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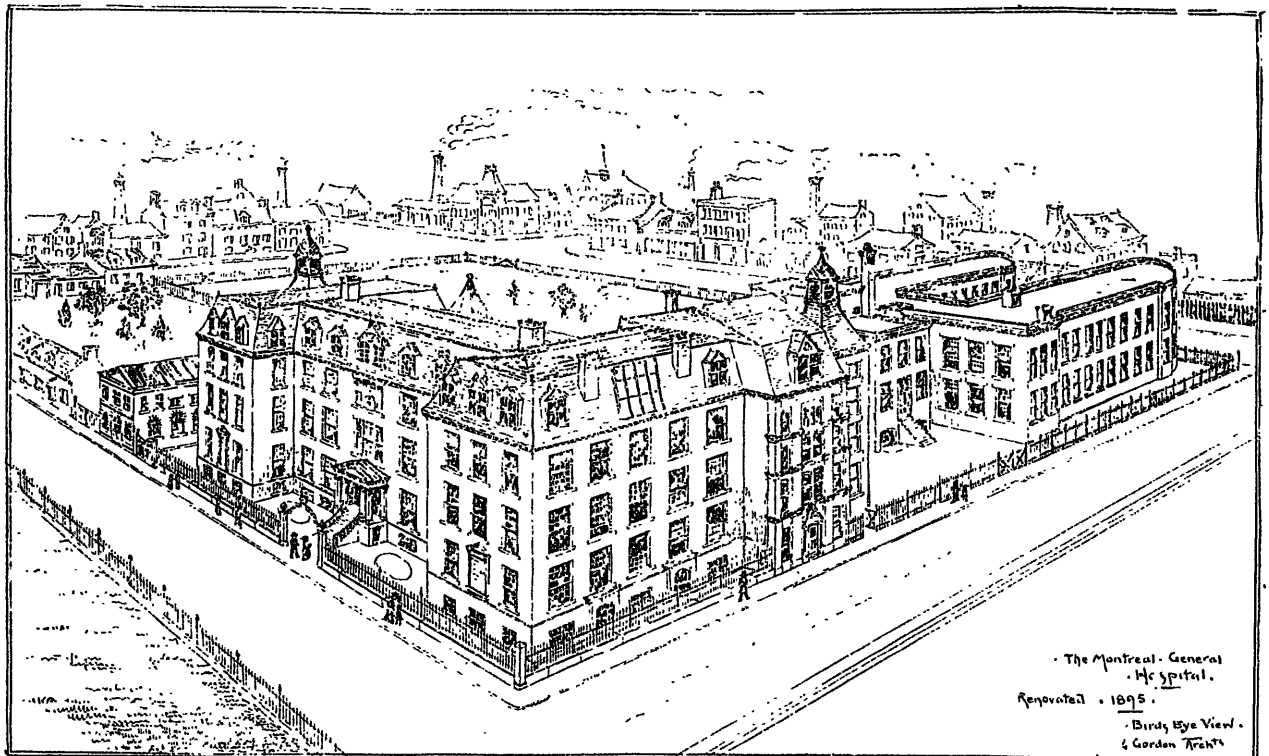

MONTREAL GENERAL HOSPITAL.

THE

MONTREAL MEDICAL JOURNAL.

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Original Communications.

FURTHER OBSERVATIONS UPON MADURA FOOT DISEASE IN AMERICA.[1]

By J. G. ADAMI, M.A., M.D.

Professor of Pathology, McGill University; Pathologist to the Royal Victoria Hospital.

and

By ROBT. C. KIRKPATRICK, B.A., M.D.

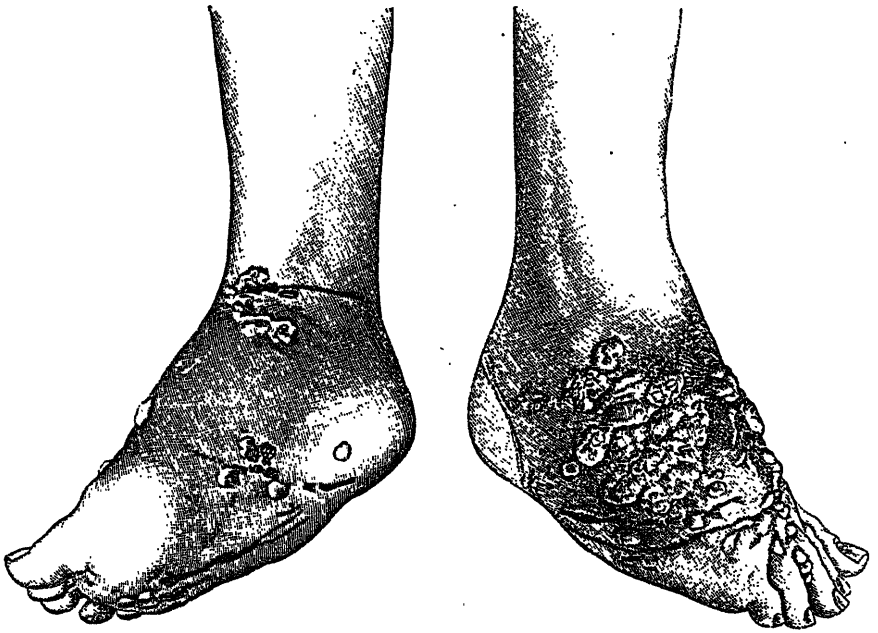
Demonstrator of Surgery, McGill University; Surgeon to the Montreal General Hospital.

At the meeting of the Medico-Chirurgical Society on June 15, 1894, we exhibited a specimen of the amputated limb from a case of madura foot disease, or mycetoma pedis, and with that showed specimens of the granules obtained from the sinuses, and sections exhibiting the specific fungus *in situ*. At that time we had not the opportunity to study fully the literature of the occurrence of this disease in America, but we pointed out that, to the best of our belief, ours was the first case of the kind reported in any English-speaking country. Since then we have been able to make fuller studies upon the subject, and at the meeting of the Association of American Physicians at Washington in June, 1895, we went a little more fully into the description of our case and of the microscopic examination of the same.

When we brought our specimen before the Society Dr. Gordon Campbell recalled that there was the report of a previous case of the disease mentioned in *Crocker's Handbook of Skin Diseases*. We have been able to obtain the original paper upon the subject by Kemper and Jameson in the *American Practitioner* of September, 1876, there referred to. To this we shall refer later, suffice it here to say that Kemper's description of his case presents so many departures from

[1] Read before the Montreal Medico-Chirurgical Society, November 29, 1895.

the usual history and appearances that it would seem improbable that he was dealing with a case of the disease proper. Thus, while we do not attach much importance to questions of priority, we think we may say at least that ours is the first indubitable case of mycetoma recorded as occurring upon the American continent in one who had never travelled outside that continent. We stated at Washington that if one case has occurred upon this continent, it is fairly certain that others have, and indeed Dr. Shepherd assures us that some years ago a patient of his at the General Hospital had a diseased foot resembling in all respects our own specimen, in external appearance and in the development of the very characteristic buttons of flesh forming the

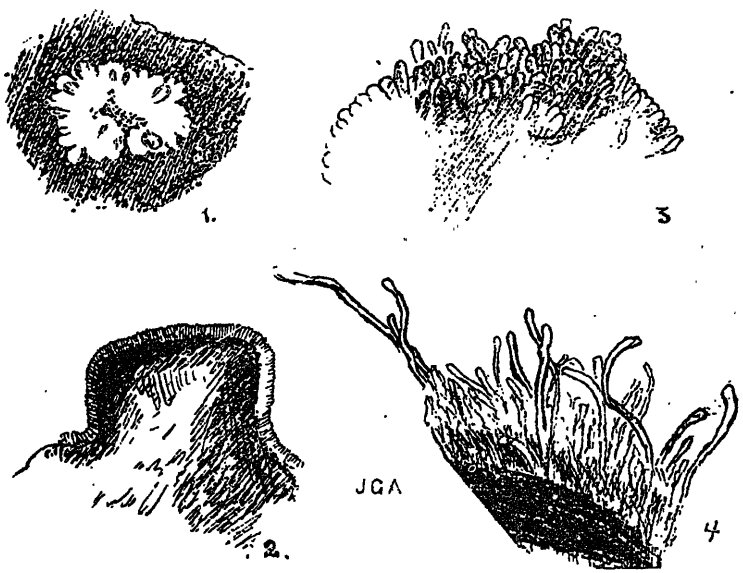


From photograph of authors' case, taken by Mr. Patrick at the Montreal General Hospital, June, 1894, prior to operation.

opening of sinuses, and by a curious coincidence, at the nineteenth annual meeting of the American Dermatological Association, held here in September of this year, Dr. J. N. Hyde, of Chicago, exhibited to the Association drawings of a foot, together with prepared sections from the subcutaneous tissue of the same, and in ignorance of our previous publication before this Society and the Association of American Physicians, concluded that the disease did occur in America. Like ourselves he held that Kemper's case was certainly a most doubtful example of the disease; and indeed he went further and felt assured that it could not be the proper Madura foot.

Only this afternoon we have received the information from Dr. Lamb, of the Army Medical Museum at Washington, that there exists in that museum a foot removed some years ago by Dr. Pope, of the U. S. Army Medical Service, from a Mexican in Texas, and presenting all the characters of mycetoma pedis. The condition would seem to have been recognized as such at the time of removal, and the clinical history given is said to bear out the diagnosis. Dr. Lamb believes that the case has not been published.

With great courtesy Dr. Hyde has placed his material at our dis-



1. Reniform fungus mass lying in granuloma of small round cells, Dr. Hyde's case (hæmatoxylin and eosin). Zeiss eye-piece, 4 lens A. Outlined by Zeiss' camera lucida.

2. Portion of fairly large fungus mass higher magnification, author's case (eosin and methylene blue). To show arrangement of peripheral clubs and central mycelium. Zeiss Oc. 4. Apochromatic 4 mm.

3. Portion of another mass, still higher magnification, author's case. Discharge from sinus mounted in glycerine, to show peripheral clubs. Zeiss eyepiece, 4 lens D.

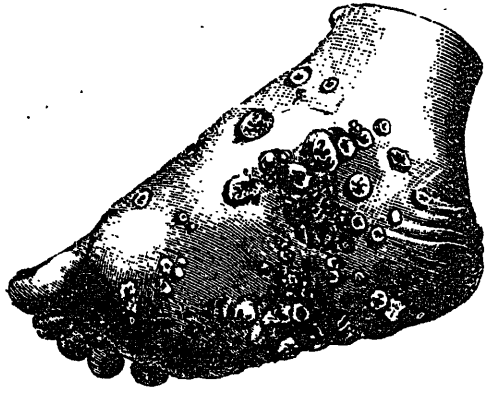
4. Ditto, to show giant clubs.

posal, and indeed has forwarded to us the whole of the removed limb with the exception of the great and second toe, with the solitary stipulation that we should return to him the preparation of the bones. This evening, with his permission, we bring before the Society the mounted preparation of the bones from his case, and for comparison exhibit at the same time our own specimen, which has not yet been shown to the Society. It will be seen that the diseased bones have strongly marked characters. These characters had already been pointed out by Vandyke Carter more than twenty years ago. We do

not know, however, that the there exists in any European or American museum a specimen of the bony skeleton from a case of mycetoma.

The two specimens exhibit the peculiar features of mycetoma as it affects the bones of the foot, namely, the development of sinuses of fairly large size and comparable with the sinuses which ramify through the soft parts, and with these a condition of rarifying osteitis.

The history of these two cases is very similar. Dr Hyde's was that of a native of the United States, who had never been out of the country, born of Bohemian parents, and aged 20, in whom the condition had been developing for thirteen years; a hard nodule was first noticed in the skin of the sole, and the condition gradually involved the anterior third of the foot. Buttons of flesh developed, some of them being present in large coalescing patches, others being isolated. These buttons formed the mouths of sinuses, passing in all directions internally.



From a drawing of a specimen of Fungus Foot in the Madras Museum, in *Druitt's Surgeon's Vade Mecum*. Eleventh Edition. London. 1878.

Our own case, it may be remembered, was in a French Canadian, aged 21, and the condition began ten years previously as a bluish spot upon the inner side of the right foot, developing only some months later into an open sore; while yet later there appeared on the sole, between the first and second metatarsals, one of the characteristic buttons of flesh. In both there was characteristic swelling and deformity of the affected part, with notable absence of pain. In both also from the sinuses and in sections of the affected region there were obtainable the granules of the fungus, which on microscopic examination resemble actinomyces in the broad details of their structure. Both, then, present the classical features of the ochroid variety of Madura foot though we observe from the short account of Dr. Hyde's case, given in the November number of the *Medical Journal*, that although the

fungus itself was not pigmented, there were pigment granules present in the secretion.

In our paper at Washington we pointed out that in one preparation we found jointed hyphæ present, and we expressed a doubt as to their meaning, and drew attention to the fact that Carter and Bassini had also figured such jointed hyphæ. We believe we are right in stating that Carter's material was in the main obtained like this one specimen of ours, from already opened sinuses, and after further search through our material and a study of that presented to us by Dr. Hyde we can arrive at no other conclusion than that these hyphæ are an intrusion. The ray fungus is the specific organism in the disease, the branched mycelium and branched hyphæ occurring parasitically and forming a contaminating growth in the discharge within the sinuses.

In place of the very characteristic granules, Kemper and Jameson described a white, fluffy, mould-like substance, with yellowish, highly refractile bodies forming mulberry-like groups. In place of a slowly developing condition their case was only of six months' duration, and instead of the very remarkable absence of pain, associated with this very extensive diseased state, they describe a pain so intense that the patient gained very little sleep.

It may be well here to say a few words describing the specific fungus of the disease. Curiously enough Vandyke Carter, to whom we owe the first full description of the condition of Madura foot, gave it the alternative name of "fungus foot disease." This, as has been already hinted, was due to mistaken idea as to the parasite causing the disease. Nevertheless, what we know to be the specific organism is more of the nature of a fungus than are the schizomycetes of ordinary infectious diseases, and the alternative name still holds.

The organism is apparently closely allied to the moulds and presents a central dense mycelium of interlacing filaments, which at the periphery pass into radiating club-like bodies. This presence of these clubs gives an appearance singularly like that of actinomyces; we are evidently dealing with one of the ray fungi. Yet in several details, and notably in the size of the clubs, in their tendency to bifurcate, and in the character of the mycelium, there are well-marked differences separating this fungus of Madura foot disease from the ordinary actinomyces as it affects man and cattle. Of late both Vincent in Algeria and Surveyor in India (with Boyce in London) have been able to gain pure cultures of this micro-organism, and the descriptions given by these observers makes it still more evident that the organism is distinct from actinomyces. It is interesting to note that Boyce in his description mentions the presence and the development of small

reddish granules in the culture media, apart from the growing fungi, which may possibly be comparable with the small pigment granules seen by Dr. Hyde in the discharge from the sinuses in his case. Unfortunately neither Dr. Hyde nor we ourselves recognized the condition in time to make cultures. In view of the importance of studying further this interesting condition of mycetoma as it occurs on this continent, we would strongly urge anyone in whose practice there occurs a case resembling the descriptions given of this disease to communicate, if not with us, at least with the bacteriologist of the nearest large town, and to ensure that either before or immediately after amputation of the limb opportunity is given for an attempt to gain cultures of the fungus. The lesion is very characteristic; the swelling of the foot and the development of the little fleshy button-like mouths of the sinuses are in themselves sufficient to draw attention to the fact that a case of the disease is present.

We here append illustrations, both of the foot in our own case, taken from a photograph made before amputation, and to compare with this we reproduce an engraving made from a specimen in the Bombay Museum and given in *Druitt's Surgeon's Vade Mecum.*

A CASE IN WHICH CHOREA OCCURRED IN TWO SUBSEQUENT PREGNANCIES—SPONTANEOUS DELIVERY AT TERM—RECOVERY.

By J. C. Cameron, M.D.

Professor of Obstetrics, McGill University; Chief of the Montreal Maternity.

On June 12, 1895, Dr. R. C. Buist, of Dundee, read a paper before the Edinburgh Obstetrical Society on "Chorea gravidarum, a statistical review of the published cases," in which he analyzed the records of 285 cases of chorea in relation to pregnancy occurring in 226 individuals. After excluding doubtful cases he found 273 attacks of true chorea in 214 patients. The mortality was 1 in 7; in 7 cases the chorea became chronic, recovery taking place three years later under treatment; 60 cases recovered before delivery, 90 recovered post-partum. Insanity, usually supposed to be of common occurrence, was not found to be frequent and was generally temporary. It was also evident that in cases of recovery the patient may possibly escape an attack in subsequent pregnancies. It is clear that pregnancy increases the condition of nervous instability and renders the common causes of choreic movements more effective, but it has not been shown that otherwise chorea exerts any specific influence upon pregnancy. With regard to child mortality, the table shows that 14 patients died undelivered, 23 were delivered before the end of the sixth month; 14 children were still-born, 12 were small or weakly, 58 are described as alive or well, 6 had convulsions at 2 and 3 days, 3 and 7 weeks, and 2½ years respectively. In many of the records no mention is made of the condition of the child.

In connection with this subject the report of the following case hitherto unpublished, may be of some interest:

Mrs. H., æt. 27, III-para, came under observation in May, 1877 about the beginning of the sixth month of pregnancy. She was much emaciated, anæmic, restless, unable to lie down in bed, with general choreic movements, most marked in the arms and face. She was unable to feed herself and suffered greatly from loss of sleep; much difficulty was experienced in administering sufficient food to maintain life.

Family history—The father was epileptic; no other members of the family had developed neurotic symptoms.

Personal history—She has suffered from rheumatism since early childhood, and recollects having had twitchings of the face at various

times, but not within eight or ten years. Dysmenorrhœa has been a constant trouble. During her first two pregnancies she suffered very much from vomiting, which weakened her, and she finally miscarried about the eighth month on both occasions. The children were born alive, but were feeble and lived a few weeks only. After the conclusion of labour she regained health rapidly.

August 8th—Sedatives and antispasmodics were tried in vain. The only treatment which offered partial relief was strychnine in full doses, pushed to the limit of tolerance, along with ether-spray to the spine twice daily. After the spray she could swallow some liquid food and sleep quietly in bed for an hour or two. Her labour was rapid, almost precipitate, and it was found necessary to administer chloroform in order to diminish the severity of her sufferings. Any attempt to make a vaginal examination was followed by the greatest distress and a marked increase in the violence of the pains. The child (a boy) was thin and ill-nourished, but otherwise well developed. He was brought up on the bottle and developed into a fine sturdy child with no neurotic tendencies, but finally died of diphtheria when about three years old. The mother regained health and strength rapidly after delivery, and did not seem to have been harmed by the attack of chorea.

June 30th, 1880—This patient having become pregnant again, developed chorea during the seventh month. It was not so severe as in the previous pregnancy, and was held well in check by strychnine and the ether-spray to the spine as before. She did not become so emaciated and was stronger at the time of her confinement. Labour was rapid (4¼ hours), the pains being violent and continuous, as on the previous occasion. The child (a girl) was medium-sized and well developed. She was brought up on the bottle and, with the exception of diarrhœa and febrile attacks while teething, progressed satisfactorily. The mother regained her usual health, and when the family removed to another part of the country both she and her child were well.

UPON THIRTY CONSECUTIVE CASES OF REMOVAL OF THE UTERINE APPENDAGES FOR SUPPURATIVE DISEASE.[1]

By T. Johnson-Alloway, M.D.

Assistant Professor of Gynæcology, McGill University; Gynæcologist to the Montreal General Hospital.

I wish this evening to bring before you my experience in some thirty consecutive cases of operation upon a condition of which it may truly be said that, provided the patients come to us in a reasonable time, we can be assured in each instance not only of relieving, but actually of saving a life.

Acute or chronic suppurative disease of the Fallopian tubes is a subject which has for ages engaged the attention and taxed the ingenuity of the most intelligent members of our profession in all parts of the world. Nothing could be done to arrest the disease, and patients passed, we may truly say in thousands, through the progressive stages of septic intoxication and pyæmia with, at the most, only a poor attempt at temporary relief in the shape of ever-increasing doses of quinine or of opium, with ineffectual counter-irritation in the shape of much blistering. When operation was first attempted the mortality was very large, perhaps on account of the fact that it was only attempted as a last resource, the disease having already progressed to a condition of diffuse suppurative peritonitis by rupture.

Now-a-days, when the general practitioner is able to diagnose a pus tube or tubal pregnancy, and this at an early stage, we can assuredly include operations upon the tubes as among the great triumphs of modern surgery. We can promise relief to our patients with freedom from future trouble, for with reasonable care operation leads to no ill effects.

In the thirty consecutive cases I now bring before you there was not a single death. Every patient recovered.

Of these cases I would wish to touch briefly upon the special points in connection with a few of the more important.

Case I.—The patient here was a stout lady 40 years of age, nulliparous, and weighing 225 pounds. She had been a great sufferer from pelvic pain for a long period. Her greatest trouble was, however, sciatica of the left lower extremity. Here the pain was constant,

[1] Abstract of paper read before the Montreal Medico-Chirurgical Society, November 1, 1895.

and treatment of all kinds for sciatica and rheumatism had been without effect. Upon examination the left side of the pelvis was found to be filled by a hard immobile tumour, the right pelvis being free. This hard mass was found at the operation to be a very large adherent tubo-ovarian abscess with thick fibroid walls. This tumour had to be shelled out with the hand, and so extensive and firm were the adhesions that the posterior layer of the broad ligament and the peritoneum covering the posterior bony wall of the pelvis were, of necessity, removed with the mass. As a consequence there was very free haemorrhage; this was controlled by ligatures, and a glass drainage tube was left in the wound for forty-eight hours. Recovery was uninterrupted; the highest temperature was 101° and highest pulse 110. The patient returned to her home in four weeks after the operation. She has been ever since (twelve months) free from pelvic pain and from sciatica. This last had clearly been due, therefore, to the pressure of the tumour upon the sacral nerves.

In this case, although the other tube and ovary were buried in dense adhesions, there being no active abscess formation, they were not interfered with.

The next case illustrates how much can be successfully accomplished in bowel surgery, even under the most trying circumstances.

Case ——.—This patient was a lady aged 27, and nulliparous. During the past two years she had suffered severe pain from pelvic inflammation with associated profuse leucorrhœa and menorrhagia. Lately she had experienced chills and fever, followed by prostration. She was, in short, a complete invalid. Upon examination the uterus was found fixed and there was a mass in the right side of the pelvis.

At the operation all the pelvic contents were found massed together and adherent, the omentum and coils of the intestines being firmly attached to the uterus, the tubes and broad ligaments. So dense, in fact, were these adhesions that the bowel gave way in several places upon the least pressure being made while trying to find the line of cleavage. The rents were repaired by the Czerny-Lembert method of suturing, and following upon this, further support was given over the rents by suturing over them the posterior face of the uterus and some of the broad ligament at either side. Both tubes were found filled with pus and much distended; they were removed. Although the patient had to remain in hospital for three months and had a very up-and-down course, the abdominal wound remaining open for a long time, when seen a year later she was the picture of robust health

In this case there was so little, if any, sound bowel tissue surrounding the tears wherein the sutures could hold that I cannot but

regard the plan of suturing the bowel to the healthy portions of the broad ligament as the procedure which ensured the closure of the intestinal wounds. Although, as I have stated, the patient passed through a slow and anxious convalescence and the main wound was long in closing, and although there was extensive suppuration in the track of the drainage tube, there was at no time escape of fæces or of gas from the wound. In this case, as a further complication, six months after the operation there was what appeared to be metastatic inflammation in the left knee-joint, necessitating forcible extension and fixation under ether (by Dr. Bell).

In another case, that of a young woman of 21, complaining of the usual constant pelvic pain, and having a temperature varying from 99° to 104° for four days prior to the operation, examination revealed a mass in Douglas's pouch, with exquisite tenderness over the whole pelvic floor. Operation showed the mass to be a large distended pus tube, containing greyish-red purulent fluid. The patient was discharged three weeks after operation.

The last case that I would bring before you is one that is typical of 90 per cent. of the cases of pyosalpinx. The case is that of the daughter of one of our employées in the Montreal General Hospital. She has been married ten years and is childless. She has been seriously ill for about ten weeks with severe pelvic pain, great dysmenorrhœa, profuse menorrhagia, recurring every two or three weeks, excessive muco-purulent discharge, great prostration, anorexia, loss of weight, hectic, chills and fever, with church-steeple temperature and rapid pulse.

There was headache, dry tongue, and a general nervous sense of apprehension. There was some tympanites, with great pain on pressure over the abdomen.

Upon examination the uterus was found fixed, and attempts to move it caused acute suffering. There was a mass on either side of and surrounding the cervix in Douglas' pouch. Cases such as this demand immediate attention. Here I found, as had previously been suspected, a ruptured pus tube. Both tubes contained pus; that on the left side had undergone recent rupture. After removal of the appendages the cavity was irrigated with sterilized warm water and then closed, a glass drainage tube being left in for forty hours. Here the temperature, which previous to operation had been 104°, dropped to 99°, and has not risen during the following ten days.

My experience in these cases has led me to the following conclusion:

1. An exploratory incision in cases of doubt, when performed with

proper asepsis and by skilled hands, cannot involve any risk to the patient and may save her life.

2. The fullest success is gained by treatment in the hospital as opposed to the private house. I here but confirm the experience of all my confrères.

3. I am led to favour the use of the glass drainage tube in some special cases, rarely leaving it in the wound more than forty-eight hours.

4. In desperate cases of otherwise uncontrollable hæmorrhage I am convinced of the great value of gauze packing of the pelvis.

5. Where the abscess process involves the proximal portion of the Fallopian tube and its intramural continuation, I have found that excision of the affected horn of the uterus is associated with the best results.

6. Although in such cases the uterine wall is throughout degenerated (cloudy degeneration) and is œdematous, friable, and in appearance like lard, and one is often tempted to extirpate the whole organ, it is quite unnecessary.

7. Where pyosalpinx has led to extensive adhesions and tissue destruction, intestinal obstruction is liable to occur in a certain percentage of cases as a consequence of the secondary post-operative adhesions. I have had two such cases. In one there was such extensive adhesions, that it was impossible to remove the tube without also removing the sigmoid flexure. I therefore tapped the pus sac per vaginam. The patient recovered perfectly, but I would not recommend such a difficult and, I hold, unscientific procedure, save in such cases as this, where the abdomen is first opened and the direction of the trocar determined by the assistant.

8. It is unscientific, and worse, it is unpardonable to follow the French procedure and remove the uterus when it is not involved. The uterus should, wherever possible, be allowed to remain, as it forms the keystone of the pelvic arch and tends to prevent a hernia in the time to come.

NOTES ON THE EXAMINATION AND MEASUREMENT OF ATHLETES.[1]

By R. TAIT MCKENZIE, M.D.

Medical Examiner and Instructor in Gymnastics and Assistant Demonstrator of Anatomy at McGill University.

This subject is perhaps rather an unusual one to be offered for discussion to a society such as the one which I have the honour to address. Nor is the title quite a true one, for many of the men examined could hardly by any stretch of imagination be termed athletes, but I have thought that a short account of the work being done in this department at McGill would be of interest, and possibly of some small value to all members whose practice brings them in contact with life insurance or with the training of children and young men.

Although this year's Calendar is only the second in which we read that "all students desirous of taking part in football matches, or otherwise engaging in violent athletic contests, must pass a medical examination to be held under the direction of the Superintendent of the Gymnasium," still that clause is the result of a strong feeling existing for years, that such a regulation was necessary to direct the student in his athletic sports and to prevent unsound men from injuring themselves, ignorantly in most cases, yet sometimes beyond repair.

McGill may be the first Canadian university to seriously cope with this problem, but the most successful and systematic work among students has been done in the great American institutions of learning.

Amherst started a system of compulsory physical examination and education as far back as 1861, and Dr. E. Hitchcock began taking certain measurements, that men might see their own progress during their college course, but with the ulterior object of getting at the measurements and physical characteristics of the typical American student. There the medical aspect of the work has been extended to lectures on personal hygiene to freshmen, and to systematic training for all the students of the college.

In Harvard the same work was inaugurated in 1879, under Dr. D. A. Sargent, whose anthropometric conclusions were embodied in two statues showing the typical American student, male and female. Yale, Cornell, Leland Stanford, Jr., and others require a physical as well as

[1] Read before the Montreal Medico-Chirurgical Society, November 15, 1895.

a scholastic examination of students after matriculation, whether they intend to take part in athletics or not.

Wellesley, the most prominent of the American ladies' colleges, has carried on the examination and measurement of all its students for some years, with the idea of following the effects of systematic exercise on health and development in young women.

In Oxford last summer I saw a series of records taken by Dr. Horatio Symonds, showing the measurements and strength of the university crews for the past few years, with notes on their physique and health, and I am informed that some system less exact and rigid is also in vogue at Cambridge.

It is now little more than a year ago that the Committee on Grounds and Athletics of McGill decided to make it compulsory for all men, before entering athletic sports in any form, to present a medical certificate of soundness. As this work came within my department I set myself to design a form that would include as much as would be of value and at the same time would not be too long or cumbrous.

This form was printed and this year revised in the light of a season's experience.

I will briefly review one of these blank forms, which every man must have filled before he is given a certificate.

The student fills up the first part. The questions in it relate principally to family history and past health, and the answers are, of course, strictly private. After the name and date of birth the first question is, "What work or exercise are you accustomed to take?" This is to get an idea of the man's past life and habits, indoor or outdoor, active or sedentary. The next asks about any strong resemblance to either father or mother, that hereditary taints may be more easily recognized; the next one taking up the cause of death of the parents, which, together with one that relates to the frequency of the occurrence of certain diseases in the family, such as rheumatism, scrofula, tubercle, and neuroses, concludes the family history.

The personal history begins by asking if there has been any serious illness that required rest in bed for two weeks or more, for a young man is more apt to remember that fact than any other in an illness.

The next two take up the condition of the eyes and ears. The digestive system is included in four questions, the first on digestion, the second on occurrence of bilious attacks, the third and fourth on constipation and diarrhœa.

The respiratory system has one question on the presence of nasal catarrh. The question "Can you breathe freely through each nostril?"

is intended to find deviations of the septum or other obstructions in the air passages. The tendency to take cold and its mode of onset and progress are taken up in the next question, "Is a cold most likely to locate in your nose, throat or lungs?"

The most important part of the personal history relates to the heart and circulation, and their condition is ascertained by questions on palpitation, the frequency of cold extremities and tendency to syncope.

The only nervous symptoms inquired after are headaches and insomnia, and the last two questions relate to the use of alcohol and tobacco.

The form concludes with an open question, asking if there is anything not covered by previous questions that should be known. One young man added, as something the examiner might overlook but ought to know, "I am tall, thin, but tough."

When the student has filled this form he comes to the physical examination. First the heart is carefully examined, the patient standing, the shape of the thorax noted, flat, square or round, also the abdomen, flat, round or protruding. Then the condition of the lungs, the presence of skin eruption, amount of fatty tissue, and the condition of the nervous system, or rather the temperament of the man, sluggish, active or neurotic.

After the condition of the eyes, ears and nose has been noted, the man stands straight with heels together, and the shoulders are observed as square, sloping, stooped or uneven.

The legs are straight, *genu valgum*, or *varum*, and the spine is examined for actual curvature, or for exaggeration of the normal curves. Then the habitual posture is noted, erect or careless, weight on right or left foot, for here we often get an explanation of uneven shoulders and protruding flabby abdomen, or the occurrence of what Roth aptly calls the Gorilla type of figure, abdomen protruded and chest sunken.

The condition of the muscles is noted next, flabby, soft, firm or hard.

Then the groups are noted in detail as being very poor, poor, fair, good, or very good. After this inspection the pulse, standing, is taken, the patient then runs 100 yards at top speed, and the pulse and heart are examined again.

He is now ready to be measured, and after getting his age, the net weight is taken, then the height and sitting height to get the proportions of trunk to legs. Breadths are taken, with a sliding rule of neck, shoulders, chest, waist and hips, lengths of the two segments of the upper extremity, the forearm being taken from the olecranon

to the middle metacarpo-phalangeal articulation, as representing more truly the lever that is used in lifting by the closed hand or fist, than would the finger tip. Lengths of femur and tibia show proportions of the lower extremity and have an important bearing on power and therefore on athletic ability, as will be seen later.

From the relation of the depth of the abdomen to chest we find the condition of the man. The girth of the chest is taken at two levels, the upper above the nipple, and the second below the pectoral line; both are taken during forced inspiration and forced expiration. The upper one is peculiarly liable to fallacy from the tricky contraction of the pectorals and latissimi dorsi, so that the lower is more truly an expansion measurement. The other girths are those of the limbs, taking both muscular and bone measurements, as in the calf and knee. On the relation of bone to muscle girths will often depend the prognosis as to musucular development. A very large instep will show a tendency to flat-foot.

The measurements conclude with a test of the lung capacity by means of the wet spirometer.

These measurements are taken again in the spring and repeated from time to time during the students' course.

In all, 204 men have presented themselves for examination and they have been divided into three main classes:

Class A, the sound.

Class C, the unsound, and

Class B, the specials. who, although permitted to enter certain forms of athletics, require special work for special defects or weaknesses.

Those whom I designate as sound numbered 139 out of 204, and a few facts about these men may be of interest.

The pulse rate, standing, averaged 75·6 and after exercise 135. Keating gives the normal as 72, but the slight increase is probably due to the many who, from exercise or excitement, had a quickened heart, not to speak of their youth. The lowest rate observed was 50 and the highest 100. After a 100-yard dash the rate rose to an average of 135, the lowest being 100 and the highest 160. If the pulse became irregular they were put into class B or class C. The chest expansion varied from 1·5 to 4·7 inches with an average of 3·2, and the lung capacity varied from 175 to 400 cubic inches, average 251, a little below the average Yale student, as shown by a chart of their measurements designed by Dr. Jay Seaver.

Although the spirometer test is called lung capacity, it should really be thoracic mobility, and although it varies with the shape of the

chest, being largest in flat broad chests, it at least shows the possibilities of the thoracic walls to cope with forced respiration.

The measurements of the relation of bone to muscle girths show the possibilities for muscular development. Small bones and large muscles would mean little improvement, and the reverse would show great possibilities.

Three types of figure predominate and shade insensibly from one to the other. The stocky, short, heavy type, with large neck, sloping shoulders and long body, very short legs and heavy bones, with tendons short, compared with the muscle bellies. These are men of great vitality and muscular strength, who excel on the football field.

The second, tall, square-shouldered, flat thorax and abdomen, body and legs evenly proportioned, but with very long thighs and short legs. These are the runners, vaulters and jumpers, while the third have short bodies, long limbs, thighs short in comparison with the legs and small bones. These are men of low vital power and of poor potentiality, physically speaking.

The special cases in class B, 49 in number, were so called from special defects that required correction, but did not exclude them from athletic sports. These defects were chiefly circulatory and postural.

Taken as a class, they were inferior in both heart and lungs, for the pulse rate averaged 78·7 before and 138 after exercise, an increase of 3 and 4 beats per minute; the expansion was slightly less, and the capacity 7 cubic inches less than the average in class A.

The cardiac disturabnces were, so far as could be ascertained, functional only, and were principally intermittence or undue rapidity of the pulse. If the pulse rate was above 100 before or 150 after exercise he was included in this class. Of the postural defects, a drooping or lowering of the right shoulder was found in 13 cases. This was associated with actual scoliosis in five cases. In only one case was the left lower than the right.

Six men had pronounced lordosis, and seven showed the gorilla type of figure, stooped with protruding abdomen.

These defects were by no means confined to weak or sickly men, four of them played this year on the football team, and others showed up well in other forms of athletics.

Thus over 12 per cent. of all men examined had either drooping of one shoulder or actual deviation of the spine more or less severe. This would indicate that young boys with slight curvatures do not "grow out of them," as many are inclined to believe, but that an early, slight, curable curvature tends to become, later on, a permanent deformity.

Irregularities of the circulation were seen in 14 cases; irregular or intermittent pulse after exercise, not bad enough, however, to warrant condemning a man, occurred in nine cases. A soft murmur was heard in the pulmonary area without other symptoms in two cases and two more had a history of frequent epistaxis after exertion.

In five cases there was a strong family history of tubercle on one or both sides, and when the personal resemblance to the parent on the affected side of the family was great, men were strongly advised against violent or prolonged athletics. Men of that class nearly always have such a finely adjusted and willing nervous system that they are much more apt to overdraw their vital capital and lay themselves open, by the after exhaustion, to their besetting disease.

There were several cases of psoriasis and acne, one of boils and anæmia. One man, neurotic, stooped and troubled with cold extremities, was advised regular exercise, but not violent athletics.

A fair sample of a man of this class is J. T——. He resembles his father, who died of phthisis. Other members of his father's family died of the same disease. He has been accustomed to violent exercise. Examination shows a pulse rate of 156 after exercise, no fat, high square shoulders and flat chest, fine thin skin and red cheeks. He is otherwise sound. Capacity 286, expansion 3 inches. This man easily becomes over-trained and is always exhausted after playing. During a game, however, he is one of the best players of football at McGill. He is permitted to play football, but is advised against it and recommended milder forms of exercise. The greatest care has been exercised to curtail in no way a man's personal liberty beyond advice and reason, unless the condition absolutely warrants it.

In the third class (C) the men are referred as unsound and are not permitted to take part in athletic sports, although in many cases recommended to take exercise under supervision.

Here the average pulse rate (88) rises nearly 13 beats above class A; after exercise it rises 15 beats, averaging as high as 150. Expansion falls and capacity is 37 cubic inches less. These figures, although not conclusive, are significant of the predominating weakness of the heart and lungs in men of this class.

Five had valvular disease of the heart, and in another case the diagnosis was doubtful. Seven had fast, weak and irregular heart action after exercise, the pulse in some cases being most difficult, if not impossible, to count correctly.

Three had uneven shoulders in addition to other defects, one had lordosis, while one man, a candidate for football, had an inguinal hernia, and one inflammation of the metatarso-phalangeal joint of four years' standing.

The mere statement of the cases will show the grave dangers into which these young men would unwittingly have run. One could safely say that not one of all the sixteen in this class could, with impunity, play in a football game, where a man has to sustain the shock of weight and momentum often at a disadvantage, when the breath must be held for the lift, and the blood dammed back on the over-worked heart, while the thoracic and abdominal walls are strained and tried to the utmost.

Here is a case for illustration: C. D., accustomed to indoor work, resembles father; tuberculosis on paternal side; four years ago he had two hæmorrhages from the lungs. Cold usually goes to the lungs. Suffers from headaches. Thinks "his heart is weak." Pulse, standing, 108, after running 168, weak and fluttering. Muscle tone flabby and degenerate, with fat abundant. Expansion less than two inches, capacity 200. Such a man has no business in athletics.

Cases of valvular disease with good hypertrophy and compensation are advised to take regular exercise, but it is of such a nature as to avoid any prolonged fixation of the thoracic walls or increase of intra-thoracic pressure sufficiently to embarrass the free action of the heart or lungs. Thus these men are told to avoid parallel bars, wrestling, heaving of heavy weights, or the horizontal bar, while they can with impunity use the barbells or Indian clubs, and even indulge in a sparring bout, or cycling in moderation.

By keeping these cases under observation for some years, valuable information may be obtained as to the effect of exercise on such conditions. Already the marked improvement in heart action and pulse rate under favourable conditions, extending over a year only, is well illustrated in a case to be mentioned presently.

I will conclude by quoting the essentials of some of the case reports now on fyle, that they may speak for themselves and at least be suggestive of the possibilities of this work, if nothing more.

In class A the results showed principally changes in the muscular development, and one case illustrated beautifully the condition known as "over-training." Last year he was examined when in good condition for athletics. Age 23, weight 159, waist 30·5, chest 34·5 to 37·5, capacity 320. This fall, in weight he had lost 2½ lbs., waist ½ inch; chest 33·7 to 37·3, while his chest mobility showed a difference of 10 inches on the wrong side. He had grown nearly ½ inch, but was highly nervous, with drawn, almost haggard face. Advice was perfect rest for two weeks.

Another, a bicyclist, aged 18, weight 138, increased 3½ lbs. in weight and nearly 1 inch in height. This alone would mean little were it not

that this was a lengthening of the body, a good sign for endurance. Waist increased ½ inch, expansion increased 1 inch, thighs over ½ inch and lung capacity slightly.

To summarize, he is taller from growth of body, not legs; waist bigger from muscular development, not fat; the thighs are bigger. The advice to him is that he will, with his increased strength, be able to ride a machine that is geared higher, *i.e.*, more distance covered by each revolution of the pedal. Another, a football man, pulse last year 78 to 142, this year 64 to 128, capacity increased 16 inches. Advice, "Go on, you're all right." Another pulse rate after exercise fell from 158 to 124 in a bicyclist.

One man was referred to class C last year because his pulse was 80 and 150, but very intermittent. This year he is put in class A, with the figures at 72 and 144, strong and regular; this after a year spent in the open air. He now plays in the scrimmage.

For cases in which corrective exercises are indicated there should be a special hour, and exercise should be prescribed to meet the indications of each case; by no means a simple affair. These prescriptions should be demonstrated to the student and applied with regularity, and measurements and tracings taken from time to time to note the effects. Thus only can reliable deductions be drawn and a system of treatment be worked out. This is being done at the gymnasium now in a very imperfect and partial way, but limited time and opportunity and apparatus forbids a more thorough investigation at present of this field, hitherto almost untouched.

Much remains to be done. Such work, for example, as determining the physical type of man that will succeed in certain feats, with the anatomical and physiological and, I may add, the psychological reasons for such success; the effect of different forms of exercise on the heart and lungs; the best forms of corrective work for lateral curvature of the spine and similar deformities.

These, with many other problems that will at once suggest themselves, still await solution by the only method by which it will ever be reached—careful, patient and prolonged discriminating observation.

Clinic.

CLINICAL LECTURE ON THE SURGICAL TREATMENT OF PERFORATED GASTRIC ULCER.

DELIVERED AT THE MONTREAL GENERAL HOSPITAL ON THE 6TH OF NOVEMBER, 1895.

By GEO. E. ARMSTRONG, M.D.

Assistant Professor of Clinical Surgery in McGill University; Surgeon to the Montreal General Hospital: Attending Surgeon to the Western Hospital.

The subject of gastric ulcer is more fully treated in medical than in surgical text-books. It is with the complications and sequelæ of gastric ulcer that the surgeon is especially interested. I will not enter into a discussion of the etiology, course and treatment of ordinary gastric ulcer. but I may say that it is found in the stomach and in the duodenum as far down as the point of entrance of the common bile duct. It may be occasionally due to traumatism or corrosive poison, but the opinion seems to be pretty general that probably in the majority of cases it is due to a deficient blood supply to a small area, and that this spot deprived of its blood supply is digested or destroyed by the action of the gastric juice. As a rule when the condition is recognized and submitted to proper treatment the ulcer heals, and unless the process has been very extensive the resulting cicatrix causes no permanent disability. But unfortunately it occasionally happens that serious complications arise that jeopardize the life of the patient. For example, if the ulcerated surface is extensive the stomach may become so contracted and deformed during the healing process that impairment of function results. If the ulcer is situated at the cardiac or pyloric end stenosis may follow and operative interference be required to remove the obstruction and allow food to enter or leave the stomach.

Another alarming complication is hæmorrhage. This is seldom fatal, and only when it continues to recur to such an extent as to threaten life—as evidenced by collapse and hæmatemesis and melæna—would the question of operative interference arise. In two such cases, however, Küster, of Marbourg, has opened the anterior wall of the stomach, cauterized the ulcer and then performed a gastro-enterostomy. Both cases recovered.

A third complication, which unless relieved by surgical measures, is fatal in about 95 p.c. of the cases is perforation of the wall of the

stomach or duodenum, permitting the contents to escape into the general peritoneal cavity, and there lighting up a fatal septic peritonitis.

Although gastric ulcer is more common on the posterior wall of the stomach than on the anterior, perforation occurs more frequently on the anterior wall. The reason for this is that ulcers on the posterior wall more frequently cause adhesions, especially to the pancreas, and thus a perforation into the general peritoneal cavity is avoided. Another reason why perforation is more common on the anterior wall is that the symptoms of a gastric ulcer in this situation are less marked —which means that the ulcer is less readily recognized, and therefore less frequently subjected to rest and proper dietetic treatment. It is very important that you should be able to diagnose a perforation of the stomach when it occurs. In fact the life of the patient depends upon an early diagnosis and prompt closure of the perforation. The symptoms are not many, but they are urgent and characteristic. They have been very clearly detailed to you in the report, which you have just heard read, of this case before you. When an anæmic young woman, with a history of indigestion, is suddenly seized with symptoms of acute peritonitis, you should at once wake up to the fact that you may be dealing with a case of perforating gastric ulcer. This young woman, aged 20, was admitted to the Montreal General Hospital about 6 p.m. on the 9th October, 1895. On October the 8th, about midnight, she had been suddenly seized with intense pain in the epigastric region. She could put the end of her finger on the spot where the severe pain first appeared, and where the greatest tenderness to pressure still remained. During the night the pain spread along the left costal margin and then over the whole abdomen, which had already, 18 hours after the onset of pain, become very much swollen. The pain was of a sharp shooting character, becoming more dull toward morning, but at once rendered acute by any movement of the body. She had vomited several times during the night. Her pulse was 118, of fair quality, rather high tension. Temperature 103° F. Respiration, thoracic, quick and shallow. She gave a history of having been treated in the out-door department of the hospital during the past summer for indigestion. She had suffered from flatulence and vomiting after meals, followed two or three hours later by pain in the epigastrium, which was relieved by taking food.

Dr. Byers, the House Surgeon who admitted her, at once suspected the condition present, and summoned the staff for a consultation. When I saw her she was lying in bed with an anxious expression of countenance. Pulse, temperature and respiration as noted above. On making a physical examination the abdomen was found mode-

rately distended. On asking her where the pain was most severe she put her finger on a point about two inches below the ensiform cartilage and a little to the left of the median line. On palpation, the abdomen was everywhere tender, but moderate pressure could be borne over the centre in the umbilical region, over the hypogastrium on both sides, and over the situation of the appendix, but over the point where pain was first felt the slightest touch caused the patient to cry out. In perforative peritonitis there is always a point of maximum tenderness and that point is over the seat of perforation. In appendicitis it is over the appendix at the so-called McBurney's point, or if the appendix is turned up behind the colon it may be in the right loin. In perforating gastric ulcer it is over the stomach. Pain may be more generalized, but the point of maximum tenderness is always over the seat of perforation and is the most important and reliable guide by which to localize the lesion.

As far as I could judge about half the liver dulness had disappeared. The lower half of the normal area of liver dulness was tympanitic. The presence of a tympanitic note on percussion over the region of the liver is very suggestive of a perforation of some part of the alimentary canal and the escape of gas into the peritoneal cavity.

The urine was high coloured, sp. gr. 1030, acid reaction, no albumen, no sugar, urea grs. xiii. to the ounce.

The history and symptoms rendered the diagnosis of perforated gastric ulcer pretty certainly correct.

The prognosis was that if left alone the girl would certainly die in 24 to 48 hours of toxæmia from septic peritonitis. The indication clearly was to open the abdomen, close the hole in the stomach, and remove so far as possible all matters that had already escaped, together with the serum or sero-pus already formed. And it was important that this should be done at once, before the infection and inflammation of the peritoneum had gone so far that a favourable result would be unattainable. Twenty-two hours had already elapsed since perforation had taken place. Fortunately the matters escaping from a hole in the stomach are not as virulent and irritating as those escaping from the intestine, and I think that this is the reason why peritonitis from an escape of stomach contents is less rapidly fatal than peritonitis caused by escape of intestinal contents, rather than, as Mr. Treves states in his Lettsomian lectures, to a difference in the character of the peritoneum itself in the upper part of the abdomen.

The girl was taken to the operating room at once and I made an incision in the median line between the ensiform cartilage and the umbilicus, as you see by this cicatrix. As soon as the peritoneal

cavity was opened, air and sero-purulent fluid escaped. The stomach was carefully packed around with sterilized gauze to prevent further escape into the peritoneal cavity and the opening in the anterior wall of the stomach readily discovered. It admitted my forefinger easily. The edges of the opening were, I should say, an inch or more thick. The greater part of the thick edge proved to be lymph. Now, one cannot stitch lymph. It will not hold a suture. The suture cuts out as soon as any tension is put on it. I had, therefore, to gently peel off the thick layer of lymph that I might get sound stomach wall to hold the sutures. On removing the lymph, I found that the ulcer had been evidently closed for a time by it, and that escape of stomach contents had occurred only when this reparative material had failed in its object, and that the ulcer was a very large one. When it was drawn out with its edges together the sew line measured 3½ inches. The edges were everted, and the mucous membrane had become adherent to the border of the rent throughout its entire extent. I closed the opening in the manner that you have seen done in wounds of the intestines, that is, first a continuous suture passing through all the coats of the stomach wall. This I believe to be an important part of the suturing. I then inverted the suture line and passed a continuous Lembert suture from one end of the rent to the other. If this is done neatly and carefully, it effects a closure absolutely water tight and air tight. I closed a typhoid perforation in this manner the other day, and, although the patient died about three hours after the closure, Dr. Johnston, at the post-mortem, tested the closure and found it quite impervious to water or air. After the closure was completed I wiped out all the fluids and lymph that could be reached, passed a glass tube surrounded by iodoform gauze down to the suture line, passed another small strip of the same down the calibre of the tube and closed the incision with two rows of sutures, catgut being used for the deep layer and silk-worm gut for the skin. I then made a small opening in the median line, midway between the umbilicus and the symphysis pubis, just large enough to admit a ½ inch glass drainage tube, which I passed down to the bottom of the pelvis. It was well that I did this, otherwise I might have lost my patient, for there escaped through this tube fully 20 ozs. of yellowish sero-purulent fluid. The tubes were removed on the fifth day. The patient has made an easy recovery.

Enemata of peptonized beef tea, with half an ounce of brandy, were given every four hours for seven days, and were well retained. During the first three days nothing was allowed by the mouth except a teaspoonful of water every half hour to allay the thirst. On the

3rd day she was given an ounce of peptonized milk every two hours. This was gradually increased day by day.

On the fifteenth day she was given custard and a softly boiled egg. Then milk toast and arrow-root. At the end of the third week fish and chicken were allowed, and she now takes three pretty good meals daily.

This patient on the left was operated on by my colleague, Dr. Kirkpatrick, about a year ago. She made a perfect recovery and has remained in perfect health ever since. So far as I know these are the only cases of perforated gastric ulcer that have been operated upon in Montreal, and as you see they have both fortunately been successful.

In his Ingleby lecture Barling has reported 37 cases by various operators, with 13 recoveries. Several operations for perforating duodenal ulcer have been reported with, so far as I know, only one recovery.

Closure of a perforated ulcer on the posterior wall of the stomach is more difficult. Probably the better plan would be to approach it through an incision in the anterior wall of the stomach. In that case the Lembert suture would be applied first and the through and through suture afterwards. The opening in the anterior wall of the stomach being closed in the same way that I closed the opening caused by the perforating ulcer.

Clinical Reports.

A CASE OF MALIGNANT INTRABRONCHIAL GROWTH,

Associated with a Misleading Train of Symptoms.

By J. G. Adami, M.A., M.D.

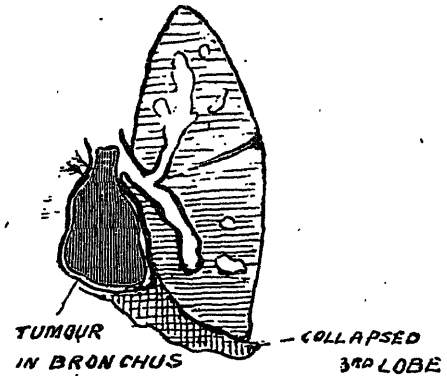
Professor of Pathology, McGill University, Montreal.

I am indebted to Dr. A. G. Nicholls for the clinical notes of this case.

The patient, a woman of 50, died four hours after admission into Dr. Stewart's ward, and thus there was no possibility of making full observations upon her condition *intra vitam*. She had, however, been twice to the out-patient department of the hospital. A year ago last summer she presented herself at the hospital with what was considered to be commencing tuberculosis of the right apex. She did not reappear again until February 21, 1895, then the right apex was found dull in front, with blowing breathing and numerous moist rales. Behind over the upper half of the right lobe there was a similar condition. In the lower half of the lung there was diminished resonance and feeble breathing. Since then the patient had not returned to the out-door department. Her sister stated, however, that in the meantime she had had several attacks of hæmorrhage from the lungs. It will thus be seen that the history dated back for several months and that there was a curiously suspicious tubercular symptomatology, with cough, shortness of breath and hæmoptysis. On admission the patient was apparently very ill, urgent symptoms having come on, at the most two days before admission, with shivering feeling, but no distinct rigor; severe headaches and much coughing. She was a heavily-built woman, somewhat anæmic, with cyanosis of the lips, face and finger tips, which were distinctly clubbed. The respirations were short and hurried, 44 per minute. There was intense dyspnœa, over the right side expansion was very much diminished, the whole of the right side was dull in front and behind, with slight resonance only behind and below. The left lung was hyperresonant. On auscultation the breath sounds on the right side were cavernous in character in front and over the upper half of the lung behind. They were tubular in the axilla and diminished below. The expectoration was thick, viscid, yellowish and muco-purulent. The breath sounds on the left side were exaggerated. The expirations were prolonged.

The pulse was 120, of moderate tension and regular. There were no murmurs, neither was the second sound exaggerated. The condition of the other parts, determined clinically, does not call for remark. With such a history and with such symptoms there is little wonder that in this case, in spite of the stout build of the patient, the provisional diagnosis was made of pulmonary phthisis, with cavitation of the apex and hæmoptysis, and with generalized tuberculosis of the right lung. The condition of the left lung was evidently that of compensatory emphysema. That the patient was moribund is, I think, an ample excuse for failure to confirm the diagnosis by examination of the sputum.

At the autopsy, however, this most reasonable diagnosis was found to be completely astray, save that the left lung was very voluminous and that there was present a generalized compensatory emphysema. This, however, was not all that was present; at the edge of the lower



Diagramatic representation of the relationship of the Intrabronchial growth to the Bronchi.

lobe and along the the diaphragmatic surface were areas of lobular consolidation relatively firm and of greyish-red colour. There was in addition a muco-purulent bronchitis, evidently, from the presence of slight reddening and of red corpuscles in the contents, of an acute character. Cultures from these areas of consolidation gave the diplococcus of pneumonia. Here, then, the very position of the acute inflammation in this left lung spreading immediately over the diaphragm was such that almost inevitably in the examination of the moribund patient it would fail to be discovered. There was no apical tuberculosis, nor were there any signs of tuberculosis elsewhere throughout this lung. Turning now to the right lung, this presented a condition of very great interest. Upon opening the thorax the organ was found very full and firm, firmer than hepatized lung; it was surrounded

generally by very firm adhesions, so firm that laterally and posteriorly the parietal pleura had to be removed at the same time. The organ weighed 1025 grms. This fullness affected the upper and middle lobes only. These two occupied almost the whole of the pleural cavity, the lower lobe was collapsed and adherent to the diaphragm. While the thickening of the visceral pleura was great at the apex, there was no sign there of puckering or of obsolescent tubercles.

On section the organ cut very firmly, it was of grey colour with distinct enlarged fibroid bands. The condition of the two upper lobes was that of chronic interstitial pneumonia. They presented further most marked generalised bronchiectasis, affecting both bronchi and bronchioles. As above remarked, the dilatation was generalised and not saccular to any extent. These dilated passages contained fairly fluid muco-pus of salmon colour, not fœtid. Their walls were much injected.

Upon dissecting the main bronchus of the lung a very uncommon condition was discovered; at the point of division into the bronchi for the three lobes a dirty grey rounded mass with ulcerous extremity was seen, almost completely filling the lumen. Upon further dissection this mass was found to be a cylindrical truncated projection or outgrowth along the main bronchus, 16 mm. in diameter, by 16 mm. long, from a large soft, flesh-coloured tumour, lying in a smooth walled sac in direct communication with the main bronchus, which sac, from its anatomical relations, could be none other than the bronchus of the collapsed lower lobe. With expansion, the cartilages had become atrophied and unrecognizable to the touch.

While fibroid phthisis or interstitial pneumonia is in itself a most frequent cause of bronchiectasis, it was clear from the arrangement of the parts that the outgrowth of the tumour into the main bronchus had acted as a ball valve, permitting entrance of air into the first and second lobe during inspiration, and occluding the bronchus during expiration. Then here there was an additional mechanism leading to dilation of the bronchi.

While the tumour, which was 7.5 cm. long by 5.3 cm. across, was in the main free in the dilated bronchus, it was firmly adherent below and to the inner side. The peri-bronchial glands lying to the front of the main bronchus and growths were singularly large, the largest being 4x3 x3 cm., and having in its centre what appeared to be a secondary growth. No other secondary growths were recognizable elsewhere.

Microscopic examination of the lung showed a most interesting condition of interstitial pneumonia, with numerous large cells within the alveoli, which varied in size and appearance from that of the ordinary

so-called "dust cell" to large polynuclear pigmented cells. I have never seen so large a number of this form of giant cells. The tumour, on the other hand, was found to be of a type presenting great difficulty in diagnosis; while possessing an alveolar arrangement and an appearance under the microscope remarkably like carcinoma, further study reveals a suspiciously sarcomatous character in the part of many of the cells filling the alveoli. Following Orth and the majority of recent observers, it may be well to describe it as a sarroma of the bronchial wall—although almost as many authorities have called such tumours cancerous. I may later revert to the finer details of the growth.

This specimen then, is interesting, not only from the singular position of the primary tumours, but also from the clinical symptoms to which the growth gave rise. The apparent cavitation, it is seen, was due to the very extensive bronchiectasis. The hæmorrhage and hæmoptysis to the ulceration of the free end of the growing tumour, the dullness over the lung in general, not to any general tuberculous extension, for there was no tuberculosis anywhere, but to a condition of general dense pleural adhesions with associated interstitial pneumonia.

STRANGULATED HERNIA—OPERATION—RECOVERY.

By C. L. Cotton, M.D., Cowansville, P.Q.

I was called to see Mrs. S., æt. 50, on the morning of October 25th. She stated that she had first noticed a hernia about two years ago, that she had tried a number of trusses but had not been able to wear any of them, probably from not being properly fitted. At various times the hernia had caused her much pain, and once or twice vomiting, but she had always been able to reduce it. I found a left oblique inguinal hernia of moderate size and very tense. On the evening of the 23rd October, about forty hours previous to my visit, the hernia came down after some extra exertion, and she had not been able to reduce it. Within a few hours vomiting began and continued until I saw her. After finding that she could not reduce it, she took a variety of strong purgative medicines. I found her vomiting continuously a foul smelling stercoraceous matter, which, from her description, had become so during the preceding night. The hernia was very tense but not particularly tender. She complained of some tenderness about the umbilicus.

Finding that I could not make any impression on it by taxis, I sent for assistance and prepared her for operation. When she was completely under chloroform, I again attempted to reduce the hernia, but failing, I immediately proceeded to cut down upon the sac. Being suspicious of the condition of the bowel from the length of time it had been strangulated and its very tense condition, I immediately opened the sac. The gut was of a dark purple colour but glistening and apparently possessed vitality. The sac also contained a large piece of omentum. After relieving the constriction, both bowel and omentum were easily returned. I used a few strands of silk for drainage, and dressed the wound with boracic acid and a pad of gauze. The vomiting ceased immediately after the operation.

The patient passed a somewhat restless night, and the following day there was a slight elevation of temperature—99.4°. The abdominal tenderness had disappeared. From this time onward the patient made an uninterrupted recovery. There was no rise of temperature. The bowels moved naturally on the morning of the sixth day, and on the afternoon of the same day I removed the dressing and found the wound thoroughly united, except where the silk drainage had been. I removed the sutures and the silk. Two days later the entire wound was firmly closed. On the fourteenth day I fitted her with a truss and allowed her to get up.

CARDIA-DEXTRA.

By G. Gordon Campbell, M.D.

Demonstrator in Medicine, McGill University; Assistant Physician, Montreal General Hospital.

J. C., aged 17, was admitted to the Montreal General Hospital, under Dr. Shepherd, on May 6th, 1889, suffering with scrofuloderma of the right cheek. The patient has always been healthy and has never had any serious illness, with the exception of an injury to the chest occurring at the age of four, in which he believes the sternum was fractured, and attributes to this cause a deformity of the lower part of the right side of the chest. His father, who was in the hospital at the time, corroborates his statement.

The patient is about 5 feet 9 inches in height, fairly well built, somewhat anæmic, with blue eyes and clear, smooth skin of the ordinary scrofulous type.

Physical examination reveals a very long and narrow chest with a very deep dip of the lower ribs and a very acute xiphoid angle. Over a space about two and a half inches square involving the fourth, fifth and sixth ribs at their junction with the sternum on the right side is a slight bulging of the chest wall. The nipple is situated on the fourth rib and the xiphoid angle is opposite the fifth rib. On percussing the chest there is an area of absolute dulness to the right of the sternum. This is bounded above by a line drawn from the centre of the sternum opposite the fourth rib to the right, along the upper border of that rib for three and a half inches, thence vertically downwards to the sixth rib in the nipple line, thence to the seventh in the axillary line. The left border extends vertically downwards just outside the median line to the fifth rib (left), whose course is followed for a couple of inches, then taking a sharp curve to the right again it joins the lower limit formed by a line an inch below and following the direction of the lower margin of the ribs. The left side gives the normal lung note from the apex to the fifth rib in the nipple line, where it becomes tympanitic in character. Normal breathing is heard all over the lungs, except over the dull area described.

On examining the heart, inspection shows the apex beat on the right side one and a half inches below and half an inch to the sternal side of the nipple. On palpation the impulse is felt most strongly at

this point, but can be made out all over both sides of the chest below the fourth rib. On auscultating, the first sound is heard best at the point of impulse and is accompanied by a soft blowing murmur, systolic in rhythm, heard over the dull area and increased after exertion and by the patient's assuming the upright position. The second sound is heard loudest just above and inside the point of greatest impulse. It is heard at the junction of the second rib with the sternum on both sides, but louder on the right. It is also heard at the junction of the third on the right side, but not on the left. Pulse is 72, small and shabby. The liver dulness, as described before, measures vertically five and a half inches in the nipple line. The splenic dulness extends for a distance of three and three-quarter inches in the mid-axillary line corresponding to the ninth, tenth and eleventh ribs.

TRANSPOSITION OF VISCERA.[1]

By T. P. SHAW, M.D.,

Assistant Demonstrator of Clinical Chemistry, McGill University.

M. G., aged 23 years, came under my notice during the summer of 1895.

During a conversation concerning a slight ailment, he casually remarked that he occasionally felt a strong pulsation on the right side, which he believed to be his heart. My curiosity being aroused, I asked permission to make a physical examination. This being readily granted, when the man had removed his clothing an area of visible pulsation was seen in the right fifth interspace inside of the mid-clavicular line. There was no visible pulsation on the left side. On palpation over this pulsating area, the sensation conveyed was distinctly that of the apex-beat of the heart. Percussion showed the heart to be of normal size, the area of dulness being on the right instead of on the left side. On auscultation the heart sounds seemed to be of normal pitch and quality. As far as could be ascertained the aortic and pulmonary sounds were transposed, that is the aortic was heard loudest at the second costal cartilage on the left side, and the pulmonary at the second interspace on the right.

The liver dulness was also transposed, a clear percussion note being obtained over the normal liver area on the right. On the left side the dull note commenced at the upper border of the sixth rib in the mid-clavicular line and extended downwards 11 c.m. In the mid-axillary line it began at the upper border of the eighth rib and changed to a clear note 10 c.m. below. The posterior dulness began at the lower border of the eleventh rib.

There is a tympanitic resonance on the right side corresponding to the area of the stomach beginning at the upper border of the eighth rib in the mid-clavicular line.

The spleen could not be palpated on the right side, but there was an area of slight dulness between the ninth and eleventh ribs on the right side in the mid-axillary line.

I might mention also that the right testicle hung lower than the left.

It would seem from this examination, which I have made as carefully as possible, that this is a case of complete transposition of viscera.

[1] Read before the Montreal Medico-Chirurgical Society, Nov. 15, 1895.

Ephemerides, 1895.

By William Osler, M.D.

I.—Introduction.

With the kind consent of the editors I propose to occupy a few pages of the Journal each month with notes and comments on some of the more interesting cases which came before me in the daily round of consultation work last year.

In looking over my notes I find certain cases in which the visit has been of vital moment to the patient, usually in making a diagnosis, upon which successful treatment directly depended, as in myxœdema or pernicious anæmia. In a very much larger number there has been some important suggestion to make, either in prognosis or in the management of the case; while in others the chief value of the consultation has been in a reasonable talk with the patient about his condition, with assurance that there was nothing serious, and general advice as to mode of life and diet. Coleridge somewhere remarks that when a man is vaguely ill the talk of a doctor about the nature of his malady tones him down and consoles. It is very true, and to tone down and console are important functions of professional advisers.

There is a group of cases in which the physician seeks counsel on account of some special obscurity in the disease, an obscurity which may not be lightened by the consultant after the most careful scrutiny. Not to receive the positive information they seek is often a great disappointment to both doctor and patient, but we must remember that there are—changing slightly Sir Thomas Browne's phraseology—cases indissoluble in physic, and a diagnosis is not possible in every instance. Frankly to confess ignorance is often wiser than to beat about the bush with a hypothetical diagnosis.

A consultant's life is not without unpleasant features, chief among which is the passing of judgment on the unhappy incurables—on the cancerous, ataxics, and paralytics, who wander from one city to another. Few are able to receive the balm of truth, but now and again one meets with a cheery, brave fellow, who insists upon a plain, unvarnished statement of his prospects. Still more distressing are the instances of hopeless illness in which, usually for the friends' sake, the entire "faculty" is summoned. Can anything be more doleful

than a procession of four or five doctors into the sick man's room? Who does not appreciate Matthew Arnold's wish?—

> "Nor bring to see me cease to live
> Some doctor full of phrase and fame,
> To shake his sapient head, and give
> The ill he cannot cure a name."

How often under such circumstances has the bitterness of the last line recurred to me! Oliver Wendell Holmes, in the Memorial History of Boston, speaking of two of the leading physicians of the early part of the century, says, "I used often to hear him (Dr. Danforth) spoken of as being called in 'consultation,' as the extreme unction of the healing art is called. If 'old Dr. Danfurt' or 'old Dr. Jeffers' were seen entering a sick man's door it was very likely to mean nothing more nor less than a *nunc dimittis*." 'Tis not pleasant to think that *pallida mors* so often treads upon our heels.

There is nothing new under the sun, and the common practice of friends who, wishing to leave nothing undone, call in a batch of consultants is by no means modern. In the delightful lectures on *Latin Poetry*, delivered in 1893 at the Johns Hopkins University, Professor Tyrrell, of Dublin, quoted a long passage from the "Satyricon" of Petronius. The friends were discussing poor Chrysanthus, who had just "slipped his wind." Seleucus says, "and it is not as if he hadn't tried the fasting cure. For five days neither bit nor sup passed his lips, and yet he's gone. Too many doctors did for him, or else it was to be. A doctor's really no use except to feel you did the right thing." The last sentence might have come from George Eliot or George Meredith.

The value of careful note-taking is recognized by most consultants. I know, however, several men in large practice who have discarded it as altogether too onerous, and as taking up much more time than it is worth. The material which an active consultant may collect in a long life is enormous. The late Dr. Austin Flint's notes cover 16,922 folio pages, all written with his own hand. The late Dr. Howard constantly lamented that the leisure never came in which he could work over the clinical records which he had so faithfully kept for so many years.

A case cannot be satisfactorily examined in less than half an hour, unless the notes have been taken previously by an assistant, a plan which consultants in very large practice might adopt more widely. A sick man likes to have plenty of time spent over him, and he gets no satisfaction in a hurried, ten or twelve minutes examination. If one never saw a patient the second time, notes might be superfluous, but

can anything be more embarrassing in a return visit than to have forgotten name, face, malady, everything? At such a moment well indexed notes are worth their weight in gold. Last year I had a notable illustration of the value of memoranda, however slight. Dr. Bray, of Chatham, brought a patient, whom from certain peculiarities I remembered at once, though nearly twelve years had elapsed since I had seen him. In 1883 he had, at Dr. Bray's suggestion, consulted me in Montreal. Fortunately I was able to lay my hands at once on the notes of the case. The point of interest in 1883 was whether the impotence was an early tabetic symptom, an opinion favoured by Dr. Jewell, of Chicago, and by a New York specialist whose name I do not remember. In the twelve years the patient's condition had remained unchanged, and many of the symptoms which he thought were of recent origin had been present at his first visit. Neither the patient nor Dr. Bray had any recollection of a previous consultation with me, of the truth of which only my notes convinced them

The histories may be taken very conveniently on the cards of the Boston Library Bureau, and filed away alphabetically. I have had much comfort since the adoption of this plan. It is a great saving of time and labour to dictate the condition of the patient to a stenographine, who can (if the arrangement of the consulting rooms is not convenient) be secluded behind a screen. She can afterwards add the notes to the card on which the history has been taken.

For several years I have adopted the plan of dictating at odd times abstracts of the histories of special cases and filing them in order ready for publication. In this way, when noting carefully during the session of 1892-93 all the cases of abdominal tumour which came before me for diagnosis, I had, in October, 1893, when I began the series of lectures which have been published, all the cases type-written and ready. It has always been a regret to me that I had not learned stenography, which Dr. Gowers has found so serviceable, and the use of which in medical work he has advocated so warmly.

II.—Heberden's Nodes.

I thought that the nature of Heberden's nodes had been settled and it was a great surprise to find in that delightful work, *The Senile Heart*, by Dr. Balfour, statements entirely at variance with what I had been taught, and have taught for many years.

Heberden's original description is worth quoting: "What are those little hard knobs, about the size of a small pea, which are frequently seen upon the fingers, particularly a little below the top near the joint? They have no connection with gout, being found in

persons who never had it ; they continue through life ; and being hardly ever attended with pain, or disposed to become sores, are rather unsightly than inconvenient, though they must be some little hindrance to the free use of the fingers."

All recent authors speak of these *nodi digitorum* as identical with the bony outgrowths of arthritis deformans. Charcot, who gives a very full description of them, states, as a result of numerous observations at the Salpètrière, that, (as in the other forms of chronic arthritis) the cartilages undergo a velvety change, and may even disappear, and leave an eburnating surface. The nodes are exaggerations of the little pisiform nodules which exist normally on either side of the lower extremity of the second phalanges. He expressly states that they are composed of layers of new bone ; that there exists no trace of urate of soda, either in the cartilages or in the neighbourhood of the joints, or in the soft parts (*Œuvres Complètes*, J. M. Charcot, VII. p. 255). In Figures 5 and 6 of Plate 1., he gives good illustrations of the nodes.

Balfour expresses an entirely different view. "For diagnosis, however, and certainly for treatment, we have to distinguish between Heberden's *knobs* and Haygarth's *nodosities*. The *knobs* are extravascular deposits in the neighbourhood of the smaller joints, chiefly of the fingers, but they may be found about the toes also, and appear as gouty pearls on the cartilage of the ear. They begin like small peas, or at least are scarcely noticed till they are about this size, but they sometimes attain a considerable size, and produce great and irregular deformity of the hands or other parts affected ; they are composed of urate of soda, and are popularly know as chalkstones. The *nodosities*, on the other hand, are associated with rheumatoid arthritis, and not with gout ; they are really 'exostotic growths, from the margins of the articular surfaces, as well as from the periosteum and bone in the neighbourhood of the diseased joints.'" Either the distinguished Edinburgh physician has been napping, or there are many rash statements on the subject in the text-books.

In an immense majority of all cases these little nodules have surely no connection with gout. They are extremely common in this country, in which gouty arthritis is very rare. Charcot states that in a few instances they do occur with uratic deposits (tophi). I have personally never met with an instance of the kind, and should be glad to hear of any observations of the existence of Heberden's nodes with tophi.

Of six private patients with Heberden's nodes seen last year not one had had gout. Two of the patients, a woman aged 50 and a man

aged 70, had been "high livers," and the former had an eczematous rash. Two of the cases were of special interest. In one, a woman aged 30, the trouble began in her 25th year and involved the index, little and middle fingers of both hands; the ring finger was spared. The *nodi* were very pronounced. The patient had no rheumatic history and had been very healthy. The other case, Mrs. H., aged 73, illustrates the deforming character of this local arthritis in some instances. They developed gradually many years ago with a little redness and soreness. Only the terminal phalanges of the fingers were involved. Other joints have not been affected. The thumbs were also involved. In three of the fingers anchylosis of the terminal joints had occurred, and in four of the fingers the terminal phalanx was strongly everted to the ulnar side. Only one of these cases consulted me on account of the nodes. The rarity of extension of the arthritis to other joints in these cases is notorious.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

Gout.

KLEMPERER, G. "Zur Pathologie und Therapie der Gicht."—*Deutsche Medicinische Wochenschrift*, October 3, 1895.

Among the old theories concerning disease which are being assailed as a result of recent experimental observations, those concerning the conditions of the blood and the urine in gout are not excepted. According to Garrod, whose views Klemperer briefly restates, the condition consists in an increased formation of uric acid and a diminished excretion of the same; Garrod is said to have clearly made a demonstration of each factor.

In his views on this subject Ebstein follows pretty closely the teaching of Garrod, and adds that the blood, rich in uric acid, irritates the tissues, producing necrotic areas wherein the crystals of this substance are deposited.

Von Noorden is another authority quoted by Klemperer. He fails to accord with Garrod concerning the increased quantity of uric acid in the blood as well as the lessened quantity in the urine, and finally concludes that the disease is quite independent of any such blood condition, and formulates a theory that some "ferment" produces a "necrotic area," and on this area the uric acid is formed. Placing these views side by side, and remembering that each has strong advocates, we see at once the confusion of the subject, and in the light of recent chemical research, perhaps it may be said that the finding of Garrod fails in very many instances to be verified.

Klemperer's experimental observations lead him to accept the view that the blood is richer in uric acid, but he does not accord with the views of diminished excretion in the urine, or, in other words, uric acid retention, except in cases where the kidney is found diseased. That the crystallization of uric acid in the tissues is dependent alone upon its excess in the blood seems very doubtful, since a greater

amount is found in the blood under other circumstances without the gouty manifestation, and further it has been shown that the blood of gout may dissolve more uric acid. Perhaps there do exist areas of "*primary necrosis*," and between them and the uric acid the chemical affinity is greater than between the blood serum and the uric acid, and hence crystallization occurs at these points.

The theory that the diminished alkalinity of the blood accounts for the deposition of the crystals above referred to as well as for the attack of gout is not supported. On the other hand he fails to demonstrate it.

The author is of the opinion that there is in the blood a gouty principle or element not yet determined, and that the influence of alcohol and lead in the system is favourable to the action of this principle in the necrotic areas already mentioned.

Notwithstanding the setting forth of some new views concerning the pathology of gout, the writer recommends time-honoured measures in the treatment of this disease, and regards as useless the administration of the drugs recently introduced for aiding in the solution of uric acid in the circulating blood.

The indication for treatment is the diminution of the gouty principle or element, and two ways are suggested: 1. Oxidation; 2. Excretion.

To carry out this indication the terms here used clearly point to the means necessary.

Increased and Diminished Blood Coagulability.

WRIGHT, A. E. "Methods of increasing and decreasing the coagulability of the blood."—*The British Medical Journal*, July 14, 1894.

Prof. Wright's plea for the remarks offered in this article, is that they may serve as contributions to the building up of the newer and better system of therapeutics.

For several years past the author has given special attention to the subject of the blood in health and disease, and his contributions from time to time have been well received and highly thought of, not only in the English and American profession, but also by the German teachers.

The three classes of cases in which an increased coagulability of the blood is desirable are those of hæmophilia, aneurysm and hæmorrhage of whatever kind. Besides referring to the use of lime salts to favour this end, indications which he discussed in 1891, and results of which, in a series of cases so treated, he summarized in this article, he discusses the effects of the increase in the blood of carbonic acid gas produced by whatever means.

The lime salt used is chloride of calcium, administered twice daily in doses varying from 5 grs. to 30 grs. First the results arrived at in cases of hæmophiliac families after observations made on members of four such, go to show that calcium chloride does increase the coagulability, shortening the time for this process in many cases by one-third.

What is of more practical moment, however, is the observation which Prof. Wright has made, viz., that even in cases in which increase of coagulability was not demonstrable, hæmorrhage has been arrested by the internal use of the agent under discussion. He refers to epistaxis, hæmoptysis and hæmophiliac menorrhagia. By actual experiment, the author has also shown that the continued administration of large doses of calcium chloride is not effectual in keeping up a permanent condition of increased coagulability, but that after such a condition is maintained for 12 to 16 days, the tendency to coagulate may decrease.

The second agent increasing the coagulability of the blood with which Prof. Wright has experimented, and also applied as a therapeutic measure, is carbonic acid gas. He claims for it also good results commending its use in chosen cases.

The discussion of methods by which blood coagulability can be diminished, forms the remaining part of this suggestive paper. Many methods open to the physiologist are not applicable to intra-vascular blood. One, however, which seems upon a reasonable basis, is that of operating upon the lime salts of the blood, rendering them inert or unavailable for coagulative purposes. He used tartrates and citrates without any manifest changes. Turning to the use of the acids of these salts, Prof. Wright was successful, without exception, in diminishing the coagulability. At this point the author touches with suggestive emphasis upon the use of vegetable juice in scurvy, and in all diseases with hæmorrhagic tendency, believing that such juices containing citric and other organic acids are prejudicial to such disorders. The author further suggests the possibility that urticarious œdemas occurring during active ossification ascribed to eating of unripe fruits rich in vegetable acids, may be due to the diminution in coagulability then produced.

Two other methods of influencing this process may be mentioned, both of which are followed by a diminution in the tendency to coagulate due to change in the gases of the blood. They are: (1,) Rapid respiratory movements; and (2.) the taking of alcoholic drinks.

W. F. Hamilton.

Surgery.

Glycerin Poisoning.

SCHELLENBERG. "Glycerin intoxication after injections of iodoform and glycerin."—*Annals of Surgery*, July, 1895.

Since 1886, when Husemann found glycerin to have a poisonous action on frogs, we have had increasing evidence of its toxic action. The symptoms vary with the amount of the dose, but in general they consist of frequent pulse, rise of temperature, paralysis of the muscles, congestion of the kidneys and hæmoglobinuria. Most of the cases reported have been caused by injecting glycerin into the womb to bring on labour.

The author has observed twenty-one cases of glycerin poisoning in children in whom iodoform and glycerin had been injected for tubercular disease. The cases can be divided into the following groups according to their clinical symptoms:

(1.) *Mild Cases.*—Several hours after the injection a slight rise of temperature occurs, the pulse becomes rapid, and the patients have a little pain at the site of the puncture. The urine is high coloured, containing a little hæmoglobin. No blood cells, casts, or renal epithelium present. There is a little albuminuria, which continues longer than the hæmoglobinuria. After about twenty-four hours the symptoms disappear and the urine returns to normal.

(2.) *Severe Cases.*—The temperature and pulse are more affected than in the previous cases. The patients have a peculiar pale, sallow complexion, and present nervous symptoms which make one think of meningitis. The urine is of a dark brown colour and deposits a copious dark sediment in which are found renal epithelium casts covered with coloured granules and detritus. The hæmoglobinuria disappears after fiftysix hours or before. There are blood cells present.

(3.) *Fatal Cases.*—One case of this kind was observed. The symptoms were similar to those of the previous group. The patient went into collapse soon after the injection and died on the third day. The autopsy showed acute parenchymatous nephritis and œdema of the meninges. The kidneys were filled with hæmoglobin.

Undoubtedly the iodoform produced or augmented some of the symptoms in the severe cases, but they were not looked upon as cases of iodoform poisoning, as the kidneys were the organs most affected, and iodoform produces no kidney lesion. Moreover, iodine could not be detected in the urine in some of the mild cases, and when it was present it usually appeared some time after the hæmoglobinuria.

It is not improbable that the acute nephritis caused by the glycerin prevents the excretion of the iodoform and thus augments its toxic effects. The conclusions reached are as follows:

(1.) The danger of glycerin poisoning increases with the quantity of the drug, the tissue, and pressure. Children are poisoned by relatively smaller doses than adults.

(2.) A dose of ten cubic centimetres in children and twenty cubic centimetres in adults is almost always well borne.

(3.) Poisoning is easily produced by parenchymatous injections.

(4.) In cold abscesses with a pyogenic membrane three or four times as much can be injected as is permissible in other parts.

(5.) Fresh wounds and large joints are especially liable to absorb the drug.

It has been proposed to give up the use of glycerin, substituting olive oil for it, but the therapeutic effect of that mixture has been found much inferior to iodoform and glycerin.

Ligature of the Spermatic Vessels.

GRIFFITHS. "The effects upon the testis of ligature of the spermatic artery, spermatic veins, and of both artery and veins."—*The Journal of Anatomy and Physiology*, October, 1895.

In connection with the evidence now being brought forward in medical journals, tending to prove that removal of the testicles is, in nearly all instances, followed by a material lessening in size of the prostate, it may be interesting to know that an investigation was undertaken with a view of determining the structural changes that supervene in the testis of an animal after ligation of (1) the spermatic artery, of (2) the spermatic veins, and (3) of both the artery and veins.

In the dog the vascular arrangement of the testis is the same as that in man. The animals used were healthy, as far as could be judged, both the vascular arrangement and the testis being normal in each case. Some of the experiments were performed on full-grown animals and some on puppies.

It is found that when the spermatic artery is tied in the groin there occurs, as a rule, diminution in the size of the body of the testis. Two or three days after the ligation of this artery the body of the testis is obviously diminished in size, and it is found softer and of a bluish colour, presumably from sluggishness of its venous circulation, due to the loss of the *vis a tergo* from occlusion of the artery. The epididymis becomes somewhat, though not proportionately, diminished from contraction of its tubules, due to want of seminal secretion to distend them. No inflammation of the tunica vaginalis is produced.

Ligation of the spermatic veins in a full-grown dog leads to great swelling and congestion of the body of the testis, which is accompanied by œdema and enlargement of the veins in the scrotum. This is truly a hæmorrhagic infarction of the testis, and in it the epithelial cells of the tubules undergo necrosis, in which they are transformed into a glassy homogeneous substance, and the intertubular connective tissue becomes greatly infiltrated with coagulated fibrin and extravasated blood, the latter having found its way into the interior of many of the altered seminal tubules. This is in all probability followed by transformation of the organ, more or less completely, into dense fibrous connective tissue, in which remains of the once tubular structure of the gland may be seen as solid rods of fibrous tissue traversing its substance.

Ligation of the spermatic artery and veins is in puppies followed by great swelling from congestion and extravasation of blood in the body of the testis, which gradually subsides, and the body of the testis decreases until it becomes very small. The epididymis remains more or less normal, and when the body of the testis has reached its ultimate size the epididymis is large and much out of proportion to it. The body of the testis becomes converted into a small, firm, almost fibrous lump, which retains its original shape; but the epididymis is large, and during the period of growth this testis does not keep pace with its fellow of the opposite side, in which the parts are normal.

The following are the general conclusions:

1. Ligation of the spermatic artery in full-grown dogs leads, within a few days, to great diminution in the bulk of the testis, caused by rapid destruction from degenerative changes in the seminal tubules; but after a time the remaining tubules may recover to such a degree as to be again capable of producing spermatozoa in the usual way.

2. Ligation of all the spermatic veins leads to great swelling, from enlargement of the veins and extravasation of blood into the intertubular connective tissue and to necrosis of the epithelial cells in the seminal tubules. This condition would ultimately cause almost complete disappearance of the seminal tubules and atrophy of the gland.

3. Ligation of the spermatic artery and veins in puppies leads to great swelling of the testis, followed by gradual diminution and atrophy of the seminal tubules, and to atrophy of the organ altogether.

4. Ligation of the spermatic artery and veins in full-grown dogs may lead, according to conditions not yet known, to (1) sloughing of the testis, (2) complete atrophy, and (3) temporary fatty degeneration of spermatogenetic cells in the seminal tubules, which may be followed by complete recovery.

Operations on the Stomach.

MIKULICZ. "Bericht über 103 operationen am Magen."—*Archiv. für Klinische Chirurgie.*

In a paper read before the German Surgical Association in Berlin on the 18th of April, 1895, Dr. Mikulicz gave a very interesting and detailed report of 103 operations performed by him on the stomach, between October, 1882, and the end of March, 1895. Dr. Mikulicz operated himself in 81 cases and his assistant in 22 cases. The results are far ahead of any other series of similar cases that have been published.

At the Berlin Congress in 1890 Billroth reported 69 stomach operations, gastrectomies and gastro-enterostomies, with a mortality of 47¾ per cent. In the 103 operations reported by Dr. Mikulicz the mortality was reduced to 23½ per cent., or about half the mortality reported by Billroth only five years before.

In the first 10 years he did 35 stomach operations and 13 died, or a mortality of 37 per cent. In the second period of 2½ years he did 68 operations, with 11 deaths, or a mortality of 16 per cent.

The following table gives a very concise and instructive view of the work done:

	Total.	Recovered.	Died.
Gastrostomy—			
For non-malignant stricture of the œsophagus (9 cases) and some nervous ailment of the cardia (1 case)	10	10	0
For carcinoma of œsophagus or cardiac end of the stomach.	34	28	6
	44	38	6
Pylorectomy—			
For ulceration	2	2	0
For carcinoma	18	13	5
	20	15	5
Gastro-enterostomy—			
For non-malignant pyloric stenosis	1	1	0
For pyloric stenosis of doubtful character	1	1	0
For gall-stone wedged into duodenum	1	1	0
For duodenal hæmorrhage due to aneurism of hepatic artery	1	0	1
For carcinoma of pylorus	22	16	6
	26	19	7
Pyloroplasty—			
For cicatritial stenosis of pylorus	5	3	2
For stenosis with ulceration and hæmorrhage	1	0	1
	6	3	3
Gastrectomy and Gastrotomy—			
For an eroding ulcer	1	1	0
For ulcer with hæmorrhage	3	1	2
For ulcer with perforation	1	0	1
For obstruction of the pylorus by a gall-stone	1	1	0
	6	3	3
Operation for compression of the pylorus by a gall-stone.	1	1	0
	103	79	24

Collapse, pneumonia and inanition were the chief causes of death. The average duration of life after gastostomy for cancer of the œsophagus was four and a half to five months.

Dr. Mikulicz thinks that while it cannot be said that life is greatly prolonged by this operation, yet it is a merciful operation, because it saves the patient from that most painful death, death from slow starvation, and if it could not be said that the operation prolonged life a day, yet he would still recommend it from a purely humanitarian point of view.

The average duration of life after gastro-enterostomy for cancer of the pylorus was nine and a half months and, after pylorectomy sixteen and a quarter months.

Pylorectomy is recommended when the growth can all be removed and when there is no surrounding infiltration or lymphatic infection.

Dr. Mikulicz thinks that there is very little future for the so-called total extirpation of the cancerous stomach.

The association of an operating surgeon with the physician in attendance upon these cases is strongly urged.

G. E. Armstrong.

Midwifery and Diseases of Women.

Treatment of Eclampsia Gravidarum.

ZWEIFEL. "Zur Behandlung der Eklampsie. Bericht über 129 hier beobachtete Fälle."—*Centralblatt für Gynakologie.* No. 46, 47, 48, November, 1895.

Since the memorable discussion on the treatment of eclampsia which took place before the Berlin Obstetrical and Gynecological Society in January, 1892, when Dührssen so powerfully advocated the superiority of rapid delivery by operative measures over the usual expectant plan of treatment, considerable attention has been directed to this subject, and several series of cases have been reported which tend to support Dührssen's views, On that occasion Dührssen held that two questions must be answered before a rational basis for treatment can be obtained : (1.) Does eclampsia cease with the completion of labour ? and (2.) does operation render the prognosis worse ? In answer to the first question he cited the statistics of Lantos and Löhlein which show that eclampsia ceases after the conclusion of labour in 69 to 80 per cent. of the cases. In answer to the second, he maintained that even the severest operations (such as Cesarean section) do not make the prognosis worse, if they are done cautiously under full narcosis. He therefore advocated the speedy emptying of the uterus in cases of eclampsia occuring at the eighth month or later, as soon as the diagnosis is certain, by means of "bloody" dilatation of the cervix (multiple incisions) and forceps, or by a combination of the "bloody" with the mechanical dilatation (colpeurynter). He claimed that the early induction and rapid termination of labour will save more children than the expectant treatment by drugs, baths and dieting. In cases of eclampsia before the eighth month, he preferred the expectant method as giving the child a better chance by allowing longer time for development and growth.

In the article under review Zweifel first sketches the treatment of eclampsia from the time of Velpeau to the present day, and then reports 129 cases which have been treated in the Leipsic Clinic from April, 1887, to October, 1895. The treatment was chiefly expectant until January, 1892, but since then it has been mainly active, based upon Dührssen's plan of multiple incisions of the cervix followed by rapid delivery. He says that Velpeau's monograph in 1835 was the

first serious attempt to found a rational treatment of eclampsia upon facts and personal experience instead of theory. In addition to sinapisms, blisters, leeching, cupping and bleeding, Velpeau recommended general warm baths, the artificial induction of labour and rapid delivery. He condemned cold applications to the head (douches), restricted the use of *accouchement forcé*, preferring incisions of the os uteri and rapid dilatation with the finger, followed by version and immediate extraction. In 1841 Godemer advised rupture of the membranes to relieve uterine tension, followed by vaginal hysterectomy as being less painful and less liable to cause irritation than other methods of delivery. In 1843, Dubois advised incision and dilatation of the os. Hildebrandt in 1864, and Chailly-Honoré and Soyre in 1866, advised and practised incisions of the cervix. Halbertsma pointed out that convulsions usually cease after complete emptying of the uterus, especially if this can be done after the first fit, and recommended Cesarean section as the quickest means of accomplishing this result. Zweifel says that complete emptying of the uterus is not easy when severe eclampsia has begun, but by the use of hydrostatic dilators (colpeurynter, or Champetier-de-Ribes' bag) delivery may generally be accomplished in one hour. He condemns Cesarean section except in special cases, and claims that it is not the quickest means of emptying the uterus, since considerable time is lost in preparing for the operation. Nor is it as safe, as Dührssen's plan of multiple incision, for it exposes the patient to many additional risks. The only case in which he performed Cesarean section was one of markedly contracted pelvis, and there were 30 fits after the conclusion of the operation. He holds that eclampsia is not *per se* an indication for Cesarean section. Of his 129 cases, convulsions occurred first *post-partum* in 32. Of the 97 cases in which eclampsia occurred *antepartum*, 5 were cases of twins and 1 of triplets. Of 103 children, 34 died, giving a mortality of 33 per cent; 50 were full term, 10 of whom died; 53 were premature, 24 of whom died. The maternal mortality was: under the expectant plan of treatment, 32·6 per cent (16 out of 49 cases); under the active plan, 15 per cent. (12 out of 80 cases). The mortality among primiparæ was 16.6 per cent., of multiparæ 5.5 per cent. Tarnier's milk treatment was employed whenever indicated by the presence of nephritis; but he has not as much confidence in it as the French obstetricians seem to have, and maintains that we should not delay the induction of labor in cases of nephritis. Blood letting for the relief of headache, a favourite treatment in earlier days, has not been found necessary in the Leipsic clinic, and morphia has not been used for three and a half years, except for the

relief of great restlessness. Jaborandi and pilocarpine increase salivary secretion and tend to produce pulmonary œdema. He strongly recommends vegetable diet; and has had good results from irrigation of the stomach and the administration of dilute vegetable acids[1]. He prefers citric and tartaric acids, introduced by means of a stomach tube if the patient is unable to swallow. Vegetable acids dissolve albuminoid matters and act as diuretics when combined with sodium and taken up by the blood. Zweifel's conclusions may be summarized as follows: When convulsions occur during the progress of labour, deliver as speedily as possible. If the external os is undilated but the cervix is soft and dilated, distensible rubber dilators (colpeurynter, Barnes' or Champetier-de-Ribes' bags) may suffice to ensure dilatation, aided perhaps by small incisions of the os which bleed slightly. If, however, the cervix is not obliterated and a hard, thick resisting ring is present, through which only one finger can be passed, the colpeurynter should first be employed, and if incisions are required they must be deeper and longer. Severe bleeding will follow, but it may be controlled by clamping and then padding the wounds firmly with pledgets of sterilized cotton and tamponing the uterus with sterilized gauze. Since we never know how much blood will be lost during delivery, it is better to reserve bloodletting for the relief of convulsions recurring after the conclusion of labour. As much as 500 grams may be taken, if the arterial tension is high. While the patient is narcotized and unconscious, nothing should be given her to swallow, but fluids may be introduced into the stomach by means of a stomach-tube. Lavage is useful when there is digestive disturbance. A weak solution of citric or tartaric acid may be introduced with advantage when the stomach is empty. Chloroform and ether may be used for anæsthesia; Zweifel does not agree with some American writers who consider that ether is contra-indicated in cases of nephritis. The most rigid antisepsis is essential throughout the whole course of the treatment, as sepsis may cause a continuance of the convulsions.

J. C. Cameron.

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[1] Citric, tartaric and acetic acids are given in solution as follows:

Acid citric g. 2.5	Acid tartaric g. 2.5	Acid acet. qil. g. 2.5
Aq. — 500.	Syrup — 30.	Syrup q.s.
	Aq. — 300.	Aq. — 200.

Pharmacology and Therapeutics.

On Diuretic Medication.

HUCHARD, H. "On diuretic medication and on theobromine."—*Journal des Practiciens*, July 6, 1895.

Prof. Huchard believes that in the future we shall place more reliance on diuretic medication than we do at the present, and emphasizes the importance of the functions of the kidney in the elimination of the toxines which may be either produced by or received into the organism.

For therapeutic purposes he classifies diuretics according to their modes of action into those which act mechanically and those which have a direct action upon the kidney. Mechanical diuretics may act by directly increasing the blood pressure, and as a consequence the rapidity of the stream through the glomeruli; digitalis is the type of this class. Water and aqueous drinks which act by increasing the volume of the blood, and thus indirectly raising blood pressure, form a second sub-division. Diuretics which have a direct action on the renal epithelium, may be divided into those which merely stimulate the function of the renal cells without altering it, and those which produce diuresis by bringing about more or less congestion of the kidney. As types of the functional epithelial diuretics may be mentioned milk, lactose, theobromine, asparagus, dandelion, &c., whilst juniper and cantharides belong to the class of epithelial irritants and should be seldom employed.

Dr. Huchard draws special attention to the value of theobromine as a diuretic. He states that it has little action on the nervous system, its toxicity is very slight even in large doses, it has no action on the heart or arteries, and while its diuretic action is more prolonged than that of caffeine, it is apparently not liable to irritate the kidney in its elimination. It is indicated in dropsies of cardiac origin, and in some cases of Bright's disease. He recommends it to be given in cachets containing half a gramme each, of which eight may be given on the first day, six on the second and third days, and four on the fourth day. Under this treatment there is a rapidly increasing diuresis. It is sometimes serviceable to combine in the cachet an equal quantity of neutral phosphate of sodium. Diuretin he thinks an uncertain product and less active.

Action of Bicarbonate of Sodium.

LINOSSIER AND LEMOINE. "Action of bicarbonate of sodium on the gastric secretion."—*Bulletin Générale de Thérapeutique*, December 15, 1894.

MATHIEU, A. "Upon the influence of bicarbonate of sodium upon the gastric secretion.—*Gazette des Hospitaux*, September 10, 1895.

A prolonged discussion has been going on, principally in the French medical press, as to the exact action of sodium bicarbonate on the gastric secretion. In June, 1893, MM. Linossier and Lemoine published in the *Archives Générales de Médicine* the results of a series of experiments. Their conclusions at the time were controverted by several writers, and experiments were brought forward, in which results contradictory to their own were obtained. They, therefore, undertook a fresh series of investigations, and for their subject had a young soldier, who possessed the power of returning at will the contents of his stomach. Sodium bicarbonate was administered in varying quantities, both before and after a meal, and a careful analysis of the chyme was made several times in the course of each experimental digestion. Their conclusions are summed up as follows:

The immediate action of bicarbonate of soda on the gastric secretion is essentially stimulating. If the dose is small or medium, the stimulating effect continues after its neutralization and provokes an increase of hydrochloric acid secretion. If the dose is large the secretory energy of the mucous membrane is exhausted in counteracting the alkalinity, and when an acid reaction of the chyme is once more re-established, the period of stimulation is arrested and the normal amount of acidity may not be reached when the food passes out of the stomach. The stimulating action is manifested most markedly when the drug is administered before the meal. The authors add that it may be supposed that by a repetition of a moderate stimulus the mucous membrane of the stomach may take on a persistent hyperactivity, which would explain its good results in patients with diminished hydrochloric acid secretion. On the other hand, its sedative action in large doses in cases of hyperacidity, may be due to exhaustion of the mucous membrane by repeated powerful stimulation. At the same time prolonged treatment with large doses results in increased alkalinisation of the blood, reducing the acidity of all acid secretions. It would appear desirable in cases of hyperacidity to endeavour to alkalinise the blood without stimulating the stomach, by administering the drug per rectum, or in the form of a salt of an organic acid (*e.g.*, as a citrate or lactate).

Dr. Mathieu, in his paper has arrived at very similar conclusions He opposes the statement made by M. Reichmann, that sodium bicarbonate has no action upon the secretory powers of the stomach, objecting that the technique employed by the latter was defective and that the examination of stomach contents was made too soon after the exhibition of the drug.

Dr. Mathieu thinks that the present state of our knowledge on this subject may be summed up as follows :

1. Bicarbonate of sodium produces, immediately, total or partial neutralization of the acidity of the stomach, and if the dose is sufficiently large, alkalinization persists and peptic digestion is stopped.

2. With a smaller dose the secretion of hydrochloric acid continues after the bicarbonate has been transformed into the chloride of sodium, and may become even stronger than before.

3. A sufficient dose of sodium bicarbonate given before food, stimulates both the motor and secretory activity. The excitation of the secretions appears more marked in those cases where the secretion is defective than where it is in excess, unless the deficiency is due to an advanced atrophy of the glandular elements.

Pathology.

The Study of Variation.

BATESON. "Materials for the study of variation, treated with especial regard to discontinuity in the origin of species." London and New York, MacMillan & Co. 1894.

In a most suggestive article, forming the first and introductory paper in the first volume of the *Journal of Pathology*, by Virchow, the great leader of medical science indicates the difficulty that exists in defining scientifically and accurately what is the essential basis of heredity, more especially when the cases are taken into consideration in which transformation accompanies descent, and he points out that it is to pathology that we must eventually look for the rules governing such transformation. "Every case of descent," says he, "in the sense in which Darwin uses the term, that is to say, every deviation from the type of the parent animal must have its foundation in a pathological accident."

The more one considers the facts in connection with variation, whether in the more limited sphere of the study of congenital abnormalities and defects in man, or the wider study of variations affecting both animals and plants, the more assured does one become of the truth of Virchow's statement.

But if these variations be pathological, that does not necessarily imply that they are valueless, and a study of such departures from the normal, while it forms truly a branch of pathology, is strongly attracting the attention of modern biologists, for it would seem calculated to afford a more solid basis for the establishment of a knowledge of descent, and the production of new species, both animal and vegetable, than any other branch of biological study. In this connection Mr. Bateson, in the work here reviewed, has brought together a mass of facts of the highest value. It is true that he does not pretend to accomplish very much in the way of giving an explanation to the large mass of facts which he brings forward. He does not attempt to explain or indeed to deal at any great length with the inheritance of variations: he simply records cases in which variations have been observed. But this very record, by placing the numerous cases in orderly sequence, is in itself most valuable and is the beginning and the basis upon which laws relating to the subject must be established.

Much of his material is of direct value to the anatomist and to the pathologist, for he has collected together the cases of variations in the vertebræ and ribs, in spinal nerves, the cases of persistent branchial openings and the structures in connection with them, the cases of supernumerary mammæ, of polydactylism, of congenital abnormalities in the uro-genital system, and again of double monstrosities, all of which as they affect man, are of very direct interest.

But medical readers interested in the problems of development and of species will, I think, find most food for thought in the introductory portion of the work, in which the subject of variation in general is most ably and most suggestively considered, and at the same time the theories of descent at present most in vogue are subjected to searching criticism.

According to the generally accepted view, it is held that the discontinuity of species has been brought about "by a natural selection of particular terms in a continuous series of variation," or, in other words, it is generally held that there has been progressive evolution, and that species represent stages in a gradual development, at which there has been attained a peculiarly satisfactory equilibrium, if I may use the term, between the organism and its environment. But while this has been accepted, all students have seen the difficulty or difficulties that the view presents. How, for example is it to be explained that a new organ makes its appearance ? That new organ is presumably of distinct use to the individual, but granted that it has been developed continuously, there must of necessity have been a series of individuals in whom the organ, while gradually improving, must have been imperfect and incomplete, and to all intents and purposes, have been useless. Why should animals whether by natural selection or by any other law burden themselves with the development of useless organs ?

This consideration alone is sufficient to render it worthy of enquiry whether variation is truly continuous. If we consider the evolution of human knowledge and acquirements, we assuredly do not find this to be the case. As I pointed out two years ago, before a literary society in Montreal, we find that once a new principle or new method is achieved, be it in architecture, in art in general, in printing, in the employment of steam and so on, we do not observe progressive advance, but, on the contrary, utility at the very inception and advance in a bound, so that almost from the beginning, or within a relatively very few years, the principle or the method is utilized to its fullest extent. The most perfect examples of Norman, early pointed and perpendicular styles of architecture are to be found among the earliest buildings in each

style. Centuries of printing have not given to us more exquisitely produced books than those of the year 1490 or thereabouts. Decades of strenuous endeavour have not greatly improved upon the locomotive steam engines of 1840, either in speed or in economy of fuel. That is to say, within twelve years the locomotive approached to the most perfect type. The law would seem to be that once a given accomplishment is gained, forthwith man brings that accomplishment to its highest state. I doubt not that this has already been fully recognized. If this be so, and if, as Mr. Herbert Spencer would shew, the laws governing human progress and those of organic evolution are identical, we may expect to find evidence of a similar discontinuous advance in the development of species.

Now Mr. Bateson's evidence, so far as it goes, strongly supports this conclusion. No one can study the matter brought forward in the book before us without becoming assured that variation is at the least very frequently discontinuous, and as a consequence it is quite possible that the origin and development of species has also been discontinuous. Take, for example, one of the simplest cases given, namely, that of variation in the number of petals in flowers whose parts are disposed radially. Such examples are very common and, as Mr. Bateson says, variation of this kind may be seen in any field or hedgerow. Anyone possessing only a town garden or a green-house can easily observe the phenomenon. In the tulip, for instance, among garden flowers, we may have the rays present in fours instead of three. Again, among the radially disposed lower animals, among the medusæ, such as, for example, the aurelia, the whole body may be divided into six or some other number of parts instead of into four, the normal number.

To return to the tulips. Between forms in 3 and forms in 4 are intermediates possible, and if possible do they exist? Now, by choosing suitable species of regular flowers, individual flowers may no doubt be found in which there are 3 large segments and 1 small one, or 2 normal segments and a third divided into 2, making 4 in all; such flowers are rare, while cases of perfect transformation are common, and with regard to these rare cases the grave doubt may be expressed as to whether they are in any true sense intermediate between the perfect form in 3 and the perfect form in 4. While several degrees of completeness in variation may be seen in the offspring of the same parent, any one member of such a family group may show a particular variation in its perfection; the occurrence of any intermediate in the line of descent is by no means necessary for the production of the perfect variation. Again, to turn to what we

observe in man. While cases of polydactylism, it is true, not infrequently present imperfectly formed supernumerary fingers, there are numerous cases on record of those born from perfectly normal parents, in whose ancestry there is no recorded case of polydactylism, who nevertheless present one or more perfectly formed accessory fingers. So also with supernumerary mammæ; while most frequently the accessory mammæ are imperfect, there are many examples of perfectly formed mammæ, accessory and appearing at a bound as a perfect variation.

This discussion of the sudden appearance of new organs, or parts of new organs, which are more or less reduplications of pre-existing organs, brings us to the subject of reversion. The ordinary explanation given for the presence of the accessory parts is that they form examples of reversion and that they represent a condition of atavism, or reproduction of parts which were present at some point in the line of ancestors. Mr. Bateson shows very forcibly that this doctrine of reversion is thoroughly unsound and untenable in perhaps the majority of cases in which it is invoked. While for example it is true that in many cases supernumerary mammæ appear along a line stretching anteriorly from the axilla down to the pubes on either side, there are other absolutely well authenticated cases in which fully developed mammæ, with nipples and gland tissue, have shown themselves on the face, on the back or even upon the extremities. It is impossible to consider such as instances of reversion. Indeed the assumption that where supernumerary mammæ occur along, what for brevity may be termed the mammary line, they are examples of reversion, implies acceptance of the belief that the primitive mammal was possessed of mammary glands upon each segment between the fore and hind limbs, and that every similar case of supernumerary mammæ in the lower animals provided with several pairs of mammæ (such cases are very numerous) is also a reversion. What evidence we have is absolutely opposed to this view. The lowest mammals certainly do not possess the greatest number of mammary glands. Or take another: the percentage of extra molars in the anthropoid apes is almost the highest among mammals. On the usual interpretation such accessory teeth are due to reversion to an ancestral condition with four molars. It has been argued that mammalian forms frequently showing such "reversion" are older or more primitive than those which do not. From this reasoning it should follow that the anthropoid apes are the most primitive form of monkeys, not to mention other mammals. It is surely time, says our author, that those brilliant and facile deductions were no more made in the name of

science ; it would probably help the science of biology if the word reversion and the ideas which it denotes were banished or banned for an indefinite period.

In its place we have to take into account the main directions along which variation may manifest itself. Of these there are two which, if not the only directions, are certainly the most obvious and the most important. These he designates meristic and substantive. The human body, and indeed all living forms, are composed of parts disposed symmetrically around a central axis, which are, or are not, repeated in series, and this same symmetry and repetition are to be recognized in the component parts of parts. To the features associated with this symmetry and repetitive arrangement, Mr. Bateson applies the term meristic, while the term substantive refers to the qualitative features (size, colour, etc). Thus for instance, albinism is a substantive variation, polydactylism a meristic. Mr. Bateson, by the very number of the examples that he brings forward points out one conclusion at least. He shows that a very large number of variations and of distinctions between allied species are meristic. He indicates that one of the laws of variation is, that there can be the addition or the suppression of one or more of a series of meristically disposed portions of the organism, and that the force leading to the meristic development of the organism permits the addition or removal to be complete in itself. Such a law embraces an important group of variations, and would seem to afford an explanation for the sudden rise of these variations, which is distinctly superior to the old reversionary theory. Mr. Bateson, it must be acknowledged, never formulates the law in these or other words, indeed, while he subjects the older theories to an analysis, more often destructive than confirmatory, he is almost painfully modest in drawing conclusions, and this modesty is faithfully reflected in the title of the work.

Reverting to the illustration I have given of what obtains in connection with the discontinuity of the progress of human knowledge, it is to be observed that while each new achievement appears to be rapidly brought towards perfection, nevertheless to say that the process of mastery is immediate is, after all, a *façon de parler*. In every case between the initial application of a new principle and the fullest application of the same, there is a period of progressive improvement. With the discontinuance, there are associated periods of continuous advance—and while Mr. Bateson demonstrates the inherent probability of a discontinuous evolution of species, he is careful to acknowledge that with it there must be assumed the working of a continuous variation. Or, to state the matter definitely, the assump-

sion of the existence of discontinuous variation does not render it necessary to deny the action of continuous variation.

As to why certain variations tend to be inherited, our author wisely does not commit himself, for the facts are wanting upon which to base any certain statements.

With regard to substantive variation, Mr. Bateson has not been able to bring together nearly so full a collection of examples, and there would appear to be little that can be stated with precision or with brevity concerning them. I will, therefore, refer those interested in the matter to the original, which certainly will repay perusal.

J. G. Adami.

Laryngology.

The Cigarette Habit.

MULHALL, J. C. "The cigarette habit."—*New York Medical Journal*, November 30, 1895.

This paper is written by one who has smoked cigarettes for twenty-five years, and therefore feels that he speaks with a certain amount of authority on the subject. In order to set at rest the popular opinion that cigarettes are impregnated with all sorts of narcotics Ledoux carefully analyzed several popular brands, and the results of his investigations conclusively proved that there is no other drug but nicotine in the tobacco and a harmless quantity of cellulose in the paper. The effects of smoking Mulhall divides into local and constitutional. The local effect of using tobacco in the ordinary way is a slight hyperæmia, or insignificant catarrh, in the healthy throat. As used in cigarettes, that is by inhalation, the smoke comes in contact with the laryngeal, tracheal and bronchial mucous membrane, and here produces in many the same trivial hyperæmia and secretion. Hyperæmia, not inflammation, acute or chronic, is the sole disturbance. The writer believes that the cigarette smoke, when inhaled, does not reach beyond the first division of the bronchial tubes. The author also states that the inhalation of cigarette smoke will not, *per se*, produce throat or nose troubles, but it will aggravate any existing trouble arising from other causes.

The constitutional effects of cigarette smoking are to be seen in the nervous system.

It being admitted that the use of tobacco is a great evil in the young, it follows as a self-evident proposition that any method which encourages its use must be more reprehensible than a method which discourages its use, and the cigarette, above all methods, presents this encouragement to the use of tobacco. In its mildness is concealed its very capacity for doing harm, for the reason that it teaches the use of tobacco; its mildness also explains its fast spreading use amongst young women.

In the discussion which followed the reading of this paper at the recent meeting of the American Laryngological Association, the weight of opinion was that cigarette smoking as a habit is harmful, not only in its local effects, but also in its effects upon the constitution.

That tobacco smoking in any form does *per se* produce changes in the normal appearance of the throat is my opinion. In two cases of marked irritability of the throat occurring in young women, the changes seen in the throat were very suggestive of those produced by smoking, and upon questioning, the cause was admitted to be cigarette smoking. It is also my experience to find that in singers and public speakers smoking produces a mild catarrhal laryngitis which, in many cases, is the cause of the temporary huskiness complained of, and merely rest from the habit has cured the trouble. That one or two noted singers have used tobacco without detriment to their voice is well-known, but that a dictum should go forth that smoking is not injurious to the normal throat requires, in my opinion, to be qualified by the individuality of the person smoking.

H. S. Birkett.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS.

PRAGER MEDICINISCHE WOCHENSCHRIFT.

Ueber einen Fall von congenitaler Syphilis—George Mathewson.

NOVEMBER, 1895.

THE CANADIAN PRACTITIONER.

University facilities; student's duty. An address at the opening of the Medical Department of the University of Toronto—A. McPhedran, p. 799.

Notes on a case of brain tumour, with an account of its partial removal—J. Webster, Kingston, p. 813.

Physical training and development as a therapeutic measure—B. E. McKenzie, Toronto, p. 822.

THE CANADA LANCET.

A pistol shot wounding stomach, large and small intestines, and mesentery, with recovery—George S. Rennie, Hamilton, p. 73.

Laboratory notes on the bacteriology of diphtheria—E. B. Shuttleworth, Toronto, p. 76.

With Dèjérine at the Salpêtrière.—W. Campbell Myers, Toronto, p. 81.

THE MARITIME MEDICAL NEWS.

Anterior abdominal nephrectomy—James McLeod, Charlottetown, P.E.I., p. 227.

Notes on abdominal tumours—P. Conroy, Charlottetown, P.E.I., p. 232.

Report of a case of Myxœdema—C. J. Fox, Pubinco, p. 233.

Case of delayed labour, due to dropsical effusion—C. P. Bissett, St. Peters. N.S., p. 235.

Case of penetrating wound of abdominal cavity, operation, recovery—A. C. Hawkins, Halifax, N.S., p. 235.

LA CLINIQUE.

Des émotions vives chez la femme enciente, cause de la monstruosité—A. L. de Martigny, Montreal, p. 143.

THE CANADIAN MEDICAL RECORD.

Fracture of bones and ossification of muscle in tabes dorsalis—J. Bradford McConnell, Montreal, p, 49.

Report of a case of papillomata of the ovaries and tubes, removal, recovery—Lapthorn Smith, Montreal, p. 53.

DECEMBER, 1895.

DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Clinical notes on a recent series of surgical cases—T. H. Manley, New York, p. 665.

Dysmenorrhœa with anteflexion of the uterus and stenosis of the os internum—J. Campbell, Seaforth, Ont., p. 672.

Cases in practice—Frank and Ernest Hall, Victoria, B.C.; p. 675.

Scarlet fever—W. Lovett, Ayr. Ont., p. 676.

Cases of nervous affection—C. J. H. Chipman, Ottawa, p. 677.

The intelligent use of rectal injections, with improvement of ordinary enema syringe—P. Palmer Burrows, Lindsay, Ont., p. 678.

A Case of Congenital Syphilis---George Mathewson.

This article is a very full and clear account of a case of congenital syphilis studied in the Pathological Institute at Prague, under Prof. Chiari. The case was characterized by the extreme extent and diffusion of the syphilitic manifestations. Besides the presence of pemphigus and encephalitis, gummata were found and studied in the meninges, the thymus, the lungs, the myocardium, the liver, kidneys and right femur. These morbid changes were found in the body of a fœtus born during the seventh lunar month. The characteristic of the gummata in the various organs, was that they presented advanced calcification, a clear intimation that the syphilitic neoplasms must have developed at a relatively very early period of fœtal life. While it is not uncommon in congenital syphilis to find luetic changes in the skin, lungs, liver and bones, it is unusual to have gummata in such regions as the meninges, the thymus, the heart and kidneys. In connection with the same case, the maternal placenta exhibited thrombosis, arteritis and vesicular changes in the chorionic villi, comparable with the pemhigus, which affected the child. *J. G. Adami.*

Physical Training and Development as a Therapeutic Measure---B. E. McKenzie.

The writer points out that there is an essential difference between athletics and gymnastics. The aim of athletics is pleasurable activity for the sake of recreation, that of gymnastics, with which he associates massage, is training, not only for pleasure, health and skill, but for the improvement and often complete obliteration of bodily deformity. The necessity for attention to the physical development of children will be apparent to any one who will notice how many of them, especially in large centres of population, are unsymmetrical, distorted, and imperfectly developed. Measurements are given by which it is demonstrated that the symmetry and physical development of the women of the present day cannot compare with that of primitive or uncivilized races, or the best models of Greek statuary. This difference arises from the very many far-reaching evils of modern customs and fashions.

In the greater proportion of deformities, *per se*, a brace should never be applied. It is very necessary to distinguish between deformity and disease, for it is in the latter class of cases that orthopædic appliances are of use. By careful physical training, even those with spinal deformity may be helped materially and perhaps entirely cured. He advocates the use of the mirror to allow the patient to see her own deformity and to make her understand that its cor-

rection is to be obtained by her own efforts. Class work is far better for the patient than for her to work alone, as the exercises may soon grow monotonous. Two cases are cited, one, a girl of 22 years of age, with strongly marked lateral curvature, with pain in the back and legs. After several months of graded exercise there was very manifest improvement, and now after a lapse of two or three years she presents an excellent figure and is in good health. The second case, a poorly nourished boy of 7 years, with moderately marked roto-lateral curvature, accompanied by chorea. Improvement in the chorea was manifest in a few days, and in a week the boy had assumed control of his muscles.

The effect of exercise on the mentally imperfect is also touched upon. Recent work on the subject shows it to be a most valuable means by which the condition of these unfortunates can be much improved.

The writer concludes his paper by claiming, that systematic exercise has not been sufficiently employed by the medical profession; that modern modes of living are rendering attention to this subject more imperative; that while it is the most efficient agent which can be employed in the treatment of deformities, and while it is an aid to all others, yet it does not take the place of tried and proved methods; that it demands, for its most successful use, persons trained especially for the performanue of the work; and that its purpose is not only and chiefly to develop muscle, but to reach the whole being, improving and strengthening the nervous, digestive and circulatory apparatus.

A Pistol Shot Wounding Stomach, Large and Small Intestines, and Mesentery, with Recovery—George S. Rennie.

This very interesting case illustrates how recovery may follow the most severe injuries to the peritoneum and abdominal viscera. The patient was shot in the abdomen during a bar-room row, with a ball from a 32-calibre revolver, and was operated on about an hour later. The ball had entered the abdomen three-quarters of an inch above and to the right of the umbilicus, a portion of omentum, about half the size of a man's hand and covered with dirt, protruded from the puncture. After careful preparation, this hernia was cleaned, ligatured and cut off. A median incision was made and the cavity was found full of clots, fluid blood and fæces. A large rent was found in the mesentery of the transverse colon and two small ones in that of the small intestines, from all of which there was free hæmorrhage. The small intestines were perforated in four places, and the transverse colon in two. These six holes were closed with a continuous Lembert

suture. The stomach was next examined and an elliptical hole, about the size of a quarter dollar, with ragged edges was found on the anterior wall near the lower border, this was closed in the same manner as the wounds in the intestines. The abdominal cavity was then thoroughly cleansed by a large quantity of hot sterilized water. Careful search failed to find any further damage. The abdominal wound was sutured and a gauze drain left at the lower angle. The patient made an uninterrupted recovery, the temperature only on one occasion rose to 100°, and he was discharged from the hospital at the end of a month. Since then has been as well as he ever was in his life.

A Case of Penetrating Wound of the Abdominal Cavity---A. C. Hawkins.

The patient, a boy aged 9, had been gored by a cow, and through a rent in the abdominal wall a large coil of small intestines and cæcum, covered partly by omentum, protruded. On examination the intestines were found to be uninjured, but the omentum was torn. The laceration was enlarged, and the protruding intestines, thoroughly cleansed by a 1 per cent. carbolic solution, were returned by performing taxis over a towel, after having the body raised to Trendelenburg's position. Three inches of the torn omentum was removed and the abdominal wound was sutured. The patient made a rapid and uneventful recovery.

A Case of Myxœdema---C. J. Fox.

The writer states that this disease is of the greatest rarity in Nova Scotia; that he has never seen a case reported, nor heard of one occurring in that province. The case he reports is therefore of interest. The patient had not been well since the birth of her last child, three years before. She was formerly very slight, weighing 118 lbs, but has since then increased in size until she weighed about 180 lbs. She was always cold and had a dry skin, there was a constant feeling of lassitude and lack of energy. She presented a marked dulness of expression which became more pronounced as time elapsed, and which gave the first clue to the nature of the malady; this, together with a peculiar slowness or dragging in the speech, was characteristic. Three grains of dessicated thyroids, morning and evening, were administered, which made her feel uncomfortable, producing pains in the head, with dizziness, and restlessness. The quantity was reduced until there were no unpleasant symptoms produced. The beneficial effects of the treatment were most pronounced.

Kenneth Cameron.

Reviews and Notices of Books.

A Text-Book of Physiology. By Michael Foster, M.D., L.L.D., Sec. R. S. London and New York: MacMillan & Co. 1895.

Of all the text-books that are likely to come into the hands of a student during his career, and of all works of reference outside his immediate subject to which the practitioner turns in later life for refreshment and inspiration, it may safely be said that there is none more admirable in style, in sober impartial presentation of its subject and in suggestiveness than is Professor Michael Foster's well known text-book of Physiology. It may be wanting in "tips," it may not be quite suitable for purposes of cramming, it may not give a long list of investigators, it may not, upon superficial reading, appear to deal with the minutiæ of its subject, and yet if one is conversant with any small part of physiology, one cannot but be impressed, in reading what Foster has to say upon that special branch, that somehow or another he has managed to condense into single sentences all that is solid and certain of the results of months of work by able investigators, while each paragraph contains the gist of many monographs. To read such a work, to study carefully the disinterested manner in which the pros. and cons. of physiological problems are martialled in order, and weighed and found worthy, or found wanting, is in itself an education of the highest order. No other work illustrates so consistently the method of scientific thought and the mode of attacking scientific and medical problems. But undoubtedly the successive editions brought out upon the other side as they have grown larger and larger, and have appeared in more and more numerous volumes, have made it difficult for the ordinary student to acquire the work. Upon this side of the water the difficulty has been met by the publication of editions abbreviated, we believe, against the will of the author. Now at length we are glad to welcome an authorised abbreviated edition in one volume, and we trust that the appearance of the new edition will establish this in the position that it deserves to hold among American students. The abbreviation has been brought about by shortening and expurgating those parts of the larger which in the main deal with histological detail. The work, therefore, may be regarded to that extent as incomplete. Again, but little attention is given in it to embryological details. Thus, of necessity, the student will require the use of other works dealing with these subjects of histology and embryology. What is left behind is, however, a treatise upon the functions of the different systems of the human body and upon the vital processes written by a master hand, a treatise on physiology unequalled in any language. J. G. A.

General Pathology. By Dr. Ernst Ziegler, Professor of Pathology at the University of Freiburg in Breisgau, translated from the eighth revised German edition by a committee of American pathologists, under the editorship of Dr. Albert H. Buck. New York: William Wood & Co.

When Professor Ziegler's well known text-book first appeared it was received with much criticism by his fellow pathologists, but with a hearty welcome from German medical students, and the yet greater success of the second and later editions may be said to have been largely due to Dr. Donald MacAlister, who, in producing the popular English translation of the first edition, not only introduced many of the excellent illustrations adopted by Ziegler in his second and later German editions, but also proved to the German author the great advantage of short clear sentences over those involved and altogether vicious strings of many words, which delight the heart of the ordinary German writer, but are certainly not conducive to sweetness and light. Unfortunately the English translator who did so much to improve the quality of the text-book has never issued any further and revised edition of his translation, while, on the other hand, six further editions have been brought out by the author in Germany, each one an improvement upon its predecessor, and so well established has the work become that we cannot but welcome this new translation of the first and general portion of the eighth edition. It is altogether a most useful work, and although not free from faults, it must take its stand as the best and most modern text-book upon the subject of general pathology at present brought before English-speaking students.

Its one great fault is that it is still far too much a treatise on pathological histology, and that whereas, throughout, the description of morbid appearances in the tissues is excellent, there is far too little discussion of the causes leading to the production of each condition. To take an example at random, in the paragraph upon calcification of the tissues, while the appearances observed are described with excellent conciseness and precision, all that we are told about the intimate causation of the deposits of lime is that "it looks as if dying tissue which has undergone more or less modification possesses a kind of attraction for the lime salts in solution in the body and enters into intimate combination with them"—A statement altogether too scanty.

And similar examples of scanty treatment of the subject of causation is to be found in nearly every section treating of degeneration. A still more marked example of the same tendency (again selected at random) is to be found in the fact that whereas the description of the different forms of œdema and dropsy occupies close upon four pages of large print, practically all that has to be stated with regard to the changes which are at the bottom of the production of these conditions is relegated o one page of small print; and here the author does not attempt any

broad discussion of the causation, but confines himself to giving short and impartial descriptions of the views and experiments of the leading workers upon this subject, with a minimum of personal opinion. And the most important subject of circulatory changes, that is, of change in the composition of the blood, in its amount, in general vascular resistance and in the function of the heart are treated in a chapter in which fifteen pages are devoted to thrombosis and embolism, 6 as above mentioned to œdema and dropsy, 6½ to hæmorrhage and infarcts, 1 to lymphorrhagia, about 6 to local hyperæmia and local anæmia; whereas the remaining six pages only are given to the vast subject of impaired working of the heart, general anæmia, alterations in vascular resistance and alterations in the pulmonary circulation.

Now, whereas a text-book which is crowded with facts and with names appears to exercise a peculiar fascination upon the student, it is to say the least, questionable whether the accumulation of facts and the knowledge of many polysyllables is the best education: indeed it will not be going too far to say that educationally speaking it is bad, and if pathology as a subject of the general medical curriculum is to be of the greatest use, it must be by supplying or attempting to supply something like a scientific basis in explanation of the various morbid conditions, in order that the student, when launched into practical life, may be able to recognise symptoms and conditions, not as so many names, but as being due to this or that lesion or association of lesions, and in order that, having some idea with regard to the causation of disease, he may be the better able to treat disease. There is altogether too great a tendency to restrict pathology to morbid anatomy and histology, and while so far as it goes nothing but praise can be given to the work before us, it must be acknowledged that it does not go far enough, that it does not seek sufficient inspiration from experimental pathology or place ætiology in a sufficiently prominent position. On the other hand, it must be acknowledged that there is no recent work upon the subject in the English language supplying the wants here indicated, hence the work before us may, taken in all, be considered as the text-book upon general pathology that is most recent and most to be recommended.

The translation has been well accomplished and the general form of the work as here published leaves little to be desired. J. G. A.

Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S., Edin. Consulting physician to the Royal Infirmary, and surgeon to the Royal Edinburgh Hospital for Sick Children. Fourth edition, p.p 180. Edinburgh: Oliver & Boyd. 1895.

We welcome the new edition of this excellent text-book for nurses on the principles of surgery. The lectures are clear and succinct and cover most of the processes with which surgical nurses have to deal.

In the chapter on the healing of wounds, the part that deals with

causes of infection might well have been extended by giving fuller instructions how to prevent this condition, and the recommendation to wash an uninfected wound with 1–1000 solution of bichloride of mercury must be a mistake, as solutions of this strength are rarely used now-a-days. While calling attention to these small points, we do not wish to detract from the value of the book, but rather the reverse, for we would strongly recommend every nurse to study it carefully as a most valuable work on surgery and one adapted especially for their requirements. R. C. K.

A Guide to the Practical Examination of Urine. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania 9th Edition. Revised and corrected. Philadelphia: P. Blakiston, Son & Co. 1895.

A work that has reached its ninth edition requires little advertisement: but now-a-days, when so many rivals have appeared upon the field, it may be well to recognize that this popular manual upon the examination and analysis of urine is being carefully kept abreast of the times, and that it presents in admirably clear language the experience of many years of one who is a recognized authority upon this subject.

Dunglinson's Medical Dictionary. 21st edition. Philadelphia: Lee Bros. & Co. 1893.

For the benefit of those who may possess the above work we would note that we have received from the publishers an appendix of twenty-four pages, bringing the work up to date, and adding yet further to the value of this which, as has been noticed in a previous number of the JOURNAL, we consider a useful and most satisfactory work.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 15th, 1895.

A. D. BLACKADER, M.D., PRESIDENT, IN THE CHAIR.

Drs. W. W. Alexander, of Lachute; Robert Reddick, of West Winchester, Ont.; A. G. Morphy, of Lachine; A. E. Garrow and J. J. Ross were elected ordinary members.

Recovery from Perforated Gastric Ulcer.

Dr. ARMSTRONG presented a young woman upon whom he had operated some weeks before with a view to closure of a perforated gastric ulcer. Dr. W. G. M. Byers read the report of the case as follows:

She was admitted to the Montreal General Hospital at 4 o'clock in the afternoon of the 9th of October, 1895, complaining of severe pain in the abdomen. She stated that when about to retire the night before, that she was suddenly seized with severe pain in the epigastric region, which spread down along the left costal margin, and involved, during the course of the night, the whole of the abdomen. She could put the end of one finger over the point of maximum tenderness and pain. This point was situated beneath a line drawn from the tip of the 8th rib on the left side to the umbilicus, and about two fingers breadth beyond the costal margin. She did not feel any nausea, but she had induced vomiting twice during the night. She complained of headache, complete anorexia, thirst and dryness of the lips and mouth. The bowels moved once after the onset of the symptoms. She gave a history of having suffered more or less during the past five years from indigestion, weakness, constipation and slight hæmorrhages. For these symptoms she had been treated at the out-door department of the Montreal General Hospital.

I saw this woman about two hours after her admission to the Hospital, and found, in addition to the condition above noted, some fullness and rounding up of the lower part of the abdomen, with slight retraction of the upper zones. The liver dullness was distinctly less than normal, measuring in the nipple line only two inches, and in the mid axillary line two and a quarter inches. Cardio-vascular respiratory, and urinary systems normal. Red blood corpuscles in the neighbourhood of six millions, hæmoglobin eighty per cent. These

symptoms taken in conjunction with the past history of indigestion and chlorosis, and the situation of the point of maximum tenderness, made the diagnosis of perforated gastric ulcer tolerably certain, and the indications were clearly to open the abdomen, close the perforation and remove the escaped matters and products of inflammation already formed.

Operation Oct. 9th, 1895. Incision in the median line, midway between the ensiform cartilage and the umbilicus, on a level with the point where the pain was said to have started.

On opening the abdominal cavity there was an escape of gas, and the lower border of the liver, and part of the anterior wall of the stomach were visible. The edge of the liver was raised and pushed upwards, and the anterior wall of the stomach was found to be adherent on the left side of the median line, to the anterior parietal peritoneum, by soft adhesions, which were easily separated by the fingers. Above, the anterior wall of the stomach was adherent to the under surface of the liver.

Upon separating the adhesions between the stomach and liver, and passing the finger along the anterior wall of the stomach toward the cardiac end, an opening in the stomach was come upon, large enough to admit the first finger up to the second joint. The walls of this opening were felt to be fully an inch thick; and on pulling the stomach forward, nearer to the abdominal opening, the greater part of this was ascertained to be composed of a thick layer of organized lymph.

As the thick layer of organized lymph would not retain sutures I peeled it off and then found that there had been an attempt to close a large ulcerated rent in the stomach by means of this layer of plastic lymph.

When the lymph had been completely separated, and the edges of the opening brought into a straight line, it measured three and a half inches in length.

The mucous membrane was everted over the edge of the opening, giving it the appearance of an indolent ulcer with the granulations raised above the margin.

The edges were brought into apposition and held by through and through or over and over sutures, passed through all the coats of the stomach. The mucous membrane being infolded so far as possible.

A second row of Lembert sutures was now put in infolding the first, except at the deepest part, where on account of the depth and exudation of the lymph, this could only be imperfectly done.

Leading to this spot a drainage tube of rubber was introduced, and

packed around with iodoform gauze. The wound was closed with silkworm gut sutures.

A small opening was made below, above the pubes, for drainage; a considerable amount of yellowish, turbid, sero-purulent fluid escaped: a glass tube was then inserted into Douglas' pouch.

Her condition on leaving the table was good.

The patient is now, as you see, able to go about quite well. She takes three good meals a day with relish and her digestion is apparently normal.

Dr. JAMES BELL, after congratulating Dr. Armstrong on the success of his case, asked if there had been any attempt at limitation of the inflammatory process in the abdominal cavity, and if Dr. Armstrong had flushed out the cavity with water or saline solution. He agreed that there was great difference in virulence between the contents of the stomach and those of the intestines; the contents of the stomach did not contain the same pathogenic microbes as the lower tract.

Dr. J. G. ADAMI said that Dr. Armstrong's view that the virulence of microbes varied was now well established. In the stomach there was, as a general rule, an acid secretion or acid contents, conditions under which pathogenic organisms did not thrive, as growth was inhibited by acids. Lower down in the intestinal canal the alkaline secretions and broken down proteid matter furnished much more suitable conditions. There was not much proliferation of pathological microbes in the stomach, but it was active in the intestines—that is to to say, that in a given cubic centimetre of stomach contents there is a much smaller number of pathogenic micro-organisms than in a cubic centimetre taken from the intestine. Probably for the same reason tuberculosis did not often infect the stomach walls as compared with the frequency with which it was found in the intestine.

Dr. LAFLEUR pointed out that the easiest proof of virulence had been neglected in not making culture experiments. It was known that if there was an anatomical lesion of the peritoneum, a chemical irritant produced a peritonitis, which would be very much less virulent than one caused by micro-organisms.

Dr. R. C. KIRKPATRICK had assisted Dr. Armstrong and could bear out all he had said relative to the size of the perforation, which he had measured at the time, and it had seemed to him scarcely possible to bring the edges together. Recovery, he felt, had been largely due to the fact that the glass drain had been inserted into the pelvis and the fluid collecting had thus been drawn off. As an instance of variability in the virulence of infection, Dr. Kirkpatrick related a case on which he had operated for appendicitis two weeks before, where cul-

tures had been made from the pus with a negative result, but he had had to open up the abdomen again on account of pus having collected beside the track of the drainage tube.

Dr. ARMSTRONG, in reply, said that there had been no limitation of the inflammatory process, and that he did not flush out the cavity, but wiped it out thoroughly with gauze pads. He did not know why cultures had not been taken at the time of the operation.

Transposition of Viscera.

Dr. T. P. SHAW showed a case. (See page 517.)

Dr. G. G. CAMPBELL referred to a case of cardia-dextra which had been in Shepherd's ward in the Montreal General Hospital during his term of residence there. (See page 515.)

Dr. T. D. REED had seen a similar case demonstrated by the late Dr. Scott. He had once been speaking to a non-medical audience on the heart, when he was reminded that Solomon had said, "The heart of the wise man is at his right hand."

Dr. J. A. SPRINGLE had a case in which cardia-dextra alone existed. The patient, a man of forty, suffering from pulmonary tuberculosis, stated that he had always thought that the heart was on the wrong side, but as he had been examined twice for life insurance and the examiners had not remarked upon the conditions, he paid no attention to it. The speaker also drew attention to the large percentage of deaths resulting from tuberculosis in cases in which partial or complete transposition of the viscera existed. Why this was so he did not know. Anomalies of the vessels from the aortic arch were frequently seen in these cases.

Some Morbid Conditions of Intestines.

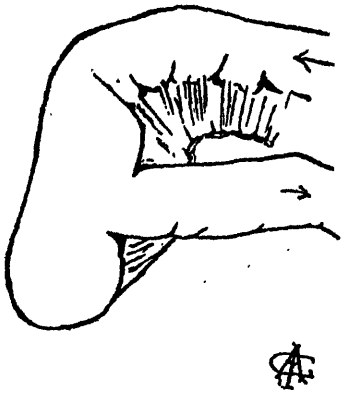
Dr. ADAMI exhibited a series of morbid conditions of the intestines obtained recently in the post-mortem room of the Royal Victoria Hospital.

Two Cases of Meckel's Diverticulum.

Of these one was of the usual type, and was brought before the Society purely for comparison with the other. It was obtained from the body of a male patient aged 15 years, and was given off from the ileum 103 cm. (about 3 ft. 7 in.) above the ileo-cæcal valve. The diverticulum (about 4 in. long) passed off roughly almost at right angles to the general direction or axis of the intestine; associated with it there was no sign of obstruction.

The other case showed an unusual complication. In this the diverticulum presented itself most clearly as a continuation of the

upper portion of the ileum 63 cm. above the valve. It was short and broad (4 cm. by 4 cm.) and provided to its extremity with a very definite mesentery. The lower part of the gut was given off from the upper, at an angle greater than a right angle, or to put it more correctly, the angle formed by the mesenteric aspects of the two portions of the intestine was less than a right angle; and while the diameter of the diverticulum and the gut immediately above it was



Meckel's Diverticulum, M. S., æt. 8, half the normal size.

4 cm., that of the lower continuation of the ileum was only 2·5 cm. Thus the relationship of the parts had very evidently led to a partial obstruction. The passage from the upper to the lower part of the ileum assumed a slit-like or valvular character. The arrangements of the part, in fact, closely copied, although in a reverse direction, the relationship of ileum to cæcum. This second case occurred in the body of a girl aged eight years.

Healed Intestinal Anastomosis.

Dr. ADAMI exhibited this specimen in order to show the perfect condition of healing of the intestinal wall and the condition of the wounded portion of the intestine three weeks after operation. The specimen was taken from the body of a female patient aged 51. The case presented some points of considerable interest, and Dr. Adami was indebted to Dr. Shaw for the notes in reference to it. For ten days the patient had shown signs of intestinal obstruction, with vomiting and ineffectual action of purgatives. Upon October 5th she vomited stercoraceous matter, and was admitted into the Royal Victoria Hospital under Dr. Bell. Here she presented a distinct abdominal facies, and a small resistant mass was to be felt in the right inguinal region. Dr. Bell operated the same day and discovered that there was a Littré's hernia, a small loop of the intestine without the mesentery being caught in the internal abdominal ring. Through

gangrene along the edge of incarceration a small perforation had resulted, without there being any gross escape of fæces. He cut out a wedge of the wall of the ileum, including the necrosed area, and sutured by Lembert's suture. At first the patient progressed very favourably, but eventually symptoms of partial obstruction supervened, followed by those of acute peritonitis, and the patient died twenty-one days after the operation. At the autopsy there was found evidence of old adhesive peritonitis in the shape of well organized bands in the hinder portion of the abdomen. This represented a condition much older than the final illness. There was, in addition, a sub-acute adhesive peritonitis around the operation wound, and besides this localized condition there was generalised peritonitis. In separating the cæcum a drop of pus was found between the viscus and the abdominal parietes, and there was in addition an adhesion between a loop of the ileum and the right Fallopian tube. Here again on separation some pus exuded, and upon opening the right Fallopian tube there was found a condition of pyosalpinx of moderate extent. It was difficult to explain the setting up of acute peritonitis and subsequent death of the patient, save on the supposition that the slight degree of obstruction, brought about by the developing organized adhesions in the neighbourhood of the wound, had led to a lowered vitality of the intestines and abdominal contents in general, and thus had led to conditions favouring a second infection of the peritoneum.

Congenital Absence of the Appendix Vermiformis.

The specimen exhibited had been obtained from the body of a male child 3½ weeks old. The cæcum was continued 11 mm. beyond the lower border of the junction of the ileum to the large gut; anteriorly the lower extremity of the cæcum had the appearance of a truncated cone; posteriorily the appearance was that of a blunt cone turned upon itself for 10 mm., the portion thus turned round having a blunt rounded extremity, and being fused to the body of the cæcum. From the blunt termination, a fine fibrous filament 9 mm. long passed upwards along the postero-internal border of the cæcum. It was attached to a continuation of the mesentery, just as is the true appendix. But while possibly this might be said to represent the appendix, it was merely a solid fibrous thread, so thin as to be almost unrecognisable, and the appendix as such, could only be spoken of as being absent. In other respects the shape of the cæcum closely resembled Treve's picture of the cæcum of the Mangaby ape.

Chronic Perityphlitis, Causing Intestinal Obstruction.

Dr. ADAMI exhibited a specimen prepared and dissected by Dr. C. F. Martin of this condition which, but a few years ago, was thought to

be not unusual, but which now-a-days as an uncomplicated condition is regarded as being distinctly rare as compared with typhlitis or appendicitis, with its sequelæ.

The specimen was obtained from a man about 35 years old, in whom symptoms of intestinal obstruction were first noticed upon October 3rd, 1895. The patient died six days later. While the patient himself gave the history of continued good health up to the time of the last attack, his wife stated that since he was nine years old he had been subject to abdominal pain, at intervals. The notes (by Dr. Colvin) are of necessity very brief. On admission to Dr. Bell's wards at the Royal Victoria Hospital, the patient presented an abdominal facies, the abdomen was distended and tympanitic, and so tender as to prevent examination. There was frequent vomiting in gushes, and the patient died within a few hours, before the operation for which he had entered the hospital, could be performed. At the autopsy veil-like organised adhesions were found between the omentum and the abdominal parietes, as also between the large intestines and the abdominal wall. Besides this evidence of chronic and old peritonitis, there was a general condition of acute early peritonitis, with great injection and dulling of the serous coats of the viscera, slight dry exudation between the coils and relatively very little fluid present. In the right iliac fossa the following parts were found adherent by old dense adhesions, viz., the transverse colon, the second part of the duodenum, and coils of the ileum. These adhesions had led to narrowing of the lumina of these viscera, the narrowing was greatest at two places along the ileum, and here evidently, judging from the diameter of the intestine of the uppermost of these, the obstruction had taken place, it was however noticeable that the obstruction was incomplete, and as a consequence it would appear that the actual complete stoppage was due to kinking at the sharp bend of the adherent coil. There was no sign of gangrene anywhere or of perforation, and in this case, as in that first previously mentioned this evening, the acute peritonitis must be regarded as having been due to the obstruction bringing about such a condition of the coats of the intestines as to lead to the infection of the serous surfaces. Here presumably by passage outward of bacteria through the intact walls. All the adhesions met at the cæcum round about the attachment of the appendix, and here thick fibroid tissue held all the parts firmly together. The appendix, however, situated in the midst of this fibroid area showed in itself no signs of disease, save that it was bound down in a somewhat coiled fashion by the surrounding adhesions. There was no sign of constriction of its lumen at any

point, of inspissated contents or dilatation. Its coat, when the surrounding, moderately loose adhesions were removed, was smooth and presented no cicatrices or evidence of old perforation I have already examined not a few appendices, removed in cases of so-called appendicitis, in which, while there was abundant evidence discovered at the operation of acute inflammatory disturbance around the appendix, sections from the organ itself showed but little that was specially noticeable beyond the dilated and influenced condition of the vessels of the outer coat. The specimen here shown would seem to be an example of a possible sequela to such cases as these.

Torsion of an Appendix Epiploica.

Dr. ADAMI brought this specimen before the Society, not because of its importance, but because it exhibited a condition which might reasonably be expected to be more frequent. The appendices epiploicæ vary greatly in extent and in arrangement. Often they are present as more or less fanlike or fingerlike fatty masses given off at right angles to the circumference of the gut in the plane of the transverse axis, often however, they are isolated pedunculated masses, as in the present instance which showed several such appendices. Here the pedicle of one had become twisted, and as a consequence there was venous arrest; the organ was turgid, hæmorrhagic, and when first obtained of a dark, blue-black colour. Such a condition might, in the presence of any wandering suppurative micro-organisms, be the origin of a localized or indeed of a generalized peritonitis.

Dr. JAMES BELL, speaking of the last case, said that he had been called to the country to see the patient on October 4th. There had been symptoms which set in suddenly and acutely nine days before, and a mass could be felt in the abdomen on deep pressure, which was thought by her physician to be a uterine fibroma. Just before he arrived at the house the patient fell into a condition of collapse, and no operation was then performed. She, however, rallied and was brought down to the Royal Victoria Hospital the next evening. The abdomen was then opened and a Littré's hernia found. There was free pus in the peritoneal cavity, but no fæces. A perforation had taken place, probably when the collapse occurred thirty-six hours before operation. The bowel was closed by a double layer of Lembert's sutures. For two weeks the patient did well, then for a week there was vomiting, but without other signs of obstruction; fæces and flatus passed freely. Calomel was given, which produced a copious evacuation of the bowels. The cause of death was not obstruction in the ordinary sense, and the only explanation he could offer was that suggested by Dr. Adami, viz., that on account of the

long obstruction the vitality of the tissues of the bowel wall was lowered, as well as the general vitality of the patient, and thus the colon bacillus was allowed to escape into the peritoneal cavity.

Experimental Removal of the Thyroid Gland.

Dr. D. J. EVANS showed for Dr. Wesley Mills, who was unavoidably absent, the dog that had been exhibited in good condition at a previous meeting, though one-half of its thyroid gland had been removed two weeks before. Four days prior to the meeting, the other half of the gland had been removed. The dog since the operation had been fed on bread and milk, no meat, as the latter is thought to hasten the onset of the cachexia. He had been given one thyroid tablet (Armour's) containing two grains of desiccated thyroid on the day of the operation, and three every day since. On the second day after the operation the usual symptoms of the cachexia appeared in characteristic form and had been present since, though, as they were intermittent, the cachexia was not very evident at the time the dog was before the Society. In this case the tetanic spasms and other nervous symptoms had been more pronounced than the dyspnœa. Emaciation was moderate. Another healthy intact dog was being given thyroid tablets as a control experiment. Dr. Mills proposed to report the results in these cases to the Society later.

Notes on the Medical Examination and Measurement of Athletes.

Dr. R. TAIT MCKENZIE read a paper on this subject. (See page 496.)

Dr. T. D. REED thought that the work done by Dr. McKenzie was very valuable and should be encouraged. He had himself done work of a similar kind, but of a more elementary character, among the lady pupils at the McGill Normal School. The average age, he found, was 19, the height for the present year 5 feet 3 inches, which was an inch more than the generally accepted average for the age; the weight 123 pounds. The length between the finger tips with the arms stretched out to the fullest extent was half an inch less than the height, on an average. The spirometer gave an average vital capacity of 133 cubic inches, the extremes being 100 and 180 cubic inches. One pupil in nine he had found myopic; hearing and colour sense invariably good, thus in 200 tested he had found no instance of colour blindness, and this condition, he thought, must be very rare in women. The muscular power of the hand averaged 33 for the right hand and 30 for the left, varying between 11 and 80. In the whole 200, at the average age of 19, only one had perfect teeth, and she had not yet erupted her wisdom teeth.

Dr. D. J. EVANS had examined the members of the Y. M. C. A.

before they were allowed to work in the gymnasium. They were principally young mechanics and clerks from sixteen years of age upwards, and he was astonished to find the number that were unfit to take active exercise. A great number had rapid pulse, a few were below 70, but the greater number over 100, even after sitting still for some time, and the pulse was also intermittent in a number of cases.

Dr. W. S. MORROW asked Dr. McKenzie if he put cycling among those exercises which he classed as moderate, and if so, why? He thought that if one allowed a young man to ride a bicycle one could not restrict him to slow riding. His own opinion was that cycling brought about a very rapid action of the heart.

Dr. SHEPHERD congratulated Dr. McKenzie on a paper that introduced a subject new to the Society. It was of the highest importance that every school and university should insist on a medical examination of the pupils and students. Many boys were totally unfit to play games, especially violent games like football. As a rule, he thought that athletes did not succeed in medicine, they were shorter lived than others, and did not seem to have the reserve force that those who led a more sedentary life possessed.

Dr. J. G. ADAMI could not agree with Dr. Shepherd's in decrying the value of athletics for medical students. As a class they needed and demanded exercise. It was noticeable that in every university having a medical school the "meds" led in strong sports like football; that strong men with strong vitality naturally tended to study medicine; that strong, athletic men were required for our profession, and we got them.

Dr. SHEPHERD said that he did not refer to the average student, but to the extreme athletes. It was not the great book-worm nor the great athlete, but the man of medium type who would succeed.

Dr. J. C. CAMERON thought Dr. McKenzie was to be very much congratulated upon his interesting and important paper. He thought of even greater value was the suggestiveness of the paper. While all were agreed that exercise is useful and often essential, its value as a therapeutic agent had not been realized or properly utilized. With regard to diet, most physicians would not deal in generalities merely, but would consider it necessary to indicate what particular articles should be taken and what should be avoided. But with regard to exercise they were too often content to advise their patients to take more exercise, or to avoid violent exercise, without specifying the amount and kind of exercise which should be taken or avoided. But in order that suitable exercises may be prescribed for different pathological conditions, physicians must have clear ideas respecting the

various convenient combinations of movements and their therapeutic effect. In this respect the paper of the evening was of great value on account of its suggestiveness. He hoped that Dr. McKenzie would continue his investigations, and that the university would recognize their importance and provide him with a well-appointed gymnasium and proper facilities for carrying on a work for which he had shown himself to be so eminently fitted.

Dr. J. B. McCONNELL said that this paper opened up a large subject much neglected by the medical profession as a whole, and he was glad to see that one of the members was devoting his attention to it. It was of importance in our universities to have the physical training of the students looked after, but of even greater importance to have it looked after in the public schools, and a perfect system of exercise, he felt, would bring a great change in the standard of health; of equal importance also would be a proper physical examination of each pupil in regard to the condition of all the more important organs of the body, especially those of sight and hearing. He also congratulated Dr. Reed upon his work, as he thought that the need of proper exercise was more felt among women than among men. The female sex suffered from want of it, and were thus often improperly developed.

Dr. R. C. KIRKPATRICK had assisted in the examination of the young men in the Y. M. C. A., and what struck him most forcibly was that frequently one shoulder was higher than the other. This deformity was probably due to standing at a desk, or had been acquired at school. Children should be made to stand and sit squarely at their desks, and they should be examined from time to time, so that any incipient curvature might be remedied.

Dr. R. T. McKENZIE, in reply to Dr. Morrow, said that he had classified cycling among the moderate exercises, as it did not require the prolonged strain on the heart which holding the breath, as during heavy lifting, entailed. It was not within the power of a wrestler or a football player sometimes to avoid a severe strain, but the rider could at any time relax his efforts.

In reply to Dr. Shepherd, he thought a young man must use up his superabundant vitality in some way, and that athletics was the best form. It has been found that the athlete is a little above the average man in scholastic attainments.

The drooping of one shoulder, referred to by Dr. Kirkpatrick, was in all probability chiefly due to the cause mentioned, a faulty position at the desk. In only one case had he found drooping of the left shoulder.

Two Cases of Renal Calculi.

Dr. J. A. MACPHAIL showed for Dr. J. A. Springle, specimens of renal calculi removed during the previous week at the Western Hospital. The first was an oxalate stone, weighing two ounces, taken from the kidney of a man aged 65 years, who had suffered from it for over thirty years. The second specimen was a right kidney removed from a woman of 28 years, who had complained of colic and other symptoms of kidney stone for five years. Perirenal abscess existed, with protrusion of a calculus through the pelvis of the ureter. The kidney substance was considerably injured by four other calculi in the sinus of the organ itself. The stones consisted of oxalates and phosphates and weighed three ounces.

DR. SPRINGLE was not altogether satisfied that the removal of the kidney in this case was above all criticism, yet the condition at the time of operation seemed to give no other alternative.

Carcinoma of the Liver.

Dr. J. A. MACPHAIL showed two specimens obtained at an autopsy upon the body of a woman 67 years of age in the practice of Dr. McConnell. The one was a liver weighing twelve pounds thickly sown with nodules of alveolar carcinoma, the other a virginal uterus carrying four subserous fibromata.

Dr. Macphail thought it worthy of note that this patient was unconscious by sign or symptom of either of these conditions until they were related to her by her physician four days before death.

Dr. A. L. SMITH referred to a case which he had had a year or two before in which a cancerous liver had grown to such a size that it reached down to the edge of the pelvis and almost filled the abdomen. Although the case was hopeless, he had called Dr. Finley in consultation in order to verify the extraordinary size of the organ.

Stated Meeting, November 29th, 1895.

A. D. BLACKADER, M.D., PRESIDENT, IN THE CHAIR.

Dr. D. A. Hart, of St. Lambert, Que., and Dr. L. C. Prevost, of Ottawa, Ont., were elected ordinary members.

Additional Cases of Pyocyaneus Infection.

Dr. J. G. ADAMI exhibited cultures made from these cases and gauze dressings showing the characteristic blue colour, and Dr. KENNETH CAMERON reported the history of one of the cases, which will appear next month.

Pyæmia in a Dog.

Dr. C. F. MARTIN exhibited the specimens, which he described as follows:

The specimens here presented were removed from the body of a dog which died recently at the Hospital of the Faculty of Comparative Medicine. His symptoms were those of some septic infection and the diagnosis of pyæmia was made, the cause being attributed to an injury to and subsequent operation upon the tail.

An autopsy revealed a much enlarged and hæmorrhagic spleen, in which were multiple minute abscesses. The kidneys were enlarged, had a pale surface and widened fatty cortex, in which were many hæmorrhages and some necrotic and hæmorrhagic infarcts. Numerous small abscesses were distributed over the cortical portion of the organ. The liver was congested and showed small areas of necrosis. The heart contained a large amount of dark semi-fluid blood. The aortic valves were somewhat thickened and manifested evidence of vegetative malignant endocarditis, as well as several deep ulcers, some at the free edge of one of the valves, and others at the attached margins. The latter encroached to some extent upon the myocardium. There was no evidence elsewhere of disease in the viscera. The lungs were normal. On examination, the stump of the tail showed a condition of thrombo-phlebitis.

Microscopic examination of the organs verified gross appearances. The condition was one, therefore, of infection chiefly of the systemic circulation, while the pulmonary system remained practically free. Inasmuch as the conditions under which the autopsy was performed did not favour a bacteriological examination, no satisfactory report can be given in this respect. The bacteria present were, however, cocci arranged in irregular groups, never in chains, and had the usual appearance of staphylococci.

The case is recorded and specimens shown inasmuch as the literature on such conditions in dogs is remarkably deficient, and text-books do not even mention the possibility of such an occurrence.

Dr. WESLEY MILLS gave the following history of the dog from which the specimens exhibited by Dr. Martin had been taken:

A spaniel whose tail had been injured by a street car was brought to the hospital of the Faculty of Comparative Medicine for treatment some time after the injury. The stump was foul and amputation was performed about four inches from the root. The wound not healing well there was another amputation eight days afterwards, antiseptic precautions being taken during both operations. The animal seemed to be doing well till the morning of the fifth day, though its appetite was not as good as could be desired. At the date referred to, the temperature was 104° F., and the dog was dull and generally out of condition. Alcoholic stimulants and beef tea were administered, but

to no purpose, and death took place on the following morning. The diagnosis of blood poisoning had been made.

Dr. Mills further reported the case of a pure-bred pointer bitch that died from the same malady, the only source of infection discoverable being a small wound resulting in a very small abscess on the mammary gland. The illness was of short duration, and few evidences of gross lesions were found post-mortem.

Recently he had seen a case which he did not doubt was pyæmia. The animal, a small Irish terrier, had received a few small wounds about the neck and shoulder in a fight, one of which had gone on to abscess formation. The bitch had rapidly lost flesh and was in bad condition generally. The abscess was opened and cleansed. The animal recovered, but regained its former condition only after several weeks.

From the cases he had seen Dr. Mills would conclude that in the dog the disease is readily induced and very dangerous, but occasionally recovered from under proper treatment. The symptoms and pathological changes are very like those in man, as would be expected in animals so closely related physiologically, and it was to emphasize this physiological and pathological resemblance that he had reported these cases so soon after the fatal case in man, brought before the Society by Drs. Hamilton and Martin.

Two Cases of Mycetoma Pedis.

Dr. J. G. ADAMI exhibited the specimens. (See page 485.)

Dr. F. J. SHEPHERD said he was much interested in these cases. Fifteen or sixteen years before he had had a case of what he now knew to be Madura foot. It was painless, showed a number of sinuses with fungating borders, and was looked on as a case of general necrosis. The man was a native of this country and had never been out of it. He had refused operation at the time and has not been heard of since.

Tumour of the Lung.

Dr. J. G. ADAMI exhibited the specimen. (See page 510.)

Six Year's Experience in Abdominal and Pelvic Surgery.

Dr. LAPTHORN SMITH read a paper on and presented a list of all the abdominal sections he had performed up to the 20th November, 1895, to the number of 143, with 11 deaths. Of these, all but eight, which were performed at the patient's own home, were done in public or private hospitals.

The death rate was shown by comparison of the statistics of each year to have been gradually reduced from 17% in 1892 to 3½% in 1895; the number of cases operated on had increased very considerably. The rate for the whole time was 7½ per cent.

These abdominal sections were performed for the following reasons:

	Cases.	Deaths.
Removal of large tumours of the kidney by the abdomen	2	0
Extra-uterine pregnancy	3	0
Large ovarian tumours	8	1
Abdominal hysterectomy	11	3
Ventral or umbilical hernia	7	0
Obstruction of bowels of long standing	2	2
General peritonitis following miscarriage	1	1
Tubercular peritonitis	2	0
Large cancerous tumours of ovaries	1	0
Puerperal septicæmia, cleaning out pelvic abscess	1	0
Ruptured pus tubes	1	0
Removal of appendages for fibroid tumours	4	0
Pus tubes	42	3
Cystic ovaries and chronically inflamed tubes	9	1
Hydrosalpinx	6	0
Ventrofixation, including rapid dilatation, curetting, repair of lacerated cervix and perineum, and in some cases removal of dermoid tubes and ovaries	43	0
	143	11

He then gave a detailed account of each case that resulted unfavourably, showing how several of them would probably have been saved, if he had at that time known about the Trendelenburg posture, which has completely revolutionized pelvic surgery and converted disasters into brilliant results. Four of the deaths would have been prevented if the patients had been sent for operation earlier, the death rate being due to longer anæsthesia required in dealing with adhesions, and greater hæmorrhage when tumours had been allowed to become larger before being removed. One of the deaths was due to drainage tube infection; and one to infection by iodoform gauze packing. He no longer uses either of these devices, because they are no longer necessary, for by means of the Trendelenburg posture he was able to tie all oozing points and cover all raw surfaces with peritoneum. Three of the eleven deaths had no connection whatever with the operation, but eight of them were due to the operation. The remote results were then gone into carefully. Three cases of the 132 which recovered from the operation died from the progress of their disease within four months. Of the remaining 129 cases, one is not cured, having still an acrid discharge from the uterus, which may necessitate the removal of that organ, and 3 cases of ventrofixation are only partially cured, because they had only one ovary and tube removed when both were diseased. The latter patients now regret having insisted upon keeping an ovary in, and intend to have a second operation eventually. The remaining 125, which have nearly all been seen within the past year, are apparently cured, and many of them are in robust health. The most gratifying results were obtained from the six combined

operations at one sitting, including ventrofixation, performed on 43 women. The removal of the appendages for fibroid tumours was also highly satisfactory ; the reader thought that the operation should be preferred to hysterectomy in all cases in which, by reason of the size of the tumour, the total removal of it promised to be extra hazardous The two women whose abdomens were opened for puerperal septicæmia, in the one case the septic uterus being removed, and in the other a large pelvic abscess, walled in by omentum, being cleaned out and a large piece of omentum being removed, made excellent recoveries and are now alive and well. The former was the first case recorded in Canada of removal of the uterus for puerperal septicæmia. The removal of pus-tubes also gave excellent remote results, women who had been chronic invalids for years regaining their health and strength in a few months after the cause of their trouble had been removed. The operations, which had always been very difficult, did not, however, prove to be so fatal as he would have supposed. Two of the patients were brought to the hospital in an ambulance with an attack of peritonitis in full blast, and yet they made excellent recoveries after removal of the pus sacs. Even many cases in which the pus-tubes ruptured during removal, as well as one case in which the tube ruptured at the patient's home several times before operation also made good recoveries. One of the extra-uterine pregnancy cases walked out of his private hospital against advice on the twelfth day day, and another from the Western Hospital on the fourteenth day, and yet made perfect recoveries. He felt convinced that if all these cases were operated on before rupture, or soon after the first rupture, they would all recover.

As far as the effect upon the sexual feelings of the women was concerned, the patients might be divided into three almost equal classes : First, those who, after the operation, gradually lost all the sexual feeling which they had previously possessed ; second, those who never experienced it either before or after the operation ; and third, those who had never known sexual pleasure before the operation, but gradually experienced it more and more after the diseased ovaries had been removed. About half of the latter have now strong sexual appetite several years after the removal of both ovaries, Although his experience in abdominal section for removal of large diseased kidneys was so limited, he was very much in favour of this route because it enabled the operator to ascertain whether the patient had another kidney, and also because it allowed him plenty of room to see what he was doing and to do good clean work. One of the patients was 65 years old at the time of the operation and is now nearly 70 years old

and in perfect health. He strongly advocated leaving in the silk-worm gut sutures which close the abdomen, for thirty days; since he has been doing this, now some three or four years, ventral hernia following operation has almost become a thing of the past. He attributed his increasing success and diminishing death rate, 1st to the Trendelenburg posture; 2nd, to the A.C.E. mixture and quick operating requiring less anæsthetic; and 3rd, to his assistants and nurses being better trained and more thorough believers, as he was himself, in *absolute asepsis* from beginning to end.

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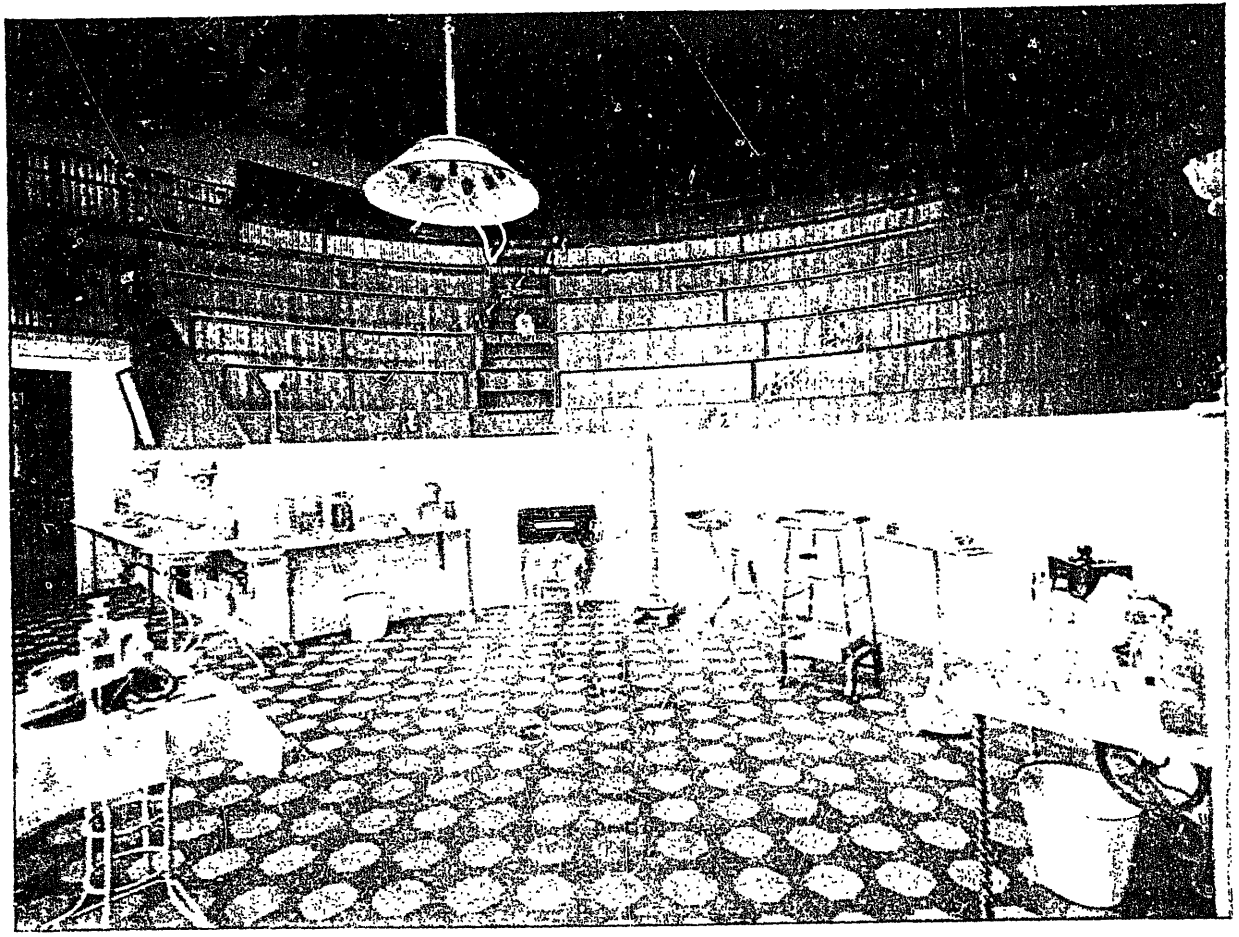
MONTREAL GENERAL HOSPITAL.

Our readers will doubtless be glad to learn that the old Montreal General Hospital, where so many of the medical men now engaged in active practice in Canada and the United States received their clinical instruction, has been transformed into a large and well appointed institution, a monument to the generosity of Montreal's citizens.

During the past five years over two hundred thousand dollars have been expended in the erection of new buildings and the remodelling of old ones.

Entering the hospital by a handsome portico supported on Grecian pillars we are ushered at once into the entrance hall or lobby. This is exceedingly spacious and handsome. The floor is of white marble, relieved by a pattern of small red tiles; the walls are delicately tinted and protected from injury by a burlap dado; the ceiling is supported by polished ash pillars, and altogether it is hard to imagine a more convenient or more tastefully arranged entrance for a hospital. Artistic benches are plentifully provided for the accommodation of the large number of people who come here on visiting days to enquire after their friends. Opening from this hall on the right is a large and well lighted office for the Medical Superintendent, on the left is the porter's box. A handsomely furnished reception room has been provided by the thoughtfulness of the committee of management, and the attractiveness of this room has been much enhanced by several oil paintings of considerable merit, presented by the President of the hospital. The entire ground floor of the east or Richardson wing has been made into a board room large enough to accommodate all the governors of the institution, nearly five hundred in number. The walls of this room are adorned by portraits of many of those who in the past have shown their friendship to the hospital—several mem-



OPERATING ROOM.

bers of the Molson family, the Hon. Justice Reid and his wife, John Redpath, Thomas Morland, Dr. R. Palmer Howard, a life-size portrait of Peter McGill, brother of James McGill the founder of McGill University, and many others.

The old staircases have all been removed and in their stead has been erected a fire-proof tower containing a spiral staircase and an elevator shaft. The elevator is sufficiently large to take in a bed or stretcher and runs from the basement to the top flat.

The ground floors of the Reid and Morland (west) wings have been arranged for the house staff, the private patients being accommodated on the floor above. Thanks to the kindness of the Medical Board the nucleus of what we hope will become in the near future a valuable consulting library has been formed and has been placed here within easy access of the resident and attending staffs.

On the first and second floors equally great changes will be observed. The small wards have been cleared out and their place taken by large, light, cheerful rooms. The bath-rooms and closets have been placed in towers built for that purpose in order to escape the danger of having soil pipes inside the walls of the building. The plumbing and sanitary arrangements are the best that could be obtained and are proving thoroughly satisfactory.

A large clinical laboratory has been provided. This room is supplied with all the apparatus and chemical reagents necessary for the examination of urine, sputum, etc. Students are required to conduct for themselves chemical and microscopical examinations in connection with the cases which they are reporting. This is becoming a very important part of a physician's work, and the practical training here received should prove invaluable to them in after life.

The new gynæcological operating room occupies the place of the old operating theatre. This is a particularly bright and cheerful room, with a good light, marble floor and dado, which can be freely flushed with water after each operation and kept thoroughly aseptic. Accommodation is provided for a limited number of students. Adjoining is an instrument and etherizing room.

The upper flat is given up entirely to the nurses as their residence. Here everything is provided for their comfort in the way of well furnished, airy apartments, and a large recreation room containing a piano and a library.

The basement has been asphalted throughout and has been so divided up that in one part special isolating rooms are obtained where any suspected or dangerous case can be kept under observation. A well-appointed dispensary is also situated on this flat, as well as the

out-door department, and a special room for preparing and applying plaster of paris splints, plaster jackets, etc.

The out-door department of this hospital has always been very largely attended. Besides the ordinary medical and surgical clinics, special ones are provided for diseases of women, nose and throat, eye and ear, children, skin and nervous diseases. The report for last year shows that over forty thousand consultations were held in the different departments. This part of the building has been arranged with a special view of affording opportunities for clinical study. There is a small operating room with tiled floor and marble wainscot, a dark room for ophthalmoscopic work, a room with fifteen stalls for laryngology, waiting room, examination rooms, and a complete outfit of instruments and appliances.

At the east end of the hospital a new building has been erected for the pathological department. It is built of cut stone to match the older walls and is two storeys in height. The ground floor is occupied mainly by a large room which is used for religious services, inquests, etc. On the upper floor is a large, well-lighted pathological laboratory; also an autopsy room fitted with a revolving slate table and all the appliances necessary for conducting post-mortems examinations together with an amphitheatre capable of accommodating a large number of students. The refrigerator is on the ground floor and affords accommodation for as many as twelve cadavers. A hoist connects this room with the autopsy room above. There are, besides several smaller rooms which are used as private laboratories and culture rooms. A museum is attached to this department where typical and rare pathological conditions can be studied microscopically. The opportunities for study afforded by this department are unusually great, for during the session there are always a number of medico-legal autopsies, hence the student has an opportunity of seeing the method of examination pursued in determining the cause of death occurring under suspicious circumstances. Another opportunity for study is afforded by the fact that all the bacteriological work in connection with the civic infectious hospital is done in this laboratory. This hospital is under the management of the Society of the Montreal General Hospital, and is placed in a separate building situated on the outskirts of the city. About eleven thousand dollars have been expended in building and equipping the pathological department, and it has been found to be splendedly adapted for its purpose.

The kitchen, laundry and the dining-rooms for the resident staff, the nurses and the servants are in a separate building arranged for that purpose. In this way the smell of cooking and of washing is

avoided and the air of the hospital is consequently much pleasanter. Covered glass corridors connect this building with the main building which we have just described.

The surgical part of the hospital is contained in two pavilions for the reception of patients and, connecting these, a surgical amphitheatre. These buildings were finished over three years ago and afford a splendid example of modern hospital construction. In the centre building the basement is given up to the boiler and engine room. A battery of four boilers supply steam to the entire hospital for heating and cooking. Here also are situated the fans by which the system of forced ventilation is kept up. A word about this may not be out of place here. The cold air is drawn into the building through a filter of cotton which removes the soot and dust, it then passes over pipes which are set vertically in order to avoid condensation and are heated by steam at high pressure; thence the fans force it into the tunnels which convey it to the wards which it enters near the ceiling, while the vents for its escape are situated near the floor. In this way the ventilation is thoroughly carried out, the air being changed every ten minutes, and the wards are heated at the same time, a matter of great moment in this climate of extremes. The ground floor contains a large cloak room for the students, with toilet rooms attached, a waiting room for the surgeons, rooms for admitting ambulance cases, etc. The floor above is given up to the operating room with its service rooms. The amphitheatre has seating room for four hundred students and the operating space is very ample. Massive slabs of white marble divide the one from the other, the fixed tables for the display of instruments and dressings being of the same material supported upon nickel-plated metal rods. The floor is of red and yellow tiles, and the result has been to make this a place where operations can be conducted according to modern principles of asepsis. To the right is the room where the patients are etherized and prepared for operation, and opening out of this is the sterilizing room where the dressings are prepared. To the left are the robing and wash rooms for the surgeons, recovery rooms for male and female patients, splint rooms, and accommodation for the nurse in charge. The service of this department is very active, the three ambulances attached to the hospital bringing in a great many accidents, as the hospital is situated in the heart of the manufacturing and business part of the city. Last year's report shows that more than five hundred major operations were performed during that period.

The pavilions, two in number, run back towards the south and are separated by a lawn seventy-five feet wide. They are built of pressed

brick and consist of a ground floor for the accommodation of servants and two floors above, each containing one long ward (132 × 38 × 16 feet), two private wards, kitchen and bath room. In each of the four public wards there are twenty-five beds, thus giving 100 surgical beds, besides which are a number of private wards. These latter are newly furnished in oak. The wards are well proportioned and lighted from both sides, thus giving cross ventilation in summer and abundance of sunlight in winter. The ceilings and walls are painted in oil to allow of thorough cleaning; the furniture and bedding are new, so that it is difficult, with the general brightness of everything, to imagine anything better or more suitable for the purpose.

In conclusion, a few remarks about the resident staff and their work. The charge of all departments is vested in the Medical Superintendent. Under him are six resident and one non-resident medical officers, who carry out the directions of the attending physicians and surgeons.

Connected with the hospital is a large training school for nurses, modelled after the training school in connection with the New York Hospital. The nurses all receive a thorough training in medical and surgical nursing, and steps are now being taken to afford them also a training in maternity work, and in the near future the nurses graduating from the Montreal General Hospital Training School will have the triple qualification. The applicants for positions in the training school are from a very superior class, many of them undertaking the work more for the love of it than as a qualification for the gaining of a livelihood, although the demand for their services after they have left the hospital is often greater than can be supplied.

There were last year admitted to the wards of the hospital 2,342 patients. The death rate was 4·9 per cent., which is very low, when the number of desperate cases who die within twenty-four hours after admission is considered.

The bedsteads and bedding, and in fact all the hospital furniture are new, and a prosperous era is expected.

A DOCTOR OF THE OLD SCHOOL.[1]

It is with unfeigned pleasure that we view the appearance of this section of Ian Maclaren's delightful "Bonny Briar Bush," containing, as it does, not only one of the finest creations of character in modern literature, but also a creation warming the hearts of the members of our profession. Perhaps it is wrong to speak of Weellum MacLure

[1] By Ian Maclaren, with illustrations by Frederick G. Gordon. Toronto: Fleming H. Revell & Co. 1895.

as a creation. We, knowing our *confrères* in the old country and in this Canada of ours, know that Weellum MacLure is more truly a likeness, and in a kindly little preface to this new edition, the author acknowledges as much. "To answer a question," says he, "that has been often and fairly asked, Was there ever any doctor so self-forgetful and so utterly Christian as William MacLure? To which I am proud to reply, on my conscience, not one man but many in Scotland and in the South country. I will prophecy also across the sea."

It warms our hearts to feel assured that the profession we love is capable of producing, and is ever producing, men like the doctor of Drumtochty. And in the days when our spirits are low, and we doubt whether the world appreciates us: when hours of care appear only to be repaid by forgetfulness, or by a desire not to obtrude the thought of unpaid debts upon us, it is pleasant to meet with those who read into the doctor, what he would be and what he tries to be.

Who can read, without being more deeply stirred than he cares to acknowledge, perhaps even to himself, the doctor's night with Drumsheugh at Saunders' cottage, and the fight with death; and who of us cannot picture vividly the visit of Sir George to the glen, and the great operation. Altogether, if there be any members of our profession who have not read the book, we counsel them to read it forthwith, aye, and we counsel their patients to do the same. In talking thus of the doctor, we have for the moment neglected the doctor's horse, who is in her way almost as fine a creation as the doctor himself, and who like him, has been most sympathetically rendered by the artist. In short, the illustrations to this exquisite little volume are thoroughly in keeping with the high standard of the book, in every other respect.

THE JOURNAL OF EXPERIMENTAL MEDICINE.

A suitable medium for the publication of articles embodying the results of original research is one of the most important conditions of fruitful scientific activity. The investigator in any department of science not only must know where to look for the literature of his own subject, but he needs a journal which shall furnish prompt and worthy publication of his own work, which shall supply good reproductions of all needed illustrations, and which by the character and excellence of its contributions shall circulate widely among all workers in the special fields of research embraced within its scope.

Within recent years scientific medicine has made great progress in this country. The standards of medical education have been elevated, well equipped laboratories devoted to the various medical sciences have been established and the number of well trained investigators has steadily increased. With these greater opportunities the contri-

butions to the medical sciences by American investigators are rapidly becoming more numerous and important.

Hitherto we have been deprived of the great assistance which can be rendered by a journal devoted exclusively to the medical sciences above specified. We ourselves, and still more foreigners, do not know where to look for many of the widely scattered original contributions of American investigators to physiology, pathology, bacteriology and other medical sciences. A large part of these contributions are published in journals devoted mainly to the practical branches of medicine. Much of the best work is now sent to various scientific journals of Europe.

The time has come when we should have an American journal devoted exclusively to the publication of original work in the experimental medical sciences. Such a journal is an urgent need of our scientific workers in medicine. It should secure both here and abroad due consideration of work done in this country. It should stimulate scientific investigation and should extend the influence of scientific medicine. The practitioner who wishes to keep abreast of the times will appreciate the value of such a publication.

It is the aim of *The Journal of Experimental Medicine* to meet the needs which have been described. The journal is to be devoted exclusively to the publication of articles containing the results of original work in physiology, bacteriology, pathology and the other sciences mentioned in the first paragraph of this announcement. Especial care will be taken to supply good illustrations whenever needed.

That the journal will be of high character and truly representative of scientific medicine in this country is assured by the character of those whose co-operation has been secured. It is believed that the interest in scientific medicine in this country and the desire both here and abroad to find readily accessible the publications of American contributors to the medical sciences will secure a large list of subscribers for the support of the journal.

Dr. William H. Welch, Professor of Pathology in the Johns Hopkins University, is to be the editor of the new journal, and with him will co-operate a board of twelve associate editors as follows:

For Physiology—H. P. Bowditch, M.D., Professor of Physiology, Harvard University; R. H. Chittenden, Ph. D., Professor of Physiological Chemistry, Yale University; W. H. Howell, M.D., Ph. D., Professor of Physiology, Johns Hopkins University.

For Pathology—J. George Adami, M.D., M.R.C.S., Professor of Pathology, McGill University; W. T. Councilman, M.D., Professor of

Pathological Anatomy, Harvard University; T. Mitchell Prudden, M.D., Professor of Pathology, Columbia College.

For Pharmacology—John J. Abel, M.D., Professor of Pharmacology, Johns Hopkins University; Arthur R. Cushny, M.D., Professor of Materia Medica and Therapeutics, University of Michigan; H. C Wood, M.D., Professor of Materia Medica, Pharmacology and Therapeutics, University of Pennsylvania.

For Medicine—R. H. Fitz, M.D., Professor of the Theory and Practice of Physic, Harvard University; William Osler, M.D., F.R.C.P., Professor of Medicine, Johns Hopkins University; William Pepper, Professor of the Theory and Practice of Medicine, etc., University of Pennsylvania.

Besides the editorial board named above a number of gentlemen have consented to assist as collaborators, and among them are two Canadians, Wyatt Johnston, M.D., Pathologist to the Montreal General Hospital, and J. J. Mackenzie, B.A., Bacteriologist of the Provincial Board of Health of Ontario.

The journal will appear in at least four numbers during the year and, doubtless, oftener. Whenever sufficient material is ready a number of the journal will be issued. A volume of six or seven hundred pages will be published annually, with many plates and diagrams.

McGILL MEDICAL LIBRARY.

The Medical Faculty of McGill University has long been in possession of a large and valuable special library, but until recently its use has been almost entirely confined to the members of the college staff. With a view of rendering the library more generally useful a reading-room has lately been opened, and the Faculty cordially invites physicians resident in the city to avail themselves of it.

It has been the aim of the Faculty to make the library as complete as possible in current medical literature. The leading periodicals are on file and back numbers are readily consulted, whilst the most important medical works are on the shelves. The books are at present being re-catalogued and arranged in accordance with modern methods by a trained librarian, a work which will greatly facilitate the use of the library. The hours of attendance are from 10 a.m. to 6 p.m.

The intelligent interest taken by McGill University in athletic sports, as outlined by Dr. Tait McKenzie in another page, is timely and important and is another evidence of the desire on the part of the University to develop her undergraduates into well educated, well

trained and manly graduates. Outdoor athletic sports form a not unimportant part of the University training, and when properly conducted under the supervision of an experienced physician should result in much good. There has always been a danger that young men suddenly changing their mode of life, from perhaps one involving great physical activity to the sedentary life of a college student, should thereby suffer in health. Athletic sports tend to encourage out of door exercise, and by insuring a better physique, enable the student to do better brain work. The advantages are very tersely stated in a pamphlet by President Hartield, who says:—"Most outdoor games, not merely strengthen the limbs, give certainty to the movements, make the hand skilful and the eye sure, but also give great command to the will over the actions of the body. A true athlete cultivates self control, prudence, discretion, and later also the higher virtues of sobriety and chastity." It also enables him, in the language of Holmes, to determine his "weight of metal and his size of ball." It should not, however, be an object in athletic sports to furnish material for surgical clinics. Injuries to wind and limb are becoming only too frequent. Joint injuries are occasionally received that incapacitate the player for weeks and months, and unfortunately fatal results are not unknown. This rough play, which may cause serious accidents, is not sport. The true sportsman should take more pleasure in the exhilaration of contending than in the winning, and it is to be earnestly hoped that fine scientific sport may be soon purged of that violent play that causes physical injury.

E. B. Treat, Publisher, New York, has in press for early publication the 1896 *International Medical Annual*, being the fourteenth yearly issue of this eminently useful work. It will be the conjoint authorship of forty distinguished Specialists, selected from the most eminent Physicians and Surgeons of America, England and the Continent. It will contain reports of the progress of Medical Science at home and abroad, together with a large number of original articles and reviews on subjects with which the several authors are especially associated. In short, the design of the book is, while not neglecting the Specialist, to bring the general practitioner into direct communication with those who are advancing the science of medicine, so that he may be furnished with all that is worthy of preservation, as reliable aids in his daily work. Illustrations in black and colours will be used wherever helpful in elucidating the text. Altogether it makes a most useful, if not absolutely indispensable, investment for the medical practitioner. The price will remain the same as previous issues, $2.75.

We have pleasure in publishing the following programme for 1895-96 of the Medical Society of Ottawa. We hope to be favoured with a contribution occasionally: Oct. 25, President's Address, Dr, J. A. Grant, Jr.; Nov. 8, A Trip among the Abdominal Surgeons of New York, Dr. L. C. Prevost; Nov. 22, Appendicitis—when to operate, Drs. H. P. Wright and R. W. Powell; Dec. 13, Anæsthetics: Chloroform, Dr. H. B. Small; Ether, Drs. C. J. H. Chipman and A. T. Shillington; Dec. 27, Acute Uræmia, Dr. W. Troy; Puerperal Fever, Dr. A. Jamieson; Jan. 10, Diphtheritic Antitoxin, Drs. A. Robillard and W. C. Cousens; Jan. 24, Paraplegia, Drs. J. E. Rogers and A. A. Henderson; Feb. 14, Cranial surgery in relation to pyogenic infective disease of the ear, Dr. A. J. Horsey; Feb. 28, Surgical diseases of the knee joint, Drs. P. A. McDougall, Sir James Grant and O. C. Edwards; March 13, Coal Gas Poisoning, Dr. J. W. Shillington.

The College and Clinical Record will be hereafter known under the name of *Dunglison's College and Clinical Record: A Monthly Journal of Practical Medicine.*

W. J. Bradley, M.D. (McGill, 1888), has been admitted a member of the Royal College of Surgeons of England.

NEW BOOKS, ETC., RECEIVED AND NOTED.

An Essay on Malaria and Its Consequences. By Robert Lindsay, A.M., M.B., etc. London: H. K. Lewis.

A Manual of Syphilis and the Venereal Diseases. By James Nevins Hyde, A.M., M.D., and Frank H. Montgomery, M.D. Philadelphia: W. B. Saunders.

Notes on Surgery for Nurses. By Joseph Bell, M.D., etc. Edinburgh: Oliver & Boyd.

Consumption; Its Nature, Causes and Prevention. By Edward Playter, M.D. Toronto: William Briggs.

On the Localization of the Foramina at the Base of the Skull. By Edward Fawcett, M.B., C.M., Edin. Bristol: J. W. Arrowsmith.

A Manual of the Practice of Medicine. By George Roe Lockwood, M.D. Philadelphia: W. B. Saunders.

Craniectomy; an Improved Technique. By A. H. Meisenbach, M.D. Reprint from the Journal of the American Medical Association.

Insured Lives as Affected by Gout. Syphilis as Affecting Life Insurance Risks. Reports on Asthma and on Biliary and Renal Colic and Calculus. Published by the Mutual Life Insurance Company of New York.

Seventeenth Annual Report of the Frazer Institute.

The Johns Hopkins Hospital Reports. Report in Pathology, IV.

Traumatic Separation (compound) of the Lower Epiphysis of the Femur. By A. H. Meisenbach, M.D. Reprint from Medical Record, October 5, 1895.

Removal of Ingrowing Toe-nail. By A. H. Meisenbach, M.D. Reprint from St. Louis Medical Review, July 27, 1895.

The Technique of Tenotomy of the Ocular Muscles. By Leartus Connor, A.M., M.D. Reprint from Journal of the American Medical Association, Nov. 2, 1895.

Urethroscopy in Chronic Urethritis. By Fred C. Valentine, M.D. Reprint from Medical Record, August 3, 1895.

Report of the Board of Health of the Province of Quebec, 1895.

Bulletin 48—Report on Crops, Live Stock, etc., in Manitoba. Winnipeg, Dec. 10, 1895. Issued by the Department of Agriculture and Immigration.

Practical Urethroscopy. By H. R. Wassidlo, M.D. Reprint from Medical Record, September 7, 1895.