Missouri. 12mo of 523 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1906. Flexible leather, \$2.50 net. Canadian agents, J. A. Carveth & Co., Toronto.

There is at the present time quite a sufficient number of compilations and text-books of special pathology, and McConnell's is another book which comes without making any more serious claim than to be handbook which will enable a student to rapidly acquire the main facts of the subject. General pathology, dealt with in the first part of the book, is extremely condensed, so much so, in fact, that many chapters

are but little more than a series of definitions, and we venture to think that the process of condensation has been carried too far and that the student will not see the principles connecting and underlying these statements. Tumours and specific micro-organisms are well illustrated. Special pathology, naturally lends itself to condensation better than general pathology, but every page shows evidences of the necessity to compress that has laid upon the author. There are many useful formulæ for laboratory work, but it is scarcely right to lay as much stress upon maceration as upon the examination of frozen sections, considering the wide usefulness and application of the latter method. Most of what has been here stated about the book has struck the author, we doubt not, first of all, and we doubt if the faults lie with him so much as with the necessity that has made him attempt to compress the subject into five hundred small pages.

ATLAS AND TEXT-BOOK OF HUMAN ANATOMY. Volume II. By PROF. J. SOBOTTA, of Wurzburg. Edited, with additions, by J. PLAYFAIR McMURRICH, A.M., Ph.D., Professor of Anatomy at the University of Michigan. Quarto volume of 194 pages, 214 illustrations, mostly all in colours. Philadelphia and London. W. B. Saunders Company, 1906. Cloth, \$6.00 net; Half Morocco. \$7.00 net. Canadian agents, J. A. Carvelth & Co.

Quite recently we reviewed the first volume of this work and spoke in high terms of the very beautiful illustrations of the atlas, which were mostly in colours. Volume II. fully keeps up, nay surpasses, the excellence of Volume I, and no expense has been spared in issuing a work whose illustrations have no superior. This volume treats of the viscera and heart and also the organs of generation. There are many beautiful coloured cross and vertical sections of the body, which are clear, with the names of organs, vessels and muscles, plainly printed on them. There is a very lucid account given of the development of the peritoneum, which is well illustrated. A comprehensive index is added to this volume as in the previous one. We can heartily recommend this volume to those who wish a good and coloured atlas of the viscera, with explanatory text.

PLASTER OF PARIS AND HOW TO USE IT. By MARTIN W. WARE, M.D., Mount Sinai Hospital; 12mo; 72 illustrations, 100 pages. Surgery Pub. Co., 92 William St., N.Y. City. Cloth \$1.00.

This is a useful book on account of the general demand for the information and instruction upon the subject which it so explicitly conveys. The whole subject, from the making of the bandage to its use

as a support in every form of splint, corset or dressing, is graphically described and illustrated. The use of plaster of Paris in dental surgery is also covered.

**A TEXT-BOOK UPON THE PATHOGENIC BACTERIA.** By JOSEPH MCFARLAND, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. New (5th) edition. Octavo volume of 647 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$3.50 net. Canadian Agents, J. A. Carveth & Co., Toronto.

We must commend Professor McFarland for the spirit in which he undertakes the re-writing of his book in this, the fifth edition. He has made "careful analyses of the reviews of past editions, in the hope that it might be possible to improve the work according to the suggestions offered." It is to be hoped that reviewers write in no less conscientious a spirit. The fifth edition is a few pages longer than its predecessor, but shews considerable re-arrangement, and the insertion of much material in place of what has been cut out. The fifty pages devoted to immunity are quite new, and present the various problems in a straightforward, definite way: this subject has naturally expanded greatly in the last four years. As before, the pathogenic bacteria are studied separately, and much useful information is incidentally added to the technical description of each form. Non-pathogenic bacteria are not dealt with at all. Professor McFarland's fifth edition has the virtues of its forerunners and some added ones.

**PRACTICAL DIETETICS; With reference to Diet in Disease.** By ALIDA FRANCES PATTEE. Fourth Edition. 12mo, cloth. 300 pages. Price, \$1.00 net. A. E. Pattee, Publisher, 52 West 39th Street, New York.

When the first edition of this book appeared we expressed a good opinion of it. That opinion has been confirmed by the success which the book has met with. It has been adopted generally in schools, colleges and the army.

**DISEASES OF CHILDREN.** By GEORGE M. TUTTLE, M.D. Lea's Series of Pocket Text-Books. Edited by BERN B. GALLAUDET, M.D. Second Edition Revised and Enlarged. Publishers, Lea Brothers & Co. Philadelphia and New York.

That in less than six years this little work has gone through two printings, and has now been issued as a new edition, revised and

brought up to date, is ample evidence of its success and popularity. The author claims to have dealt more largely with the physiology of infancy and with infant feeding than with the pathology of the subject. The work is convenient in size, well arranged typographically, and very practical in character. It is a safe and very concise introduction to the subject of Pediatrics, and will probably be more useful to medical students than some of the more elaborate treatises upon this subject.

**THE USES OF X-RAYS IN GENERAL PRACTICE.** By R. HIGHAM COOPER, L.S.A., Medical Officer in charge of the Radiographic Department at University College Hospital, etc. Baillière, Tindall & Co., London. Canadian Agents, J. A. Carveth & Co., Toronto. Sept. 1906, 98 pages, 15 illustrations. Price 75 cents.

The intention of this little book is not to be a handbook to the science of radiotherapy but to give the general practitioner some idea of the help he may obtain in practice from X-Rays and to indicate what cases are suitable for examination and treatment. The physics of the subject are only briefly outlined, but enough time is devoted to this part of the book to enable the reader to understand what is meant. The chapters on radiography are clear and explanatory. The paper and typography are good and clear, as are the diagrams and copies of radiographs. Great care has been bestowed on the copies of skiagraphs which are well selected.

**SYLLABUS OF LECTURES ON HUMAN EMBRYOLOGY.** By WALTER PORTER MANTON, M.D., Professor of Clinical Gynæcology, Detroit College of Medicine. Third edition. Revised and Enlarged. Illustrated 12mo, 136 pages. Price, \$1.25, net. F. A. Davis Company, 1914-16 Cherry Street, Philadelphia, Pa.

While this work is specially designed for students in their first and second years it is likewise a desirable manual for review and reference for the general practitioner. It is not intended to take the place of the exhaustive text-books on Embryology, but is primarily for use in the classroom supplementary to the lecture and for laboratory guidance.

**SURGICAL SUGGESTIONS.** By WALTER M. BRICKNER, M.D., and ELI MOSCHCOWITZ, M.D. New York Surgery Publishing Co. 1906.

The Surgical Suggestions published during the past year in the successive issues of the *American Journal of Surgery* have been extensively quoted in medical journals throughout the United States and Canada. This has suggested to the editors their arrangement in logical order, and in a concise form. The present volume is the result, and it is full of wisdom.

**A TEXT-BOOK OF OBSTETRICS.** By BARTON COOKE HIRSH, M.D. Professor of Obstetrics in the University of Pennsylvania, Gynecologist to the Howard, the Orthopædic, and the Philadelphia Hospitals, etc. Fifth edition, revised and enlarged, with 767 illustrations, 40 of them in colors. Philadelphia and London: W. B. Saunders & Co., 1906.

The author has carefully revised his book, has expanded some parts and rewritten others, so that it is now one of the best books for the student and for easy reference by the practitioner. When further information upon any subject is desired, the bibliography is sufficiently complete to point the way to the best monographs. The subjects of puerperal infection and gestational toxæmia have been revised, and brought up to date, and now form a valuable part of the work. The illustrations are numerous, and for the most part excellent.

**THE HARVEY LECTURES, DELIVERED UNDER THE AUSPICES OF THE HARVEY SOCIETY,** of New York, 1905-06. J. B. Lippincott Company, 1906.

The Harvey Society of New York was organized in 1905 through the efforts of Dr. Graham Lusk. The lectures deal with the purely experimental side of medicine, and are a broad presentation of subjects of general interest from the laboratory point of view. The present volume contains thirteen lectures of considerable length given by men who devote themselves to experimental medicine, namely, Professors Hans Meyer, Carl Von Noorden, F. G. Novy, P. A. Levene, W. H. Parke, Lewellys F. Barker, F. S. Lee, Lafayette B. Mendel, T. H. Morgan, Charles S. Minot, J. Clarence Webster, Theobald Smith, and W. H. Howell. The subjects are important and the treatment is masterly.

**THE INTERNATIONAL SCIENTIFIC SERIES.** Edited by F. LEGGE. **THE MIND AND BRAIN.** By ALFRED BINET, Director of the Laboratory of Psychology of La Sorbonne. Being the translation of "L'Âme et Le Corps." London. Kegan, Paul Trench, Trübner & Co., Ltd. Price 5s.

This book is an effort to establish a distinction between mind and matter. The method is purely philosophical, and does not readily lend itself to review. The book is a fine essay in the field where psychology and physiology adjoin and will be eagerly read by those who are interested in these matters. The argument is clear, and can be followed by a reader of average intelligence and industry. Upon the finality of the conclusion we have a proper diffidence in expressing an opinion.

**ATLAS AND EPITOME OF DENTISTRY.** By PROF. GUSTAV PREISWERK, of Basil. Edited by GEORGE W. WARREN, M.D., Professor of Operative Dentistry at the Pennsylvania College of Dental Surgery. With 44 lithographic plates, 152 text-illustrations, and 350 pages of text. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$3.50 net. Canadian Agents, J. A. Carveth & Co.

Dentists, we should say, ought to give a warm welcome to this book. It belongs to the series of Saunders Medical Hand-Atlases which are translations of the Lehman Medicinische Handatlaten, known throughout the world for their accuracy and pictorial beauty. The drawings in this volume appear to us excellent, and tempt one to learn something of the principles and practice of dentistry in which the text abounds.

**THE IMMEDIATE CARE OF THE INJURED.** By ALBERT S. S. MORROW, M.D. Octavo 340 pages, 238 illustrations. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$2.50 net. Canadian agents, J. A. Carveth & Co., Limited.

This book gives as well as any book can the procedure which should be followed in the immediate treatment of injuries and the care of the wounded. Combined with proper instruction it will be of great value to persons, professional, as well as non-professional, who may be called upon to render "first aid." The illustrations alone are highly instructive.

**THE PRACTICAL MEDICINE SERIES.** By GUSTAVUS P. HEAD. General Editor Vol. IX. Anatomy, Physiology, Pathology. Edited by W. A. EVANS, ADOLPH GEHRMANN and WILLIAM HEALY. Vol. X. Skin and Venereal Diseases, Nervous and Mental Diseases, Edited by W. L. BAUM, HUGH T. PATRICK and WILLIAM HEALY.

These volumes complete the series for the year 1906. We have frequently spoken of this series with respect and praise. The ten volumes contain a valuable record of medicine in an interesting form.

**SELF-PROPELLED VEHICLES.** A practical treatise on all forms of automobiles, by JAMES E. HOMANS, A.M., Fifth Revised Edition entirely re-written. New York, Theo. Audel & Co., 63 Fifth Avenue, 1907.

Beauty as much as utility, appears to be the aim of manufacturers of automobiles, and this book has a proper beauty of its own. To

read it is the next best thing to owning a self-propelled vehicle. Indeed, this vicarious possession is free from some of the inconveniences associated with actual ownership. To read the book and study the drawings introduces one into a new world, and it is surprising how much of it an ignorant person can understand. To an expert the book must be a great joy.

**MATERIA MEDICA FOR NURSES.** By EMILY M. A. STONEY. 12mo, 300 pages. Third edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company, 1906. Cloth, \$1.50 net. Canadian agents, J. A. Carveth, & Co.

Nurses, by this time, must be a well-instructed class, if they study all the books which are written for them. Here is a book of near 300 pages, containing all of materia medica, which it is necessary for a physician to know. It is in its third edition, which is evidence that nurses do study the courses which are arranged for them.

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## Medical News.

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### MONTREAL GENERAL HOSPITAL.

The eighty-fifth annual meeting of the Montreal General Hospital was held on February 19th.

The report of the secretary, submitted by Dr. F. G. Finley, recorded the deaths of nineteen life governors during the year. The report showed that of the 3,458 indoor patients treated to a conclusion, 190 remained over from the previous year; 3,473 were admitted during 1906, and 205 remained in the hospital at the end of the year. There were discharged from the hospital 3,204, and there died in the institution 254. The percentage of mortality was 7.3, or exclusive of deaths within three days of admission, 4.2. The average number of patients in the wards per diem was 201.02. The average number of days in hospital per patient was 30.102, and the aggregate number of days in hospital by all patients was 73,373, an increase of 534 as compared with the previous year. The average daily cost per patient was \$1.54.

Of the indoor patients treated to a conclusion, 2,339 were males and 1,119 females, and the religions were represented by: Protestants, 1,735; Roman Catholics, 1,424; other religions, 299. Of these, 2,847 were citizens, 502 strangers, 101 sailors, and 8 immigrants.

Outdoor patients during the year numbered 46,982, and they were treated as follows:—Medical department, 10,905; surgical, 19,987; eye



and ear, 4951; gynæcological, 1,741; laryngological, 2,991; dermatological, 1,764; neurological, 2,362; dental, 221; emergency, 2,030. The ambulance responded to 1,628 calls.

According to the report of the President the income for the past year amounted to \$102,318, and the expenditure to \$113,187, being an excess of expenditure over income of \$10,869.

During the year legacies without conditions had been received as follows, and added to the reserve fund: Estate late E. H. King, \$100,000; estate William Francis, \$4,500; estate Mrs. E. H. King, \$2,500; estate G. M. Kinghorn, \$1,000; estate Mrs. Alex. Keith, \$990; estate late Chas. Alexander, \$500; estate James Poustie, \$200; estate George Outram, \$45. In addition, a legacy of \$40,000 had been received from the estate of the late James Moore, and specially invested, being subject to the payment of four annuities to legatees, amounting to \$1,476.

To the endowment fund the following donations had been received during the year: Mrs. D. Torrance, New York, \$5,000; Mrs. J. and Mrs. J. M. Pangman, \$2,000; Dominion Commercial Travellers' Association, \$2,000; a friend, \$2,500; Mrs. D. Williamson, \$2,000. The balance at the credit of this account on December 31 was \$98,000.

Total subscriptions to the Alexander Fund amounted to \$211,859, payment being spread over five years. Of this amount, there was at present at the credit of the fund, in the bank, \$96,050.

The following officers were elected:—President, Mr. James Grathern; vice-president, Mr. H. Stikeman; treasurer, Mr. F. W. Evans; secretary, Dr. F. G. Finley.

The president, vice-president and treasurer, with the following, were elected the committee of management for the ensuing year: Dr. F. J. Shepherd, Messrs. David Morrice, J. B. Learmont, G. F. C. Smith, A. W. Hooper, James Reid Wilson, S. H. Ewing, Abner Kingman, Hugh Graham and Sir Montague Allan.

The medical staff was elected for one year as follows: Physicians, Drs. W. A. Molson, A. D. Blackader, F. G. Finley, H. A. Lafleur. Surgeons: Drs. F. J. Shepherd, G. E. Armstrong, J. Alex. Hutchison, J. M. Elder.

In the outdoor department the following were elected for one year: Physicians, Drs. G. Gordon Campbell, S. Ridley McKenzie, C. A. Peters, A. H. Gordon, C. P. Howard, A. G. Nicholls. Surgeons: Drs. Kenneth Cameron, E. M. Von Eberts, A. T. Bazin, A. R. Pennoyer, W. L. Barlow, R. P. Campbell.

For one year the following specialists were elected: Oculist and aurist, Dr. G. H. Mathewson; assistant oculist and aurist, Dr. S. H. McKee; gynaecologist, Dr. F. A. L. Lockhart; laryngologist, Dr. H. D. Hamilton; assistant laryngologist, Dr. R. H. Craig; neurologist, Dr. D. A. Shirres.

### ALEXANDRA HOSPITAL.

The second annual meeting of the Alexandra Hospital for contagious diseases was held on February 28th. The report of the superintendent showed that, on 9th July, 1906, the first patient, suffering from diphtheria, was admitted. Since that time there have been 293 admissions to the hospital. Of these, 244 have been city patients, namely, public patients from within the city limits. The total number of days of treatment received by these patients has been 5,383; the daily average in hospital, 22.15. In addition to these, there have been treated 26 patients, for the support of whom the city is not responsible, and 23 private cases.

Of the 293 admissions, 222 have left the hospital well, 3 relieved, 15 dead, and 53 are still under treatment. The whole mortality rate has been a little over 5 per cent., and chiefly in the diphtheria cases. Of the 158 cases of diphtheria treated only 12 died. Out of 74 cases of scarlet fever, one died, and from 42 cases of measles one death resulted.

The average cost per patient per day for the six months from July to December, 1906, was \$1.24, while at the Boston City Hospital, when the record was last published, it was \$1.46. Again, while at the Alexandra the average cost of uncooked provisions for the same period was per day 0.24 cents, an average of six American hospitals for the year 1904 gives a cost of 0.32 cents per day.

The following financial statement was presented:

Amount collected to date from citizens . . . . .	\$191,524.88
Amount expended on buildings and equipment . . . . .	266,267.79
Balance due to the Bank of Montreal . . . . .	95,698.16
Balance still due contractors and tradesmen . . . . .	16,982.98
Amount required to place hospital out of debt . . . . .	112,681.14

The President announced that the civic grant of \$15,000 had been increased to \$30,000.

### THE TORONTO GENERAL HOSPITAL.

We congratulate the Toronto General Hospital upon the good work shown in its annual report for the year ending Sept. 30th, 1906, upon the progress made and the prospects for further

advancement. There is, it is true, a deficit in maintenance of some \$14,000 in an annual expenditure of \$140,000; but we note an advance of equipment and in accommodation in many ways that speaks eloquently for the progress of the institution. The maximum number of indoor patients was 356, the total 4,085, there were 1,306 operations; 104,645 hospital days. 296 deaths occurred, and 158 autopsies are reported from the pathological department. The assets of the hospital are nearly \$1,100,000; and \$1,317,767 has been raised for, the erection of the new hospital.

Early in the year, the Ontario Government fitted up two wards, of twelve beds, for the reception of patients suffering from nervous affections, short of insanity, the first formal attempt to treat such patients in the wards of a general hospital. The result, for a beginning, has been satisfactory. An out-clinic for tuberculous patients has also proved very useful. The nursing staff numbers 96. J. N. E. Brown, M.B., is the superintendent and Miss Mary Snively the lady superintendent.

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#### TORONTO ACADEMY OF MEDICINE.

Organization of the "Academy of Medicine, Toronto," is practically completed after an agitation extending over several years. The new association will have its headquarters in the Ontario Medical Library Association building, in Queen's Park, but plans have been made to raise \$50,000 among the members of the profession in Toronto, and a big structure will be erected. The Library Association is the main nucleus, but there will be three other societies amalgamated with it, the Toronto Medical, Clinical and Pathological societies. These three will go out of existence and meet now as sections of the academy. This is the first academy to be formed in Canada. The object is thus set forth: "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 the fellows, and the promotion of the corporate influence of the profession in its relation to the community."

The academy will be managed by a council of twelve. The first one will be composed of the officials of the Library Association, and the president and secretary of the other three societies. These will choose their own officers. Succeeding councils will be composed of nineteen members.

Besides the ordinary members, there will be resident and non-resident fellows.

The officers of the four societies are: President, Dr. J. F. W. Ross; vice-president, Dr. Alex. McPhedran; secretary, Dr. H. J. Hamilton; treasurer, Dr. J. B. Gibb Wishart. Medical society—President, Dr. Rudolf. Clinical Society, president, Dr. H. B. Anderson. Pathological—Dr. J. A. Amyot.

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CANADIAN MEDICAL ASSOCIATION, MONTREAL  
SEPTEMBER 11th, 12th, 13th, 1907.

WORKING COMMITTEES.

Medicine.—Drs. Cushing, Finley, Gordon, Lafleur, Martin, Nicholl, Peters, Richer. Surgery.—Drs. Armstrong, Archibald, Bell, Barlow, Bazin, Elder, England, Garrow, Monod, Forbes, von Eberts. Dermatology.—Drs. Jack, Shepherd. State Medicine.—Drs. McTaggart, Laberge, Starkey. Laboratory Workers.—Drs. Keenan, Yates, Duval, Adami, Klotz, Bruere. Pediatrics.—Drs. Blackader, Gordon Campbell, Fry, Shaw, Francis. Gynaecology.—Drs. Chipman, Gardner, Lockhart, Laphorn-Smith. Museum.—Drs. Adami, Maud Abbott. Eye.—Drs. Byers, J. J. Gardner, Stirling, McKee, Tooke. Laryngology.—Drs. H. S. Birkett, R. Craig, Jamieson, H. D. Hamilton. Neurology.—Drs. Shirres, Colin Russell. Obstetrics.—Drs. Cameron, Evans, Reddy, Little.

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HOTEL DIEU.

For the year from January 1st to December 31st, 1906, the report of the Hotel Dieu shows that 3,112 were admitted for treatment. As there were 169 patients in the hospital on December 31, 1905, the total number treated at the indoor department during the year was 3,281.

Of this number 2,856 were discharged, 224 died and 201 remain in the hospital. The total number of days' treatment given at the indoor department was 73,489.

During the year, 1,638 operations were performed. At the eye dispensary, in connexion with the outdoor department, 14,500 consultations were given, and 701 operations of various kinds, performed. In the electro-therapeutic department, 6,784 cases were treated, and 4,612 consultations given.

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ROYAL VICTORIA HOSPITAL.

Monthly report for January: Patients admitted, 319; discharged, 272; died, 18. Medical, 109; surgical, 113; ophthalmological, 20; gynæcological, 33; laryngological, 44. Outdoor Department: Medical,

741; surgical, 708; eye, 266; diseases of women, 109; nose, throat and ear, 486. Total, 2310. Ambulance calls, 110.

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During the month of January 287 patients were admitted to the Montreal General Hospital, and 261 were discharged. There were 20 deaths, eight of which occurred within three days of admission. The average daily sick in the hospital was 209, and the highest number on any one day 225. Out-door consultations numbered 4,306. The ambulance made 143 runs in response to calls. The average number of visitors at the hospital on visiting days was 335.

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The Oxford County Medical Association was formed on January 21st. The following officers were elected:—Honorary Presidents, Dr. Joy, Tilsonburg; Dr. Williams, Ingersoll; Dr. Adams, Embro; President, Dr. A. B. Welford, Woodstock; vice-president, Dr. Brodie, Woodstock; treasurer, Dr. Neff, Ingersoll; executive committee, Drs. Parke and Mearns, Woodstock; Dr. Green, Embro; Dr. Coleridge, Ingersoll; Dr. Staples, Princeton.

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Newfoundland has one physician to every 2,419 people. Of all the names on the register of the island, 50 are those of men who registered there for the purpose of fulfilling the requirement for ship-surgeon, where a British registration was necessary. The low registration fee was an inducement.

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The physicians of Haldimand County have formed an association. The officers are: Honorary President, Dr. Harrison; vice-president, Dr. Kerr; treasurer, Dr. Jacques; recording-secretary, Dr. Maw; corresponding secretary, Dr. Arrell.

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The new detention hospital for patients suffering from trachoma at Halifax is ready for occupation, and has already been taken over by the Government from the contractors.

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Dr. John James Blacklock died at Morrisburg. He was for forty years coroner of Stormont, Dundas and Glengarry. Dr. Blacklock was born at Williamstown, Glengarry, 1823, and was the eldest son of the late Dr. Ambrose Blacklock, Surgeon of the Royal Navy. He studied medicine with the late Dr. Douglas of Quebec and graduated from McGill in 1851.

Dr. A. T. Dunn, of North Augusta, Grenville Co., Ont., died on Jan. 16th at an advanced age. He was a graduate of Queen's University, and for the last four or five years has been unable to practice his profession on account of ill-health.

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Dr. Andrew Harkness, of Lancaster, Ont., died of pneumonia, on Feb. 6th. He was a graduate of McGill University and was in his 62nd year.

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Dr. James Primrose, of Bridgetown, N.S., died on Jan. 24th, in his 61st year, of cancer.

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Dr. Andrew T. Dunn died in North Augusta, Ontario. He was a graduate of Queen's University.

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Dr. J. G. Hardy, of Carlyle, Sask., died early in January.

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## Retrospect of Current Literature.

### SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

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HUGH CABOT, M.D., and HORACE BINNEY, M.D. "Fractures of the Os Calcis and Astragalus." *Annals of Surgery*, Jan. 1907.

The X-Rays have shown these fractures to be more frequent than they were formerly considered, and have helped us materially in adopting proper lines of treatment. The deductions given in this paper are founded on a series of 111 cases, and add considerably to our knowledge of these fractures. As would be expected they occur chiefly among men in the prime of life, whose age and occupation expose them to external violence. Fractures of the os calcis are mainly true compression fractures and due to a fall from a height, the bone being crushed between the safe-guarded astragalus above and the ground or floor beneath. In some cases it may be broken by direct violence but this is not common. It was found that the astragalus was more frequently fractured as a result of falling from a height than by direct violence, but that the latter factor was more frequent than in the case of the os calcis. Three chief forms of fracture of the os calcis are described, (1) that in which the fracture has been confined largely to that portion of the os calcis

lying behind a vertical plane through the body of the astragalus. These are described as heel fragments and may be small or large. (2.) Where the force has been expended on the anterior half of the bone, the so-called anterior comminution, all the cases having two or more fragments. (3.) Where the entire bone is crushed and shattered. Fracture of the sustentaculum tali has not occurred as a distinct type, and is regarded only as an incident of the whole injury and not in itself important. The chief forms of fracture of the astragalus are of the neck and body, the former being the more frequent. Attention is drawn to the possible presence of the os trigonum in cases of supposed fracture of the posterior edge of the astragalus.

The prognosis in these fractures is very far from being as favourable in other fractures. No case was seen with anything approaching a return to the normal, and in the great majority there was marked limitation of lateral movement. As would be expected, fracture of the neck of the astragalus gives a worse result than fracture of the os calcis. The average duration of disability for fracture of the os calcis was somewhat in excess of six months, that of the astragalus about a year. Another factor influencing the prognosis is the marked *thickening* found in the region of the external malleolus. Frequently the pain is referred to this place, and removal of the overgrowth of bone is followed by much improvement. In general the treatment is similar to most fracture cases, and plaster bandage is preferred where a retaining splint is necessary. The foot must not be placed on the floor to bear weight for a full two months.

In fractures of the neck of the astragalus where the displaced fragment threatens the vitality of the overlying skin, it must be replaced by manipulation, if possible, or if not, by the open method. If the fragment be large it may be sutured, if small it is best excised. The same applies to fracture of the neck with rotation of posterior fragment. Fracture of the body is generally impacted and complicated by fracture of the os calcis. Here the result is likely to be bad, and operative interference not likely to improve things. In both small and large heel fragments of the os calcis operation is indicated, in other fractures the expectant plan is advocated. The paper is much enhanced in value by the excellent skiagrams appended.

DR. HERMANN KUMMELL. "Modern Surgery of the Kidney." *Surg. Gynec. Obstr.* Jan. 1907.

The recent and marked advance in our knowledge of renal surgery depends chiefly on information gained from the

X-Ray tube, the cystoscope, ureteral catheter, and the methods of investigating the functional activity of the kidneys, notably cryoscopy. With improved technique it is now possible to make a definite diagnosis of the presence or absence of renal calculus in every case. The principal factors in obtaining successful skiagrams are a well selected position of the patient, a good soft tube and a well adapted diaphragm. Several skiagrams must be taken and must show a shadow constant in outline and position. This constancy is essential to a differential diagnosis and is characteristic of calculus. Several methods have been advocated for collecting the separate urines, but none can equal that of ureteral catheterization. The urine segregators have all been tried and found unreliable. Turning to the most recent advance made in renal disease, the determination of the functional capacity of the kidney, it has been found that cryoscopy of the blood and urines gives the most accurate results. The phloridzin method is another important help. Methylene blue and indigo carmine have also been employed, the latter being preferred as it is less altered in colour by the urine. These are of use particularly when difficulty is experienced in finding the ureteral orifices. The estimation of the amount of urea in the separate urines is another important method. In general it may be said that the estimation of urea agrees with the more accurate results obtained by cryoscopy. When we have but a small amount of urine, say from 1 to 2 c.c. at our disposal, we possess a valuable method of examination in the determination of the electrical conductivity, which is made possible by the parallelism which exist between results obtained by this method and by cryoscopy. As a result of careful examination of the blood and urine in some seven hundred cases the following conclusions are drawn. If the kidneys are intact, the molecular concentration of the blood is constant, and, on the average, corresponds to a freezing point of  $0.56^{\circ}$ . In weakened and anæmic individuals, figures of  $0.55^{\circ}$  or even of  $0.53^{\circ}$  and  $0.52^{\circ}$  were sometimes observed. Unilateral disease causes no change in the freezing-point of the blood. That the normal freezing point of the blood proves only that so much functioning kidney tissue is present as is necessary to excrete completely the products of tissue metabolism. That ureteral catheterization and the thorough examination of the two urines for the urea content, freezing point, phloridzin test, electrical conductivity, along with the ordinary chemical and microscopical examination will give positive evidence of the presence of only one or both kidneys and their respective functional capacity. A lowering of the freezing point



of the blood indicates that the kidneys are not entirely equal to the required work. If it falls to 0.60° nephrectomy should not be undertaken, and nephrotomy only when absolutely necessary. No more striking proof of the value of these newer methods of estimating the presence of renal disease and the individual's ability to stand operative interference can be given than a comparison of the mortality attending nephrectomy prior to the new routine. Formerly, one in every six nephrectomy cases died from absence or insufficiency of the other organ, a mortality of 16 2-3 per cent; where an accurate application was made of the newer diagnostic helps there has not been one death in 148 nephrectomies.

W. L. B.

CHARLES PHELPS: "The Question of Early Operation in Cases of Intracranial Injury. *Annals of Surgery*, December, 1906.

One naturally turns with interest to anything by one so well-known in this field of surgery as is Phelps. The present article is one which, while repeating some of the statistical conclusions of his book upon cranial injuries, is meant more especially to record his beliefs with regard to the indications for operation in these cases. One may only refer in passing to two or three points upon which he has always laid emphasis, and which are here repeated; for example; the value of a progressive rise in temperature as pathognomonic of severe cerebral contusion; the fact that a temperature of 105° or over gives an absolutely fatal prognosis; and the fact that the persistent loss of urinary and faecal control is extremely strong evidence of severe cerebral contusion.

For the discussion of the indications for operation he divides the cases into several main classes. First, the epidural hæmorrhage; second, subdural injury or so-called "meningeal contusion," usually accompanied by pial hæmorrhage, occasionally by localised serous effusion, or by cortical hæmorrhages—representing conditions of a medium grade of severity; and third, the severe cerebral contusions and lacerations. In the cases of the first class he is naturally for operation. In the more severe cases of the last class, which plainly must lead in a short time to death, he is also naturally against operation. But with regard to the large class of intermediate grades of severity Phelps is very strongly conservative. Lesions with focal signs, such as paralysis of the extremities, may occasionally afford legitimate reason for operation, but "it is questionable if the result will often justify expectation." He thinks experience has not demonstrated that operation adds to the patient's chances of recovery.

A cerebral lesion which probably exists in all intracranial traumas, and is the direct cause of death in a large proportion of fatal cases, is a general hyperæmia and œdema, which primarily exerts an intracerebral pressure, coincidently or secondarily deranges cellular nutrition, and ultimately tends to destroy vital functions. . . . If any good can come from trephining in such cases it must be by relieving intracerebral pressure, and thus permitting the re-establishment of the normal capillary circulation and the restoration of normal nutritive processes." He draws attention to the fact that the importance of œdema as a distinct and often fatal lesion has only lately begun to be appreciated. The argument which follows he bases upon the experimental work of Cannon, which seemed to demonstrate that an intracranial injury by deranging local circulation, led to internal nutritive changes in the tissue cells, this in turn leading to increased internal osmotic pressure, with passage of water into the tissues; "in which process the usual rise of blood pressure was by no means a necessary factor, in fact had but little to do with it." If a progressively developing œdema is the frequent cause of a fatal ending by means of increasing intracerebral pressure, what now Phelps asks, can be done by operation? The answer he gives seems somewhat illogical. Cannon's investigations showed that the internal nutritive changes mentioned consisted practically in death or partial death of the cells due to the local anæmia produced by the injury; if now, Phelps says, the origin of the fatally progressive destruction of cells resides in greater part in the inherent defective nutrition which is the cause and not the result of the œdema, if the pressure from cerebral hyperæmia and the resultant œdema is not the essential cause of the cell-disintegration, and if this cell-disintegration is the real source of danger in the class of cases in which operation is oftenest held to be in question, then trephining, which can only relieve pressure, must be useless, and worse than useless because it makes possible new elements of danger.

In other words, as we understand it, Phelps is thinking of the death of the tissue cells as a sort of inherent and irremovable malady which operation cannot affect. It seems to us that he forgets that the *original* cause of this tissue death was the intracranial pressure, and that the result of these tissue changes, that is œdema, adds still further to this pressure from the cerebral side. Thus the complete picture is still one of cerebral compression, one of space diminution in the cranial box, and therefore, logically, the only relief must be in the direction of enlarging the cranial space. Phelps gives his view so epigrammatically at the close of his paper that it is worth repeating:

"It is probable that those surgeons who operate early and often will save many cases which would otherwise have recovered sooner; and that

those who operate later in cases which have assumed a graver character will lose some which might have recovered if the cranium had been left intact. It has been the hope of surgeons who have been in the way of seeing many cases of intracranial injury that operation might be extended with advantage to these cases of cerebral traumatism, but the present state of our knowledge of the pathic conditions which obtain affords no reason for believing that this hope will be realized."

It may be remarked in closing that the paper lacks evidence of knowledge of, or, at least, attention to, the valuable recent work of Cushing, Frazier, Erlanger, Eyster and others, upon blood pressure as a factor in conditions of intracranial pressure.

E. W. A.

J. BLAND SUTTON, F.R.C.S., Eng. "Removal of the Gall Bladder."  
*Lancet*, Jan. 5, 1907.

The writer was led to consider the advisability of removing the gall bladder on account of the difficulty experienced in removing stones impacted, or more properly encapsuled, in the cystic duct. The results obtained were so good that he now adopts removal in all cases of cholecystitis. The consideration of some of the chief variations in the relation of the gall bladder to the liver is a necessary preliminary to a discussion on cholecystectomy. Four varieties are mentioned. The simplest condition is met with when the cystic duct is obstructed by a stone. When a gall bladder enlarges in this way, its surface, which is in contact with the liver, slowly drags upon the hepatic tissue, and it is usual to find on its anterior surface a tongue like process of varying length. An inflamed gall bladder will sometimes give a similar relation, but frequently we find it imbedded in its fossa by the congested liver substance so that often no portion of its fundus appears below the margin of the liver. In the chronic form this gives us the adherent, contracted, and useless organ which must be removed to effect a cure. The cystic duct may be very much elongated and become twisted as in a case reported by Wendel, or again it and the gall bladder may be elongated so as to resemble a pea-pod. The method of operation employed is in no essential part different from that generally employed for cholecystectomy. In these cases requiring drainage the cystic duct is left and a large drain inserted into it. Statistics collected from some of the chief general hospitals in London for 1905 show cholecystotomy to have a higher mortality rate than cholecystectomy, which is not, we think, the general experience. That cholecystectomy has an important position in surgical practice all will admit, that it should be made a routine procedure is open to argument.

## MEDICINE

UNDER THE CHARGE OF F. G. FINLEY, H. A. LAFLEUR AND W. F. HAMILTON.

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During the past year a large number of important papers have been published dealing with a variety of subjects relating to the *Circulatory System*. Three associations of physicians, the British Medical Association, the Association of American Physicians and the German Congress of Internal Medicine have given a large place to the hearing and discussion of the more important and more recent phases of cardiac physiology and pathology. It may be observed that the publications are rather of work done in recent years, but now for the first time assembled and presented to the medical world. The impetus given to the study of the circulatory phenomena by the graphic method is only now becoming apparent, while the stimulus to make careful observations upon the heart and pulse, by the introduction of new instruments and the improvement of the old makes one feel the truth of Sir Jas. Barr's remark recently made in Toronto "that the man who only studies the circulation with the aid of a stethoscope is a positive danger to society."

The work of Dr. Tawara, pupil of Prof. Aschoff, of the University of Freiburg, stands out prominently above all other publications during the past year.

Prof. Aschoff (*The British Med. Journal*, Oct. 27, 1906), in opening the discussion on Heart Block reviewed the work of Tawara, which was done in Marburg. This study was undertaken in order to determine an anatomical basis for the feebleness of the hypertrophied heart-muscle in heart disease, arterio-sclerosis and nephritis. Adopting the method of Krehl, 112 hearts were examined,—24 cases of valvular disease, of rheumatic origin (23), 16 cases of nephritis, 6 of arterio-sclerosis, 9 of pneumonia, etc. No satisfactory basis could be found (with the exception, perhaps, in the diphtheria hearts) in interstitial or parenchymatous changes, rheumatic subendothelial nodules, fibrous foci or anæmic infarcts with subsequent necrosis, for the weakness and often sudden failure of these hearts. Failing to explain the enfeeblement of the heart by the demonstration of extensive myocarditic processes, Dr. Tawara's attention was next directed to the condition of the connecting bundle (the bundle of His) first described by Stanley Kent and in 1899 by His, jr., and yet more recently and completely by Tawara himself.

This bundle does not participate in the hypertrophy of even the largest hearts and it has been suggested that this "peculiar system of muscle fibres, therefore, which is responsible for the rhythmical action

of the heart might be too small in proportion to the large mass of other heart muscle. This might serve to explain the gradual paralysis of the ventricle or, as the case may be, the relative weakness of the hypertrophied heart muscle." There has been found not infrequently in rheumatic cases actual destruction of the smaller or larger branches of the conducting system, by the already described rheumatic subendocardial nodules. Such inflammatory multiplications of cells finally destroy the muscle fibres of the conducting system. Aschoff says: "If this occurs in numerous places on the internal surface of the ventricle as I have been able to observe it to do in one case, it may readily be conceived that not only an irregularity, but eventually a complete stoppage of the ventricle must result." Even though the main stem is intact, small areas could scarcely cause much change in the cardiac activity. Aschoff closes his paper with the remark that "it remains for the future to decide to what extent irregularities in the heart's action and heart failure may be referred to changes which may be demonstrated anatomically in the conducting system."

The interesting papers of Mackenzie, Erlanger and Gibson on the same subject are found in this number of the *Journal* together with a case report by Sir James Barr.

Of much interest in this connection is the article on The Cause of the Heart Beat, by W. H. Howell (*The Journal of the Amer. Med. Assoc.*, June 2 and 9, 1906). Only a few abstracts can be made from this suggestive paper. "The following facts must be taken into account by any hypothesis which attempts to picture the processes causing the rhythmic contraction and dilatation of the heart muscle:

1. The heart possesses within itself a store of energy-yielding material such that it may continue to give many hundreds or thousands of contractions after its supply of nutriment has been cut off.

2. Each contraction whether caused normally or by an artificial stimulus is maximal and, therefore, probably uses up all the energy-yielding material, which is at that moment in an irritable condition, that is to say, in such a condition that it may be acted on by a stimulus.

3. The amount of this material is nil during the phase of systole, but increases in amount throughout the period of diastole.

4. If the above statements are correct it follows that the store of energy-yielding material in the heart exists in some non-irritable form and that during the phase of diastole a portion is converted into an irritable form capable of being acted on by a stimulus.

5. The presence of certain inorganic salts is necessary for this transformation from the non-irritable to the irritable condition.

From this point of view the rôle of the calcium or of the calcium and sodium salts consists in replacing the potassium and converting a part of the store of stable material into an unstable easily dissociable compound. An "inner stimulus" does not become necessary.

Inorganic salts of the blood and lymph play an essential rôle in the production of the heart-beat.

From the consideration of myocardium, cause of the beat, and the bundle of His, we may turn to see what work has been done with the myocardium, especially the valves, during the same period of time.

Drs. MacCallum and McClure, and Drs. Thayer and MacCallum have done some work, on The Mechanical effects of experimental Mitral Stenosis and Insufficiency; and Experimental studies of Cardiac Murmurs. (*Trans. of the Association of Amer. Physicians*, 1906.

The last named paper presents several points of interest. In conducting experiment IX. with the idea of observing whether with aortic insufficiency, the pressure in the left auricle was increased without coincident mitral insufficiency, there became audible over the left auricle and just below the valves a first, a second and then after a momentary pause, a third sound—a diastolic rumble in every way similar to the early diastolic murmur in some cases of mitral stenosis. When the heart became more rapid the rumble extended into pre-systolic phase simulating closely a mitral stenotic murmur. Gradually the murmur disappeared and one heard only a thud. This thud was clearly analogous in time to the so-called opening-snap of mitral stenosis and ascribed to the sudden tension of the thickened mitral valves with the beginning of diastole. Its character, however, was precisely that of the sound in proto-diastolic gallop rhythm heard under so many circumstances, especially in nephritis, etc., ascribed to the impact of auricular blood upon the ventricle which has lost its elasticity or to an active muscular dilatation of the ventricle. It seems from the character of this sound, a hum or a thud, coming just after the second sound, that it may be due to the entrance of blood from the auricle into the ventricle, even as it seems to occur in normal cases. Thayer and MacCallum observations would seem to show that a change in the character of the blood is favourable to the development of systolic murmurs at the base.

Conditions, too, which result in especially abrupt action of the right ventricle with a large excursion of the pulse wave in the pulmonary artery favour the bringing out of systolic murmurs at the pulmonary orifice.

In replying to the discussion on his paper Dr. Thayer indicated his intention to make some experiments for the purpose of observing cardio-

respiratory murmurs. Such a murmur with its cause demonstrated has been reported by Gallavardin and Bentter (*Lyon, Méd., June, 1906*). During life the murmur was thought to be cardio-pulmonary and differed from the murmur of aortic insufficiency. Localized to the base of the heart, harsh and rasping in quality—varying in intensity from day to day and much more distinct in inspiration than in expiration. At the autopsy the aortic valves were free. Adhesions were found between the border of the right lung and the aorta and also a pericardiac symphysis was present. These adhesions of lung and aorta are regarded as the cause of the murmur. The lung through these adhesions was influenced by the aortic movements and local inspirations were caused by the collapse of the aorta in diastole,—a cardio-respiratory diastolic murmur.

**IRREGULARITY OF THE HEART.** By H. E. Hering. xxiii Congress for Internal Medicine. In Munich, April, 1906.

Hering divides cardiac arrhythmia into five groups.

1. Pulsus irregularis respiratorius (The irregularity with respiration.)

2. The irregularity due to extra systole.

3. Constant irregularity of pulse.

4. That form due to disturbances in transmission of impulse.  
(überleitungsstörungen)

5. Alternating pulse. Pulsus alternans.

The first form Hering claims is but an exaggeration of a normal condition and must be considered as present only when decidedly manifest by easy breathing. It may be observed in the period of apnoea induced experimentally or by volition. The finding of such irregularity is normal in children and Hering does not concur with Mackenzie when he describes a special type of cardiac irregularity in children—for this according to Hering, is the Pulsus irregularis respiratorius. This type is found during convalescence from febrile diseases—in neurasthenia and in brain lesion with irritation of the vagus centre. Hering believes that p.i.r. is not to be considered as a sign of cardiac weakness but rather as an increased irritability of the nervous mechanism as evidence of the presence of tonus of the inhibitory fibres of the vagus.

2. Extra systole irregularity.

This group may be subdivided into three classes according as the extra systole is auricular, ventricular or atrio-ventricular in origin. The ventricular and atrio-ventricular forms are more frequent than the auricular. By the graphic method of examination only, including a tracing

of both heart and vein pulsation is one able to determine the form of arrhythmia present. The ventricular extra systole may come between two normal ventricular systoles without essentially altering the rhythm (interpolate). The ventricular systole may obliterate or take the place of the auricular extra systole (retrograde).

The extra stimuli bringing about the extra systoles can scarcely have their origin in the normal situation. They may be mechanical stimuli or certain chemical substances. But of whatever form, they doubtless influence the *anspruchsfähigkeit des Herzens*. By the way of the nervous system the extra systole may be called forth through the vaso-motor system, thus increasing the work of the ventricle by increasing the resistance in the vessels.

The clinical significance of extra systole is first of all the increased stimulus beyond the capacity of the heart. Of more importance perhaps at that moment is the strength or influence of the cause and its constant recurrence than the disturbance of the function itself. That is to say sporadic extra systoles have but little significance. When they are frequent they are important even though their cause is unimportant. It indicates, when frequent, either the cause is constant and severe or the power or strength (*anspruchsfähigkeit*) is not equal to the task of carrying on the work and thus the physician must be watchful.

"*Herzflimmern*" is not Delirium cordis, for in the latter the heart beats, while in the former there is really no perceptible beat. Hering remarks that this condition of Herzlohmung has been seen by him immediately at the close of extra systole. It may affect the ventricle or the auricle or both and it explains sudden death in many instances.

3. The pulse of constant irregularity is one difficult of analysis because Hering finds associated with such cases always a ventricular venous pulse. The absence of the pulse from the auricle forbids final conclusions with respect to cause, etc.

Most likely in this form one has to do with an extra systole and at the same time an abnormal formation or influence of initial stimulus. The origin of the irregularity may be either the auricle or the bundle of His—scarcely the ventricle. From experiments made it appears fairly certain that this form of irregularity has its origin in the heart itself, and as it has so far been observed only in valvular disease this conclusion finds further support. He describes this irregularity as that uninfluenced by respiration and present whether the heart goes fast or slow. The irregularity remains, and during tachycardia it



is less pronounced though readily observed. When the heart is slowed by digitalis or otherwise the features of irregularity are still apparent, the longer periods being more influenced than the shorter. As this form of irregularity has not been observed in mitral insufficiency without tricuspid insufficiency being present some evidence is thus afforded for the view that the originating stimulus as in normal conditions arises in the right auricle. The clinical significance of this form of irregularity largely consists in its constant or almost constant relationship to tricuspid insufficiencies or to a venous pulse of ventricular origin. In one observation made by Hering the ventricular venous pulse disappeared and the auricular venous pulse was observed. At the same time the *pulsus irregularis perpetuus* disappeared to come again only on the re-appearance of the ventricular venous pulse.

4. The fourth form is that which we describe as *heart block*. The disturbances in the cardiac rhythm due to obstruction or to difficult transmission of the stimulus from the auricle to the ventricle.

Two groups are here described:—

(a) Temporary (*Zeitweiligen*) failure of ventricular systole.

(b) Dissociation.

The factor causing the irregularity in the first group is chiefly digitalis. Experiment bears this out. The auricle may be working while the ventricle is practically at a standstill under the influence of digitalis of Czermak experiment of pressure upon the vagus. These may be a result of the effects of digitalis upon the *connecting bundle*.

By the term "Dissociation" Hering describes those forms of irregularity due to a lesion of the Bundle of His. He says that such cases may be suspected when the ventricular action is about 30 per minute and determined when the subcutaneous injection of atropin or the vagus pressure test of Czermak no essential change in rate can be induced.

5.—*Pulsus Alternans* first described by Traube (1872) refers to the volume difference and not to time, (irregularity of volume). A large pulse followed by a small pulse. A small pulse by a large one. For some time Hering explained this form of pulse under the term of Herz bigeminie or *pulsus pseudo alternans*. He now describes it without the qualifying term "pseudo."

His explanations of this form of pulse with its definitions are not clear. In all cases observed by Hering there was grave cardiac disease present nephritis and endocarditis.

The nutrition of the heart may be disturbed and when severe enough calls forth this irregular action—under ordinary action of the heart. If

however, the disturbance is only slight the irregularity becomes apparent only when the heart's action is increased. Prognostically the smaller the small wave the graver is the cardiac disease causing the symptom.

Of these five groups the two first mentioned are the most common while with the exception of the form known as the respiratory arrhythmia, the heart itself is the seat of the causes of arrhythmia. The heart plays the role of an indicator of extra cardiac conditions very frequently, but in these forms of arrhythmia—in extra systole in the p. i. perpetuus,—in many cases of ventricular contraction failure, in dissociation, in the alternating pulse the heart itself is affected—and the cause is immediately within the heart or affects the change through vasomotor disturbances.

In closing his paper on the irregularity of the heart, Hering made brief reference to the theories of cardiac movements, the neurogenic and the myogenic, and declared the importance which arrhythmia possessed independently of all theories.

The myogenic theory had strong support in the established function of the bundle of His.

GALLOP RHYTHM OF THE HEART. FRIEDRICH MÜLLER. München. Med. Woch, 1906. 785.

Gallop rhythm of the heart is the normal rhythm with a third sound interposed either in first half of diastole or in the presystolic period. In either instance, of course, the sound occurs in diastole, but according as it is in the first half or the last half of that period it is termed protodiastolic or presystolic. The cause of the sound has been the subject of discussion. An unusually large amount of blood being thrown into the ventricle, or a loss of tone in the ventricular wall might account for the presystolic sound, or again as the auricle is often found both hypertrophied and dilated, the sound has been thought to be due to an exaggerated activity of this part of the heart.

The presystolic and protodiastolic rhythms may change the one into the other and usually the former into the latter.

Gallop rhythm is usually found associated with cardiac failure and the curves which Müller publishes rather go to show that the ventricle is working against great resistance. The lessened cardiac power, the increased resistance, and the rapid heart action combine to produce the rhythm described—conductivity being lowered.

*The position of the heart in pericardial effusions.* (Schapozhnikoff. Rev. de Méd. 1905. xxv. 789) with an epitome in *The American Journal of the Medical Sciences*, vol. 131, page 712, is discussed with relation to paracentesis pericardii. There is no reason to accept as a rule

that, with the increase of the exudate in the pericardium, the heart must of necessity fall backward, because of the fact that it has a greater specific gravity than the surrounding liquid."

The puncture of the pericardium as generally advised in the fourth or fifth left intercostal spaces is not an advisable procedure as this is the spot in which one is most likely to *reach the heart*. Puncture in the third or fourth right intercostal space close to the sternal border as well as in the sixth left intercostal space is preferable especially if one finds an absolute dulness at these points. In the case of an abundant exudate the sixth left intercostal space is preferable because here the pleura is pushed farther outward and the diaphragm is depressed.

If the vessels of the heart are ligatured and divided, the heart thus set free falls to the bottom of the pericardial cavity, but when depressed by pressure while the vessels are intact it always rose again to the upper part of the cavity.

Sears. *Exploratory puncture of the pericardium with a report of three cases.* (Boston M. & Surg. Journal, Nov. 22, 1906) and Dock *Paracentesis of the pericardium.* (The Brit. Med. Journ., Oct. 20, 1906), contribute their experience in this operation while the general aspects of the subject are discussed by each. Sears has had personal observation of 13 cases with positive results in 8 cases. He chose the fourth and fifth right spaces, the fifth and sixth left inter-spaces, at or beyond the extreme limit of dulness, making twenty-three attempts. His greatest number of successes were obtained through the fifth or sixth space at or beyond the outer limit of dulness. This route has the great disadvantage of traversing the pleura and often the lung and is especially unfavourable in purulent pericarditis. Sears says the needle always comes in contact with the heart during some part of the process. In fact that organ is sought when the flow is not immediate in order to insure the presence of the needle in the sac. The heart seems very tolerant of puncture and according to evidence here adduced from West and others, the operation from the point of view of cardiac injury must be considered reasonably safe. Sears regrets that paracentesis pericardis is so rarely resorted to and so reluctantly undertaken, and urges its early and more frequent adoption where there is marked pericardial effusion. Dock discusses the methods of paracentesis and opening of the pericardium, remarking that operations upon the pericardium are never free of danger, but they are justified by the possibility of more serious danger that exists in many cases.

Further reports on the value of X-Ray in the *diagnosis of pulmonary tuberculosis* have been made during the past year. H. Adam (Verhandlungen des Kongresses für Innere Medizin 673 xxiii Kongress),

and Lehmann and Voorsanger (Amer. Journal Med. Sciences, Vol. 132, page 527) reach practically the same conclusions.

The clinical and X-ray findings agree in the main but in the majority of cases the X-rays afforded valuable information as to the extent of the lesions, often more widespread than the ordinary clinical evidences suggest. In certain cases reported by Adam, the X-ray method revealed the presence of a lesion,—infiltration without catarrhal symptoms, earlier than the ordinary clinical methods.

Rieder (Münich. Wochen No. 17, 1906) maintains that the early diagnosis of lung abscess is now possible through the use of the X-ray. It seems no longer necessary to await the appearance of copious foetid expectoration with elastic fibres, lung tissue and hæmatoidin. Rieder claims that it is not difficult to distinguish lung abscess from circumscribed pleural exudate, tuberculous cavities and localized pneumothorax. The same observer writes of the value of the Röntgen rays in deciding upon the preserver of pneumonic areas before they are clinically located (Munich. Med. Woch, 1906. Nos. 40, 41). In cases observed by him the existence of central pneumonia has been demonstrated. At first near the hilum of the lung, the infiltration extends.

The application of X-rays to the treatment of disease has been discussed in several papers. Heineke made an experimental investigation of the action of these rays upon the bone marrow. (Deut. Zeit. f. Chir. Bd. lxxviii, page 196) and describes in his paper that he observed a destructive action exerted upon the lymphoid tissues, especially the spleen and lymph glands of the guinea-pig. It would appear that the Röntgen rays had a selective action for these tissues. The lymphocytes were first destroyed, then the granular and non-granular myelocytes and last of all the polymorpho-nuclear neutrophils. All the white cells of the bone marrow were destroyed. Regeneration took place slowly. From the experiments thus made Heineke concludes concerning the treatment of tumours with X-rays that if they are cellular they disappear rapidly under the treatment, but if fibrous they are but little if at all affected.

Improvement too, seems to be only transitory in the most favourable primary results for regeneration is the rule.

The influence of Röntgen rays on the blood and blood-forming organs is the subject discussed by Barjon in *Lyon, Médicale*, Aug. 1906. This paper is based upon 200 published cases of leucocythæmia treated by X-rays directed upon the ends of long bones, the spleen and the lymphatic glands.

At first the white cells increase, to be followed by a progressive decrease. The number of the polynuclear leucocytes increases while the myelocytes gradually disappear. In the red cells and hæmo-

globin there seems to be but little change. The enlarged glands and spleen diminish in size. Two cases of progressive pernicious anæmia were subjected to the X-ray treatment. In one the nucleated red cells increased, while in the other a marked increase in the number of the red cells and a general improvement followed. The report of this treatment contains a note of the untoward action of X-rays that pleurisy with effusion resulted in several cases.

Edsall and Pemberton have applied the X-Ray in *unresolved pneumonia* and in the same paper report upon the nature of the *general toxic reaction after X-ray exposure*. (Trans. Assoc. of Amer. Physicians, 1906.) The result of the treatment of the three cases was in each instance a rapid clearing up of most—in two cases practically all—of the signs of consolidation that had previously persisted in the three cases respectively for one month, two weeks and thirteen days without improvement. “The nature of the toxic reaction to the X-ray would appear to us to be a sudden demand upon the organism for the complete disintegration and excretion of a large amount of the products of tissue break-down with inability on the part of the organism to accomplish this, and a consequent halting of metabolism resulting in an intoxication produced by incompletely disintegrated tissue remnants. While X-ray treatment of various diseases is having a more general and at the same time a more specific application, there is a tendency to apply the serum principle of treatment yet more widely. As examples of this, one may mention the typhoid serum of Chautemesse—Maremorek's antitubercular serum, Mœbius serum and that of Beebe and Rogers for exophthalmic goitre, and the modified vaccine treatment of a variety of diseases based upon the opsonic index which has been already so fully renewed. One notices at the same time that the use of anti-tetanic serum is more frequently reported and that much larger doses of diphtheria anti-toxin are being given than some years ago. *The Journal of the Amer. Med. Assoc.*, 1906.

A NEW REFLEX.—(Über einen neuen Reflex. Zwerchfell reflex) is described by Hess. (*Munich. Med. Wochen* No. 36, 1906). It is induced by gently irritating the nipple on either side by a light percussion stroke or weak electric current. It consists in an epigastric retraction with a pulling in of the Xiphoid process and is by Hess referred to the action of the diaphragm. The old do not show this movement as it is only active while the Xiphoid is yet cartilaginous. It is promptest in the height of inspiration. The movement of the diaphragm which Hess claims accounts for the reflex is not visible with the fluoroscope. The path of impulses afferent and efferent is not yet certain.

In the examination of the thorax several new methods have been brought forward or old methods reviewed and emphasized.

Great importance of the study of the apical outline. Krœnig's sign, in the diagnosis of incipient pulmonary tuberculosis is urged by Minor. (*Amer. Journal Med. Sciences*, Vol. 132, page 522). Minor claims that this diagnostic measure is too often neglected.

Bi-manual pressure of the thorax. (La pression bimanuelle du thorax) is described by Beaufumé as a means of differentiating between consolidation of the lung and fluid in the pleura. In case of the latter the thorax half containing the fluid is practically incompressible. (*Tribune Méd.* No. 26). Upon Grocco's triangle in Pleurisy, Ranchfuss, Plessi and Ewart have recently had their say. Grocco's triangle is that paravertebral triangle of diminished resonance on the side opposite the effusion due according to all these writers to lateral displacement of the mediastinum. Koranyi (*Zeitschrift f. Klin Med.* 1906, lx. 295) claims that he described this triangle as early as 1897, giving credit, however, of independent description to Grocco. Ewart suggests that the effusion diminishes the vibration of the spinal column.

Hamburger, (*Weiner k. Wochen*, No. 14, 1906), also discusses these signs. He claims that in all cases of pleural effusion it is possible to distinguish four areas giving different notes on percussion. These four zones or areas pass gradually into one another. They are not sharply defined. Each thorax half possesses two zones. A paravertebral zone of dullness and beyond laterally a zone of clearer note over the well or healthy side. While on the affected side a paravertebral area of relative clearness (i.e. diminished resonance only) as compared with the marked dullness laterally.

V. Jaksch reported a case of Amylosis of the Lungs before the Congress held in Munich in April, 1906. (*Verhand d. K. f. I. Med.*) The patient had been a helper in a mill for 36 years. He was much reduced in weight and strength, the subject of chronic nephritis with enlargement of the heart and cedema. He coughed and expectorated. The sputum often of a rusty brown colour and of foul odor was examined in every way to determine the presence of tubercle bacilli. None were found. Even the test of injecting guinea-pigs proved negative. There was constantly present in the sputum, even when no starchy food was taken starch granules which when rubbed up with 10 per cent iodopotassium iodine solution gave the characteristic deep blue colour reaction. V. Jaksch regards his case as one in which the flour exerts the same influence as chalk or lime i.e. as a foreign body exciting inflamma-

tory reaction and thus accounting for cough, physical signs and bloody sputum.

**ENTEROGENOUS CYANOSIS.**—(Van den Bergh und a Grulterink. Berliner, k Wochen, No. 1, 1906).

By this term we understand a condition or symptom complex whose marked feature is cyanosis, associated with some intestinal disease, the lungs and heart being free. It has been found under different conditions as ulcerative enteritis, urethro-rectal fistula, chronic enteritis with choleraic seizures and collapse, and retention of bowel contents. Clubbing of the fingers and toes has been observed to develop and disappear with the onset and relief of the cyanotic features. Dyspnoea and those features of cardiac or respiratory cyanosis are wanting. An analysis of the blood divides the cases into two classes; those in which the blood is met-hæmoglobin and those in which the blood is sulpho-hæmoglobin.

While the nature of the substance causing sulpho-hæmoglobinæmia seems to be hydrogen sulphide, that inducing methæmoglobinæmia seems to be in all probability nitrites in the circulation, and it is suggested that there may be either an increased absorption or an excessive production of these nitrite bodies which have been found fixed to the corpuscles. They are possibly of bacterial origin.

W. F. H.

## Society Proceedings.

### MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The ninth regular meeting of the Society was held Friday evening, February 1st, Dr. F. G. Finley, president, in the chair.

#### PARTIAL GASTRECTOMY FOR PYLORIC CANCER.

A. E. GARROW, M.D., and C. A. PETERS, M.D.—The report of this case appears on page 175.

F. R. ENGLAND, M.D.—I would like to ask Dr. Garrow's opinion as to how the gauze happened to be there. The case altogether is a most successful one and it would be interesting to note whether there was any recurrence later on.

A. E. GARROW, M.D.—We are unable to explain the presence of the gauze in the stools and the patient denied having swallowed it, though it is my impression that it had been swallowed. There certainly was no relation between the gauze packing in the wound, and that passed in the stool besides the diary of the case showed that each piece used had been accounted for.

## CERVICAL RIB WITH PRESSURE ON THE BRACHIAL PLEXUS.

COLIN K. RUSSEL, M.D., read the report of this case which appears on page 171 of this number of the JOURNAL.

F. J. SHEPHERD, M. D.—These cases strike me as being rather peculiar. I have seen many cases of these cervical ribs but it is only since the institution of the X-Rays that these smaller ribs have been detected with any certainty during life. Formerly the ordinary large cervical rib which almost completely circled the upper thorax and all those cases which articulated with the first rib could be plainly made out, but I have never seen one of these cases give rise to symptoms and I do not see why they should, the cervical rib being merely a separation of the anterior transverse process of the vertebræ and developing with the development of the individual. Thus I cannot understand why these symptoms should appear; that they do appear there is no doubt, but why I do not know. We do not know anything about the ossification of these ribs, whether it is by a single primary centre with probably no epiphysis at all or equipped as the normal rib. It has never been sufficiently explained to me why blood-vessels going over these are said to be affected by thrombotic conditions lower down. There are many cases of just such conditions and yet no cervical rib can be demonstrated.

C. K. RUSSEL, M.D.—There have been a great many cases reported in which no symptoms have occurred. Tillman collected 26 cases, 13 with symptoms and 13 without. These simply had been found in the ordinary routine of examination. As to the rib being the etiological factor of the sensory and motor paralysis, the cases operated on by Dr. Garrow shows that now the subjective pain and the sensory paralysis has disappeared and the hand has regained the same condition it was before operation, but it will take, I imagine, three or four years for those atrophied muscles to recover, if at all. Why these symptoms occur at late period of life is very difficult to say and being forced to offer some sort of explanation it seems to me possibly to be due to the ossification of the rib; the epiphyseal centres of which are supposed to become ossified between the 16th and 25th year, the rib becoming firmer and more immobile. Muscular use and development may also be an etiological factor. The symptoms occur in the right arm more frequently than the left. In one case, occurring in a man who had to do a great deal of writing, the symptoms appeared in the right hand so that he had to learn to use his left. The symptoms then disappeared from the right hand and as he shortly after began to use the typewriter, he has had practically no symptoms in either hand since.

## MORE RECENT METHODS IN THE DIAGNOSIS OF RENAL AND URETERAL CONDITIONS.

G. E. ARMSTRONG, M.D., read this paper.

A. E. GARROW, M.D.—It seems to me that the chief lesson which Dr. Armstrong's paper teaches and emphasizes, that in renal and genito-



urinary surgery recent methods of examination combined with the older methods enables us to make fewer mistakes in diagnosis. Three years ago I had an opportunity of seeing Kümmel, in Hamburg, demonstrate his methods of ascertaining the functional condition of diseased kidneys. I was impressed with the care bestowed on the examinations, one interne had charge of the work, and the apparatus employed was carefully corrected and adjusted by a competent instrument maker.

Cryoscopy of the blood is undoubtedly of much value in determining nephrectomy, in a diseased and functionally inactive condition of one kidney when catheterization of the other kidney fails to reveal evidence of disease.

With respect to skiagraphs not only must we get good plates, but we must have the assistance of an expert to interpret the shadows.

Then we have cases of renal hæmaturia accompanied by renal colic in which catheterization reveals the source of hæmorrhage, but the skiagraph shews nothing, a stone or tumour may be suspected, but exploratory incision exposes an apparently normal kidney and we regard the case as one of essential hæmaturia. Operative interference in renal disease is made more certain and safe as the result of data obtained from all methods of examination and of these in the opinion of those best qualified to judge and as the writer of the paper has shewn, cryoscopy of the blood, if accurately estimated is of the utmost importance.

F. J. SHEPHERD, M.D.—I should like to congratulate Dr. Armstrong on the excellence of his paper. It emphasizes the fact that we should not operate upon kidneys, or bladders either, except after careful cystoscopic examination and this should be done by an expert. I have not had the success with X-Rays which Dr. Armstrong apparently has had. Some plates have failed to show the shadow of a stone and yet on cutting down I have found one the size of a marble. Again where the plate plainly indicated a stone I have found none. It seems to me it requires an expert often to see these wonderful things in X-Ray pictures. Often in these cases of hæmorrhage of the kidney where you cut down and do not find any stone it seems to be a good thing for the kidney, for very frequently the hæmorrhage and pain cease after the operation.

G. E. ARMSTRONG, M.D.—I have a little more confidence in the X-Ray picture if it is taken several times and carefully read. So far only on one occasion did I mistake a stone. In cutting down upon these kidneys where nothing is found and where the incision is beneficial, this may be due to the separating of the adhesions in which often the kidney is imbedded.

## OPERATED CEREBELLAR CYST WITH RECURRENT SYMPTOMS.

G. D. ROBINS, M.D. This case, a boy of six, was presented to the Society for fuller diagnosis. The patient was operated on by Dr. Archibald with relief of all the symptoms accompanying a cerebellar lesion. The symptoms, however, now showed signs of recurrence and the case was brought up for discussion.

W. F. HAMILTON, M.D.—Dr. Robins and Dr. Archibald are to be congratulated on the accuracy of their diagnosis in this case. I saw the patient at their request, and, so far as I could decide at the time, the diagnosis resolved itself, in the highest probability, into a right-sided cerebellar lesion, chiefly because of the situation of the pain, the right-sided sixth nerve paralysis and also by reason of the deafness which, while not conclusive, was at all events suggestive of a lesion on that side. With respect to the views held in explaining the condition it seems to me that the suggestion of trauma at birth is the most likely one, and inasmuch as all the cyst wall was not taken away, the recurrence may be due to a continuance of the pathological changes going on there with secretion and retention of fluid. With regard to the "cracked pot note" mentioned as having been elicited I would like to have some information.

F. R. ENGLAND, M.D.—I would like to ask what the after-treatment of the cyst was, and what was done with the part which was not removed surgically.

G. D. ROBINS, M.D.—With regard to the cranial percussion I would say that one could immediately elicit in this case a high pitched somewhat tympanitic note which we regarded as of the 'cracked pot' type. With regard to the 7th and 8th nerve being pressed upon I did not get a sufficiently clear view of the nerves themselves at operation to state definitely as to this, but clinically there was undoubted evidence of pressure upon the right facial nerve. The patient developed a right facial palsy within two or three days from the operation, which took several weeks to clear up.

H. S. BIRKETT, M.D.—I would like to ask if, at the time of operation the exact extent of the cyst was definitely determined, also if the 7th and 8th nerves were in any way pressed upon. The ear symptoms to me appear rather anomalous—a case presenting such definite cerebellar symptoms as this did without some involvement of the 8th nerve is not compatible with the present condition. Why the symptoms should be purely of an obstructive form is more than I can explain and it seems to me that if this cyst were so large as to press upon these nerves we would find more definite symptoms not only in the 8th but also in the 7th.