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CANADA
MEDICAL & SURGICAL JOURNAL

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Original Communications.

THE ÆTIOLOGY OF TUBERCULOSIS.

AN ADDRESS DELIVERED BY DR. ROBERT KOCH BEFORE THE
PHYSIOLOGICAL SOCIETY OF BERLIN.

TRANSLATED BY W. D. OAKLEY, M.D., (MCGILL).

(Continued from page 655.)

To prove Tuberculosis to be a parasitic disease, caused by the growth and multiplication of the bacilli within the body, it is necessary, in the first place, to isolate the parasites and to propagate them for a long time in pure culture until they become free from every accidental disease product with which they might be associated; and, in the second place, to reproduce the entire phenomena of Tuberculosis—which we know can be accomplished through the inoculation of tubercular substances of a natural origin—by the inoculation of the isolated and artificially cultivated Tubercle Bacilli.

Passing over many initial experiments which led to the elucidation of the problem, only the completed methods will be here given. Their essential feature is the use of a stiff, transparent culture-material, which, even at the breeding temperatures, remains unaltered in consistence. In an earlier publication I have stated the advantages of this method in bacteria investigations. By its use the pure culture of the Tubercle Bacillus, not an easy matter, was accomplished.

Serum from bees' or sheep's blood was obtained as pure as possible and placed in a flask, the mouth of which is closed with

a wad of cotton, and then heated one hour daily to a temperature of 68°C . By this means it is possible—not always, it is true, but still in most cases—to completely sterilize the serum. It is hastily heated to 65°C . for several hours, until it becomes stiff and firm. After this treatment the serum is of a yellowish or amber colour, is completely transparent, or only slightly opalescent, of a jelly-like consistence, and shows, even when kept for days, not the slightest development of colonies of bacteria. However, should the temperature rise over 75° , or last too long, it becomes opaque. In order to obtain a large surface for cultivation purposes, the serum should be allowed to stiffen when the flask is held in an inclined position. For a culture which would be accessible to direct microscopical examination, a little serum may be allowed to stiffen in a watch-glass or concave slide. To this jelly-like substance the tubercular material is to be transferred in the following manner.

The simplest way, and the way which is successful, almost without exception, when the animal has just died of tuberculosis or has immediately previously been killed while suffering from that disease, will be first described. The skin over the breast and belly is cut with instruments which have shortly before been heated to redness. The ribs are then divided with scissors or forceps which have been similarly treated. The anterior wall of the thorax is then removed without opening the abdominal cavity, the lungs being thus to a great extent laid bare. These instruments are exchanged for others also previously heated, and single tubercular nodules are dissected out and transferred to the jelly surfaces as quickly as possible by means of a platinum-wire fixed into a glass handle, and which has been quite recently heated to redness. Of course the stopper of cotton is to be raised only momentarily. In this manner a number of flasks, from 6 to 20, should be provided with tubercular material, because even with the greatest care not all the flasks will escape accidental contamination. Caseated lymph-glands are quite as suitable as lung tissue, but pus from broken down lymph glands is not so good, because it contains few or no bacilli.

The cultivation of the bacilli from material taken from human

tuberculous lungs or the lungs in perlsucht is much more difficult. I repeatedly and carefully wash in such cases the portions of tissue with a solution of bichloride of mercury, after having used all the precautions above-mentioned on their removal from the body. Then I cut away, by means of properly heated instruments, the superficial layers until such a depth is reached as one would consider free from the presence of the bacteria of putrefaction. The flasks which have in such manner been provided with tubercular material are placed in the breeding apparatus and kept at a constant temperature of 37° or 38°C . In the first week there should be no appreciable change; but in case contamination of the culture has occurred, a change does take place. This can be recognized by the appearance of white, grey or yellowish spots, and the jelly also becomes liquified. This is due to a growth of bacteria, and proceeds from the tubercular substances introduced or arises remotely from them. The growth advances rapidly, and on account of impurity the experiment fails. The true products of the growth of the tubercle bacilli cannot be seen by the unaided eye until the second week after planting, usually on the tenth day. Then appear very small points like dry scales, which vary in number and extent according as the tubercle mass, when introduced, was broken, or, by rubbing, was brought into contact with a greater or less extent of the jelly surface. These points lie around the smaller fragments of tubercle in smaller or larger circles. If there were but few-bacilli in the tissue introduced, it is almost impossible to have removed them from the tissue to the jelly, consequently when they multiply they can be seen within the tissue itself when sufficiently transparent—as in scrofulous gland tissue—appearing dark by transmitted and white by reflected light. By the aid of a lens of slight power—30 to 40 diam.—they can be seen at the end of the first week. The organisms appear as very fine structures, generally of a spindle or **S** shape, or other similarly curved figures. Spread upon a slide, stained, and examined with a high power, the characteristic extremely small bacilli are seen. The growth of these colonies advances gradually during three or four weeks. They grow larger, form smooth

masses generally somewhat smaller than a millet seed, which lie loosely on the surface of the jelly, but never penetrate into it independently, or cause it to become fluid. These colonies form such compact masses that the separate scales can easily be lifted from the stiffened serum by means of the wire, and it is only possible to crush them by using a certain amount of pressure. This extremely slow growth—which cannot be obtained at all except at breeding temperatures—and their peculiar dry, hard, scaly quality are characters presented by no other known variety of bacteria, and renders the confusion of the culture products of this bacillus with that of other bacteria impossible, so that only a slight experience enables one to recognize any accidental impurities in the culture. The growth of the colonies, as mentioned above, ended after a few weeks, and further increase does not occur, apparently because the bacilli are deficient in all power of independent motion; they spread out on the jelly surface merely by the pressure of growth, and, consequently, these slow-growing cultures reach only slight dimensions. In order to keep such a culture progressing, some of the bacilli must, some time after planting—from 10 to 14 days—be conveyed to new jelly. This is done as follows: Some of the scales are removed by a platinum wire—which, of course, has been previously heated so as to thoroughly disinfect it—to a fresh flask containing sterilized, stiffened serum, and pressed into and spread about the surface as much as possible. Then, as before, fresh scaly masses make their appearance and spread more or less over the new surface. In this way are the cultures changed or repeated. Other substances having similar properties can be used as well as stiffened serum to nourish the tubercle bacilli. For example, a sort of jelly prepared with Agar-agar, which remains hard at breeding temperatures, and to which some meat infusion and peptone has been added. On this, however, they do not grow in such characteristic forms as on blood serum.

At first I had only cultivated the bacilli from the lung tubercles of guinea-pigs, which had been infected with tubercular material. The bacilli, coming from different sources, were thus compelled to undergo a sort of intermediate culture—that is, in

the body of the guinea-pig. In this way, and also in the conveyance from flask to flask, errors could arise should, accidentally, other bacteria be introduced, or if the animals used for experiment should become affected with spontaneous tuberculosis. This latter not seldom occurred. To avoid these sources of error, especial precautions were necessary, suggested by the results of observations upon spontaneous tuberculosis (*spontantuberkel*)—which constituted the most important source of error. Among hundreds of guinea-pigs occasionally just purchased, which were killed in other investigations, not a single one have I found tuberculous. The spontaneous tuberculosis was manifested in single isolated cases, and never before three or four weeks after the animal began to live under the same conditions as those which had been inoculated with the disease. In the cases of spontaneous tuberculosis, the bronchial glands were found invariably very much swollen and broken down, and generally also large caseous deposits in the lungs broken down in the centre, so that, as in human lungs, cavities had been formed. The development of tubercles in the abdominal cavity was far less frequent than in the lungs. The enlargement of the bronchial glands, and the evident commencement of the process in the respiratory organs, leaves no room for doubt that spontaneous tuberculosis in these animals is caused by the inhalation of a few or possibly only one single infectious germ, and which, on that account, has taken a very slow course. The tuberculosis caused by inoculation progresses in an entirely different manner. The animals were inoculated on the belly, in the vicinity of the inguinal glands. These first begin to swell, and thus give an un-failing sign of the success of the infection. This tuberculosis runs a course incomparably more rapid than the spontaneous, because at the outset a large quantity of infectious material is introduced into the body, and, on *post-mortem* examination, the spleen and liver are more severely affected than the lungs. It is therefore not at all difficult to distinguish the spontaneous from the inoculation tuberculosis in animals used for experimental purposes. When therefore several from a number of guinea-pigs, bought at the same time, inoculated in the same manner and

with the same substances, isolated in an especial cage, become, after a short interval, without exception, simultaneously diseased in the manner just described, which is characteristic of inoculated tuberculosis, we are entitled to assume that the production of the tuberculosis can only have been due to the action of the substance which has been inoculated.

In the manner just detailed, proceeding with all possible precautions—such as disinfection of the point of inoculation and the use of previously heated instruments—four to six guinea-pigs were always inoculated with the substance to be tested. The result was invariably the same. In all animals inoculated with fresh material containing the tubercle bacilli the small inoculation wound was almost always adherent on the following day. It then remained for about eight days unaltered. Then was formed a nodule, which either increased in size without breaking down or more frequently developed into a smooth, dry ulcer. Even in two weeks the inguinal, and sometimes also the axillary glands, were swollen to the size of a pea. From this time on the animal rapidly emaciates and dies in from four to six weeks, or is killed in order to avoid complications from the later-appearing spontaneous tuberculosis. In the organs of all these animals, especially in the spleen and liver, were the well-known characteristic tubercular lesions. That the infection of the guinea-pigs was caused by the inoculated substances only is shown by the facts, that not one single animal became sick after the inoculation—of 1st, material from scrofulous lymph glands; and 2nd, from fungous masses of diseased joint, in both of which substances no tubercle bacilli could be found; and 3rd, with tubercular material soaked in alcohol for two months. On the other hand, animals inoculated with material containing the bacilli, without exception, became in a high degree tuberculous four weeks after infection.

From guinea-pigs which had been inoculated with tubercular substances from the lungs of an ape, with miliary tubercles from human lungs and brain, with caseous material from human phthisical lungs and nodules from the lungs of perlsucht cattle, was the culture of the bacilli effected in the manner above de-

scribed. From this culture was it demonstrated that not only were the disease-phenomena produced, precisely similar in the animals though infected with material from such various sources, but also were the culture products derived from the diverse sources just enumerated, identical even to the smallest detail. In all 15 pure cultures of tubercle bacilli were made, of which four were obtained from guinea-pigs which had been inoculated with substances from tuberculous apes; four in the same way from perlsucht, and seven from human tubercular products.

It may be objected that the bacilli might possibly undergo some change within the bodies of the guinea-pigs, this change being possibly a modification (*gleichwerden*) of originally differing organisms towards uniformity, or a morphological assimilation of the bacilli contained in such diverse substances. But this objection was provided for by the cultivation of bacilli taken directly from the diseased organs of both man and animals suffering from ordinary or spontaneous tuberculosis.

Such experiments were frequently successful. Pure cultures were obtained from two cases of human miliary tuberculosis, and from one case of caseous pneumonia, also human; two also from the contents of small vomicæ in phthisical lungs, one from caseous mesenteric, and two from freshly extirpated scrofulous glands—all human; moreover, two from perlsucht lungs of cattle, and two from the lungs of guinea-pigs affected with spontaneous tuberculosis. The results of these direct cultures were identical with those derived from the organs of guinea-pigs which had been inoculated with tubercular material from these same sources, the bacilli being quite unaltered by their intermediate culture in the bodies of the guinea-pigs. With these facts before us, it can not be doubted that the bacilli of these different tubercular processes are the same.

With reference to this question of cultivation, it must be mentioned that Klebs, Schüller and Toussaint have also cultivated organisms obtained from tubercular masses. All these investigators found that the cultivation fluid, after being mixed with tubercular material, became cloudy in two or three days, and contained numerous bacteria. In Klebs' experiments small

staff-like bodies, having the power of a rapid motion, were observed. Schüller and Toussaint obtained micrococci. I have repeatedly convinced myself of the fact that, being wholly without the power of movement, the tubercle bacilli grow in liquids with great difficulty, and also never make the same cloudy. Moreover, if a growth does not take place at all, it can be recognized only after three or four weeks. The above-mentioned investigators must therefore have observed other organisms than the tubercle bacilli.

So far it has been proven by my experiments that the presence of these characteristic bacilli is invariably connected with tuberculosis, and that these organisms can be obtained in tubercular organs and isolated in pure culture. An important question still remains to be answered: Whether the isolated bacilli, when introduced into the animal body, are capable of producing the entire pathological process—tuberculosis? To exclude every source of error on the experimental answering of this question is the point of difficulty in the elucidation of the nature of the tubercular virus. To that end a series of experiments, varied in every conceivable way, were undertaken, and which, on account of the importance of the subject, will be separately described. The first were experiments in the simple inoculation of the bacilli in the manner previously detailed.

First Experiment.—Of six guinea-pigs bought at the same time and kept in the same cage, four were inoculated on the belly with a bacillus cutting-product derived from human miliary tuberculosis, and cultivated 54 days, with five renewals or changes. The two remaining animals were not inoculated. In the inoculated animals the inguinal glands became swollen after 14 days. The place of inoculation became an ulcer and the animal emaciated. After 32 days one died, and after 35 the rest were killed. All—the one which died and those which were killed—showed a high degree of tuberculosis in spleen, liver and lungs, the inguinal much swollen and caseated, and the bronchial glands slightly enlarged. The uninoculated animals showed no trace of the disease in lungs, liver or spleen.

When one reviews these experiments, keeping in view the

very different methods of inoculation, namely, through simple inoculation into the subcutaneous cellular tissue, by injection into the abdominal cavity or anterior chamber of the eye, or directly into the blood stream, it is seen that of a large number of animals, all, without exception, became tuberculous, and, indeed, there were not merely a few single nodules formed, but the extraordinarily large number of tubercles resulting corresponded with the great number of infectious germs introduced. In other animals it was possible, by the injection of as small a number as possible of the bacilli into the anterior chamber, to produce exactly the same tubercular iritis as in the well-known experiments of Cohnheim, Solomonsen, and Baumgarten, which were so important in the solution of the question of the inoculability of tuberculosis.

Two sources of error in these experiments must be referred to, viz. : Firstly, the possible mistake of this artificial tuberculosis for the spontaneous disease ; -and secondly, the accidental and unlooked-for infection with tubercular virus of the animals used in experiment. But these possible errors must be excluded for the following reasons : 1st, Neither spontaneous tuberculosis or any accidental infection produce such enormous eruptions of tubercles in so short a time. 2ndly, The control-animals which were treated in exactly the same manner as the infected ones, except that they were not inoculated with bacillus cultures, remained sound. And 3rdly, In the many guinea-pigs which were in the same manner inoculated and infected with other substances in other experiments, this typical appearance of miliary tuberculosis never appeared. This appearance can then only be produced when the body is infected with a great number of infectious germs.

All these facts taken together justify us in saying that the bacilli appearing in the tubercular structures are not only an accompaniment of the tubercular process, but actually cause it, and that in the bacilli we have before us the essential tubercular virus. The possibility of assigning definite limits to the disease called tuberculosis is also apparent, but which up to the present time could not be strictly done. A sure criterion was wanting,

and consequently many regarded miliary tuberculosis, phthisis, scrofula and perlsucht as essentially the same disease. Others, with apparently just as much right, held that these pathological processes were different.

In the future it will not be difficult to decide what is tubercular and what is not. It is not the peculiar structure of the tubercle, not its nonvascularity, nor the presence of giant-cells which will determine the tubercular nature of a growth, but proof of the presence of the tubercle bacilli: either by staining reactions or by cultivation in stiffened blood-serum. Accepting this criterion as the only positive and decisive one according to my investigations must miliary tuberculosis, caseous pneumonia, caseous bronchitis, intestinal and glandular tuberculosis, the perlsucht of cattle, and spontaneous and inoculation tuberculosis be regarded as identical: my investigations in scrofula and fungous joint-affections are not sufficiently numerous to be decisive. However, a large proportion of these are undoubtedly purely tubercular and perhaps all are to be looked upon as tuberculosis. The discovery of the bacilli in the caseated glands of a hog, and the tubercular nodules of a chicken leads us to believe that tuberculosis is much more wide-spread than is generally supposed, and it is very desirable to thoroughly explore the territory of this disease in connection with the domestic animals.

The parasitic nature of the tubercular virus having thus been rendered certain, in order to complete our knowledge of this disease, two questions must be answered—Where do the parasites originate, and how do they gain entrance into the body?

With reference to the first question, it is necessary to decide whether the infectious material develops only under such conditions as are provided by the animal body, or whether, as can the splenic fever bacillus, it can pass through its development-process in any place free in nature.

The results of several experiments showed that the tubercle bacillus can grow only at the temperature of 30° to 41° C. Under 30° and at 42° , not the slightest growth took place dur-

ing three weeks time, while on the other hand the bacillus anthracis grows actively between 20° and 42° or 43° C. On the ground of this one fact, the first question can be answered. In temperate zones, at no time does there occur at least two weeks of a continuous temperature of over 30° . It follows therefore, that the tubercle bacillus in its process of development is limited to the animal body, and is, moreover, not an accidental but a pure parasite, and can only originate in an animal organism.

The second question—How do the parasites enter the body?—must now be considered. The great majority of all cases of tuberculosis begin in the respiratory tract, and the infectious material first becomes apparent in the lungs or bronchial gland. It is therefore very probable that the bacilli are inhaled clinging to particles of dust. The way and manner in which they become mixed with the air is no longer mysterious, when we consider the quantity of bacilli in pulmonary cavities which, mixed with other contents, are expectorated and everywhere disseminated.

In order to obtain an idea of the number of bacilli in tubercular sputa, I examined the expectoration of a great number of phthisical patients, and found that though in many of them no bacilli were present, in about 50 per cent of such cases extraordinary numbers were discovered, some of them containing spores. I will merely remark that bacilli were never found on examining the sputa of nonphthisical patients. Animals were also inoculated with fresh bacilli-containing sputum, and became tuberculous with as much certainty as when inoculated with the substance of fresh miliary tubercle.

Moreover, such sputa after drying does not lose its virulence. For example, four guinea pigs after inoculation with sputum, two weeks old, four after inoculation with sputum, eight weeks old, became tuberculous in precisely the same manner as after inoculation with fresh tubercular material. It can therefore be inferred that sputum which has dried upon the ground on the clothes, &c., retains its virulence for a long time, and should it enter the lungs as dust is capable of causing tuberculosis. It

is probable that the tenacity of this virulence depends upon the spores of the bacilli, and it may here be stated, that the spore development of this bacillus takes place within the animal body and not outside it, as in the case of the bacillus anthracis.

To enter upon a discussion of an acquired or inherited predisposition to tuberculosis—though a most important factor in the ætiology of this disease—would lead us too far into the realm of speculation. In this direction thorough investigation must be made before a judgment is pronounced. I will now call attention to only one fact which serves to explain many puzzling phenomena, and it is, the especially slow growth of the bacilli. For this reason, probably, they are not able—as is the quick-growing bacillus of splenic fever—through any slight injury to infect the body. If one wishes with certainty to render an animal tuberculous, he must bring the infectious material into contact with the subcutaneous cellular tissue, the peritoneal cavity, the anterior chamber, or, in short, into some protected position wherein it can grow and get firmly established. Infection through surface wounds of the skin, which do not penetrate into the subcutaneous tissue, is only exceptionally successful—the bacilli being cast off before they can obtain a firm footing in the tissue.

Thus is explained why, in dissection of tuberculous cadavers, infection does not occur even though slight wounds on the hands come into contact with tubercular substances—small, slight wounds not being suitable for the entrance of the bacilli. The same considerations serve to explain the adhesion of the bacilli when taken into the lungs. The retention of the organisms would be favoured by such conditions as stagnant secretion, laying bare of the membrane from loss of epithelium, &c. Otherwise it would be scarcely possible to understand why tuberculosis is not oftener acquired, though every man, especially in the more thickly populated districts, comes into contact more or less with the disease.

Let us now ask ourselves of what further importance are the results of these investigations? In the first place, it may be regarded as a triumph of science that it is now possible to produce complete proof of the parasitic nature of a human infectious

disease, of the disease, indeed of all others, the most important. Up to the present, such complete evidence existed only in the case of Splenic Fever, though in a number of human infectious diseases—Relapsing Fever, Wound-infection diseases, Gonorrhœa and Leprosy—a parasite accompanied the manifestations of pathological progress, but causal relations between the parasite and the symptomatic phenomena have not been directly proven. It is a reasonable expectation that the elucidation of the ætiology of tuberculosis will furnish new points of view for the consideration of the remaining infectious diseases, and that the methods so useful in the investigations into tubercular ætiology may also be usefully applied to the elucidation of others, especially to those—as Syphilis and Farcy—which are more closely connected with tuberculosis, and constitute with it the infectious tumour diseases (*Infections-Geschwulst Krankheiten*) of Cohnheim.

To what extent pathology and surgery can utilize the knowledge of the parasitic nature of tuberculosis, it is not my task to inquire; whether, for example, the finding of tubercle bacilli will be of advantage in diagnosis; whether the sure recognition of many local tubercular diseases will affect the local treatment of the same, or whether therapeutics will be in any way improved by greater knowledge of the life-conditions of the bacillus. My investigations were undertaken in the interest of hygiene, which will, I hope, receive great benefit.

One has been accustomed until now to regard tuberculosis as the outcome of social misery, and to hope, by relief of distress, to diminish the disease. Clear rules for the warding off of tuberculosis have not been possible heretofore. But in the future struggle against the dreadful plague of the human race, one will have no longer to contend with an indefinite something, but with an actual parasite, whose life-conditions are for the most part known, or can easily be still further investigated. That this parasitic organism only finds conditions suitable for its existence in the animal body, but cannot, as the *Bacillus Anthracis*, outside of it, exist under ordinary natural conditions, bids us hope for results in battling against tuberculosis. Above all, so far as lies in man's power must be closed those sources whence

come the materials of infection, and of these sources certainly the chief is the sputa of the already phthisical. Sufficient care has not heretofore been taken in the collection and removal in an uninjurious condition of such sputa, and there are no great difficulties to interfere with its proper disinfection, by which a great part of the infectious matter is rendered innocuous. Certainly care must be bestowed upon the clothes, beds, &c., which have been used by the tuberculous.

Another source of tubercular infection is undoubtedly furnished by the domestic animals. Especially does this hold good of *perlsucht*. With regard to the injuriousness of the flesh and milk of *perlsucht* animals, the position of the sanitary authorities must now clearly be indicated. *Perlsucht* is identical with the tuberculosis of man, and communicable to him. On this account it is to be treated as all other infectious diseases communicable from animals to man. Be the danger from the use of *perlsucht* milk or flesh great or small, it exists, and must be avoided. It is known that splenic fever flesh has been eaten by many persons and for a considerable time without any injury. But from this no one would draw the conclusion that trade in such flesh is to be permitted. With reference to the milk of *perlsucht* cattle, it is worthy of remark that the invasion of the milk-glands by the tubercular process has been observed by veterinary surgeons, and it is therefore very probable that the tubercular virus is directly mixed with the milk.

The consideration of this subject from other points of view may lead to the suggestion of other measures aiming at the limitation of the disease. When the conviction that tuberculosis is an exquisitely infectious disease has taken root among physicians, then will be fully elaborated, by means of discussion, the most efficient rules of warfare under which to contend with our common enemy.

CLINICAL REMARKS ON LEUCOCYTHEMIA.

DELIVERED IN THE SUMMER SESSION COURSE, AT THE GENERAL HOSPITAL, MAY 17TH, 1882.

BY WILLIAM OSLER, M.D., M.R.C.P., LOND.

Professor of the Institutes of Medicine in McGill University, and Physician to the Montreal General Hospital.

GENTLEMEN,—There are certain diseases which affect principally the blood and the organs of the hæmato-poietic system. Of these the principal are :—

1. *Anæmia.*
2. *Chlorosis.*
3. *Leucocythemia* ; and
4. *Lymphadenoma*, or *Hodgkins' Disease.*

These are characterized by profound alterations in the constitution of the blood, and certain of them are accompanied by definite changes in those organs of the body which we regard as the blood-making ones. The form of anæmia which particularly belongs to this class is that known as *pernicious* or *essential*.

Of the affections characterized by an alteration in the structure and appearance of certain of the blood-forming organs, the most important are *leucocythemia* and *Hodgkins' disease*. In these affections, either the spleen alone, the lymphatic glands alone, or the spleen with the lymphatic glands are affected. In the former we have, in addition to the changes in the spleen and lymphatic glands, a special alteration in the blood, characterized by a great increase in the colourless elements. Hence the term, *Leucocythemia*, or *Leukæmia*. In *Hodgkins' disease* there is no such increase in the number of colourless corpuscles, though the characters of the changes in the organs may be identical ; hence the term *Pseudo-Leukæmia* is sometimes applied to it. I have here to-day, owing to the kindness of Dr. Laphorn Smith and of the patient himself, an exceedingly interesting case illustrating a disease met with but rarely in this country,

* Stenographical report by James Crankshaw, Esq., B.C.L.

and yet one which it is very important for you to know accurately and well. The history of this case is as follows :

— Vervais, æt. 39, has been a healthy man. Has been a moulder, but for the past eight years kept an hotel. Always lived in Montreal. Never had ague. Mother died at age of 80 ; father dead of an accident. Got hurt 17 years ago in the left side ; strained while lifting. Ill now for 13 months ; began with swelling of hands and legs, which continued for five or six months ; then the belly began to swell. Had pain in belly, and noticed a swelling in left side. Occasional vomiting in morning. Never passed blood in stools, or vomited it. No palpitation at heart. I saw him about New Year's in consultation with Drs. Hingston and Trenholme, and we found great œdema, with ascites and enlargement of the spleen. Since that time he has been under the care of several physicians. The chief symptoms have continued to be : dropsy, for which he has been tapped three times, weakness, and shortness of breath on exertion. Within the past month the patient has improved, and I see a great change for the better in him.

We will now examine the patient and ascertain the symptoms he presents. The first thing you notice is that he has an enlarged abdomen, with slight dropsy of the feet and legs ; this is not nearly as much as it was when I saw him last. His face does not present a specially cachectic appearance. He is looking now much better than a month ago, but has not got quite so good or healthy a look as when I saw him first about the New Year. The breathing is, you notice, a little short. The pulse is about 108. On examination we find the following : The abdomen is uniformly distended, not more on one side than the other, and measures about 45 inches. A few large veins are seen, but they are by no means prominent. On palpation, the abdominal walls yield ; they are not tense ; there is no increased sense of resistance until the fingers reach the left side of the abdomen. You then feel a distinct solid mass. It is firm, hard, and reaches below the level of the crest of the ilium. There is a definite edge, and at about the level of the navel and at a distance of three inches to the left you feel a distinct notch at this edge.

This resistant mass can be felt well into the left hypochondriac region, and far back into the left lumbar region. On percussion there is a dull note, while over the greater portion of the abdomen, a flat, tympanitic note is obtained. In the umbilical and the hypogastric region there is a distinct wave which can be seen and felt on percussing one side of the abdomen. So that we find here a large collection of fluid in the abdomen, and evidences of a tumour in the left side. The liver cannot be felt below the ribs; its upper limit of dulness is half an inch below the nipple. The chest is well formed. The apex beat is in the fourth interspace, and just within the nipple line. On auscultation, a soft, systolic murmur is heard. The lungs appear normal. The lymph glands are not enlarged.

Now what we have found here, gentlemen, is simply dropsy of the abdomen, with œdema of the legs, and a tumour on the left side of the abdomen. The questions are, first, what is the nature of this enlargement on the left side? What is the cause of the dropsy? and of the tumour here in this region? You would think at once of an enlarged spleen or kidney. When I saw this patient with Dr. Hingston and Dr. Trenholme, the doubt was whether it was renal or splenic. It is so far back in the lumbar region; it is not very moveable; and it was thought that perhaps it might be an enlarged kidney. But, on the other hand, against that are the facts that the border can be felt very distinctly; a notch is evident; and on percussing and palpating towards the left hypochondriac region, it is found that this mass emerges from below the ribs on the left side; the dull line extends nearly to the level of the nipple. From its position, the distinct feel of the edge of the notch, and the way it emerges from the left hypochondrium, there is no doubt about its being an enlarged spleen.

As to the cause of that enlargement, you have, in the first place, to think of chronic malaria; then, in the second place, of simple splenic enlargement not induced by malaria, but, by causes unknown to us, accompanied by anæmia, and sometimes called splenic anæmia; and, thirdly, whether this is the enlarged spleen of leucocythemia. Now, the only possible way in which

you can decide between these conditions is by examination of the blood with the microscope. It is impossible for you to make an accurate diagnosis unless you proceed to this. You can say now, so far as we have got, that it is a case of enlargement of the spleen, with dropsy, but that is all until you examine his blood. If you examine this, and find that there is simply a decrease in the number of red-blood corpuscles, you will call it a case of splenic anæmia, whether dependent on malaria or not; but if you examine it, and find the number of white corpuscles greatly increased, so that the ratio is one white corpuscle to twenty, or less, red-blood corpuscles, you will call it a case of leucocythemia. In this instance the blood has been examined, and we find that the ratio is about one white-blood corpuscle to eight red ones. There is very great leukæmia. The examination of the blood decides the question of the nature of the affection, namely, that it is a case of splenic leukæmia. We find also that, in addition to the disproportion of the white and red blood corpuscles, the latter are greatly diminished in number. There is also marked anæmia.

Of the causation or etiology of the disease we have almost everything to learn. It occurs most frequently in individuals of middle period of life, though it is met with not unfrequently in children. The youngest case I have known is that of an infant eight months old, a case of Dr. Howard's. It affects males more frequently than females. Of circumstances which have been stated to influence it, in some respect, malaria is one which by many is thought to have an important influence. I have lately been going over a large number of leukæmia records, particularly of American cases, and I have been surprised to find how few were the cases in which any definite connection with malaria could be ascertained. We know very little, indeed, of the circumstances which induce this affection. Of the morbid anatomy, in the splenic form the spleen is chiefly involved, and it forms a large *cake*, as it is called. The size of the tumour may range from a couple of pounds to 16 or 17 pounds. Some of the largest abdominal tumours are of this splenic variety. This one, from a patient who died under the care of the late

Dr. John Bell, is the largest specimen we have in our museum ; it weighed 7 pounds when it was fresh. Here is a second, not so large, and a third, larger in proportion than the others, as it was taken from an infant eight months old. The organ in this affection is large and hard. It is in a condition of what is called chronic hyperplasia. It cuts with difficulty ; the section is uniform and the trabeculæ of the gland are unusually distinct. On examination with the microscope, we find that the change is chiefly in the network of adenoid tissue of the gland, which is greatly increased ; and between the little meshes are the spleen corpuscles. In a large number of cases the lymphatic glands are also enlarged, more particularly the lymphatic glands in the neck and in the axillia, less frequently in the groins and in the internal glands. The enlargement in the lymphatic glands is simply hyperplasia. They are enlarged and firm, but otherwise look natural. In addition, in a very considerable number of cases of leukæmia, there are definite growths of lymphoid tissues in organs in which we do not usually see such growths. Thus, for instance, in the liver you may have definite tumours, whitish in appearance, varying in size from a walnut to a hen's egg, composed entirely of new growth of lymphoid tissue. These may also occur in the lungs. The glandular elements in the small intestines are sometimes enlarged. The tissue of the bone-marrow has attracted attention in this disease. It is converted into a reddish, soft, pulpy material very much resembling spleen pulp. It is believed to play a very active part in the production of many of the features of the disease. Neuman, Mosler and others speak of a myelogenous form of leukæmia, induced by changes in the bone-marrow. These are the chief changes in the organs and parts of the body. In *post-mortems* the condition of the blood is often found most remarkable, owing to the increase of the white corpuscles. The blood, when clotted, may present a greyish-red appearance, or in clots where the corpuscles have separated from the liquor sanguinis, before coagulation has taken place, you may have the auricle of the heart filled with a substance looking like pure pus. In the first case reported in Canada (by Dr. John Bell), when we

opened the right auricle of the heart, Dr. Bell exclaimed in precisely the same terms as are related to have been used by one of Virchow's assistants in a similar case, "Why, we have an abscess of the heart," so puriform did the clots look that filled the right chambers.

With reference to the symptoms of the disease, the first that attracts attention is usually a sense of fullness and uneasiness in the left hypochondriac region, or in the upper zone of the abdomen. Accompanying this there is usually failing health. The patient becomes languid, the appetite is impaired, and they notice that they are paler than usual. Dropsy of the legs soon succeeds. In the patient you have just seen, dropsy of the legs and of the hands appear to have been his first symptom; and throughout the case it has been the chief trouble. The condition of the blood on examination is, of course, one of the essential symptoms of the affection.

The following are the characters by which you may know leukæmic blood: In the first place, when you prick the finger, you find that, instead of the deep purplish-red drop of the normal blood, the colour is changed to a chocolate brown colour, or even, when the leukæmia is very intense, a greyish-red colour. In this patient the colour is not so marked as one might expect from the number of white-blood corpuscles; but the colour, you must bear in mind, does not depend so much on the increase of the white-blood corpuscles as the decrease of the red-blood corpuscles. In a case where the anæmia is very profound, and the number of red corpuscles much decreased, you find the blood almost of a chocolate colour. On examination with the microscope, the colourless corpuscles are greatly increased in number. Instead of seeing two or three white-blood corpuscles in the field of a No. 7 Hartnack, you may find as many as 60 or 70. In fact, one usually supposes, on first examination of leukæmic blood, that the white-blood corpuscles greatly exceed the red in number. It is rather a hazardous thing to estimate, without accurate measurement, the proportion of white-blood corpuscles to the red. The red-blood corpuscles are always more numerous than they appear, for the reason that they collect

together in clumps. You do not see how many there are owing to formation of rouleaux; whereas the white corpuscles remain isolated, and so they look much more numerous. Secondly, the colourless corpuscles frequently present great variations in size. You will notice this in the slide of blood which I have here for examination. Some are much larger than normal; others are smaller. In cases in which the lymphatic glands are greatly involved—lymphatic leukæmia—there is a much larger proportion of small white corpuscles. Thirdly, the red-blood corpuscles usually present a somewhat paler appearance than usual; occasionally there are great discrepancies in size and irregularity in the outline. Fourthly, you may have, added to the blood, an element not seen in health, namely, nucleated red-blood corpuscles which exist normally in the bone-marrow. These occur not unfrequently in leukæmic patients. In the last case I had they were remarkably abundant. In one instance, in the field of a No. 9, I counted ten nucleated blood corpuscles. I never before saw them so abundant. Lastly, Schultze's granule-masses are, in certain cases, very numerous. These characters you will see in the specimen of blood which I have taken from this patient.

Among other symptoms in connection with leukæmia, *hemorrhages* take a prominent place. In some instances hemorrhages occur very freely, and may be the very first symptoms which a patient complains of. In one of Dr. Howard's series of cases (Montreal General Hospital Reports, Vol. 1), vomiting of blood was the first serious symptom that the lad had. In another instance, which I believe to have been a case of leukæmia, the girl died of the most profuse hæmatemesis. She appeared, prior to this attack, to be in fair health. We found at the autopsy a marked increase in the colourless blood corpuscles. The hemorrhage may occur early in the disease, or as a late symptom, and is a grave omen. There is usually vomiting; it may be due simply to the pressure of the large spleen on the stomach. In one case of Dr. Howard's, the vomiting was a persistent symptom throughout. Diarrhœa is occasionally met with. Most of these patients are febrile. There is a slight evening elevation of tem-

perature. This patient has not had much fever. I have taken his temperature several times. The dropsy in this man has been marked. This may, in great part, be anæmic, depending upon the condition of his blood. The marked dropsy of the belly is doubtless due to interference with the portal circulation. Perhaps he has enlarged glands in the gastro-hepatic omentum, which would account for the dropsy in this case. But bear in mind that enlargement of the spleen alone, without any pressure on the portal vein, may account for the dropsy in the belly. This patient has a heart murmur, anæmic in character.

The pathology of the affection is still, unhappily, very obscure, largely depending upon the fact that our knowledge of the growth and development of the corpuscles is still wanting in so many particulars. It is only natural to suppose that the condition of the blood and of the blood-making organs should be intimately associated.

The treatment of this disease is highly unsatisfactory. It is a hopelessly incurable affection. The patient usually goes from bad to worse. Two years sees the termination. There are occasional intermissions of the symptoms, periods during which the patient improves a good deal. It is one of these intermissions that the patient you have just seen is in. It may be, of course, due to the remedies; but these intermissions are known to occur without being influenced by the medicines. Excision of the spleen was the remedy proposed many years ago; it was carried out in some 18 or 20 cases without any success. The patients either died on the table or shortly afterwards. The chief remedies which have been used have been directed either towards reducing the size of the spleen or improving the general condition of the patient's health. Among the remedies used to reduce the size of the spleen have been electricity, which has proved very serviceable in reducing the size of the organ. Quinine, also, and ergot, given internally or injected into the substance of the organ, have been used. Of the medicines used to improve the general condition of the patient and the blood-making powers, iron, arsenic and phosphorus are the ones commonly employed. This patient was on arsenic for some time,

and also, I believe, on phosphorus. He is now on iron, and attributes largely his improvement to the large doses of iron he has been obtaining. Transfusion has been practiced in some cases, in the hope, perhaps, of giving the patient a better blood; but this has proved futile. In a patient—as in this one whom you saw here—with extensive dropsy, you have to relieve the distressing symptoms by tapping. This man has been tapped four or five times.

There is one symptom that I did not refer to, namely, the condition of the retina. This comes in under the symptom of hemorrhage. Many of these cases have a form of retinitis which consists of hemorrhages into the substance of the retina. This man's retinæ are normal. The patient has been sent to one of the wards. We will go in, and some of you will have an opportunity of examining him. These cases rarely occur in the hospital. There has been only one in the past ten years; and I am sure we are much indebted to Dr. Smith for allowing his patient to come up here, and giving us an opportunity of seeing him.

THE TREATMENT OF DIPHTHERIA.

By JAS. BELL, M.D., Medical Superintendent Montreal General Hospital.

(Read before the Medico-Chirurgical Society of Montreal.)

MR. PRESIDENT AND GENTLEMEN,—I wish to call your attention to the subject of the treatment of diphtheria, not for the purpose of introducing anything new, but with the intention of criticizing some of the established plans of treatment, and eliciting discussion upon them. I only propose to discuss two or three practices which I believe to be not only irrational in theory, but in practice as a rule productive of harm rather than good. I refer, in the first place, to the use of steam in the treatment of diphtheria. Steam, in one form or another, is recommended by most authors for all cases of laryngeal diphtheria (and laryngitis generally), and its use has been extended by many practitioners to ordinary pharyngeal diphtheria, so that there are at the present time probably few of the many plans of treatment more universal than the use of steam, and although,

of course, it is only a part of the treatment in any case, it is looked upon by many as a most important part, and has the sanction of many great authorities. Oertel recommends hot steam at a temperature of 113°F . to 122°F . to be inhaled and kept in the mouth as much as possible, and holds that it promotes suppuration, and hastens the separation of the membrane. He has the steam conducted through a tube directly to the mouth—a very important matter in my opinion, because for this reason his theory and the practice based upon it are rational, whatever we may say of the practice, as a desirable or undesirable mode of treatment. English and American authorities recommend, in a general way, that the air of the room be kept warm and moist by the generation of steam, or that a tent be made over the patient's bed and the steam directed into it—in short, some contrivance by which steam may be generated in the neighborhood of the patient, and dissipated into the air about him. Some recommend that the air of the room be kept at a temperature of 60°F . to 80°F . (Roberts), others at a temperature of about 90°F . (Flint.)

Now, it is clear that the explanation given by Oertel cannot be applied to the treatment by steam used in this way, because evaporation is a cooling process, and as the steam issues from the spout of the kettle or from the surface of water boiling in an open vessel, it cools the air instead of warming it and surcharges it with moisture. Every one is familiar with the sensation of cold which is produced by holding the hand in a jet of steam a few inches from its exit into the air. This is due to the fact that in the change of the physical condition of water a certain amount of sensible heat is converted into latent heat, and steam, entering the air passages as such is really colder than the air of the room. The advantages claimed for the use of steam diffused in the air are: 1st. That, by surcharging the air with vapor of water, it is rendered more respirable and more agreeable to the inflamed mucous membrane, and that in cases when tracheotomy has been performed it prevents the unnatural dryness of the trachea which is obviated in health by the air passing through the moist buccal and nasal cavities. 2nd. As a

means of conveying volatile medicinal agents to the inflamed part, as carbolic acid, &c.

Now, atmospheric air, as is well known, is a mixture of oxygen and hydrogen, of which oxygen is the important or life-sustaining part, and hydrogen merely an innocuous gas diluting it. It also contains on an average in every 1000 parts 84 parts by volume of aqueous vapor and about 4 parts by volume of carbonic acid, the latter derived chiefly from the respiration of animals; also, at certain times and in certain places, a variable amount of ozone, which is only an allotropic form of oxygen. It is admitted by all physicians that to obtain pure air in the most respirable form and in large quantities is one of the most important indications in the treatment of disease, and more especially in diseases of the respiratory apparatus, when the signs of deficient æration of the blood are looked upon as most ominous; and there is, perhaps, no condition when this indication is more important than in diphtheria of the larynx and air passages. Now, physicists have shown that the moisture of the atmosphere varies greatly in different parts of the world, and in the same places at different times; and from careful observations on animals in different climates, the effect of a dry atmosphere on the animal economy has been determined, and is expressed by Ganot in the following words: "The liquids evaporate more rapidly, by which the circulation and the assimilation are accelerated, and the whole character is more nervous. For evaporation is quicker the drier the air and the more frequently it is renewed; it is, moreover, more rapid the higher the temperature and the less the pressure." Our own normal sensations in health also tell us that the greatest bodily comfort and the greatest mental and physical activity are experienced in a pure and dry atmosphere. A strange inconsistency in the treatment of diphtheria, especially when both are employed at the same time, is the slaking of lime in the neighborhood of the patient—a chemical process which absorbs moisture and dries the air. Of course, a small amount of the freshly slaked lime may be inhaled by the patient, if the process is carried on very close to his bed, and the lime will also consume a small quantity of the carbonic acid of the sick chamber,

but the dehydration of the air is probably the chief result of this process. Another inconsistency in medical treatment is the sending of consumptives to the high and dry climate of Colorado, while we surcharge the atmosphere with moisture for patients with diphtheritic laryngitis. In both diseases the ultimate difficulty is the same—the deficient oxygenation of the blood;—in the one case killing slowly by interfering with assimilation and nutrition; in the other, killing rapidly by asphyxia. As a means of conveying medication to the affected parts little need be said, as all the volatile substances which are used for this purpose are quite as volatile by heat alone as with water, and for ordinary local medication by drugs in watery solution a hand spray will answer the purpose much better than a jet of steam. The conclusions, therefore, which I would draw with regard to steam in the treatment of diphtheria are:—

1. That to apply it as recommended by Oertel must be so difficult, so disagreeable, and accompanied by so much risk on account of the high temperature of the steam and the necessary difficulty in accurately determining its temperature, that it is very doubtful if the advantages resulting from its use more than counterbalance their disadvantages.

2. That by the use of steam in the general atmosphere of the room, or under a tent, none of the advantages of moist heat are secured, but, on the contrary, the air is rendered less invigorating, and evaporation and assimilation are retarded, as well as oxygenation of the blood.

3. That in the production of steam a large amount of oxygen is consumed in feeding the flame which boils the water, and deleterious gases are disseminated in the air from the consumed gas or oil used for this purpose.

4. That no local indication can be satisfactorily accomplished by this means.

(I ought to say here that I have never seen steam applied in the manner recommended by Oertel.)

The next point to which I take exception in the treatment of diphtheria is the use of excito-motor agents, such as strychnia and electricity in the early stages of diphtheritic paralysis. It

is true that we know almost nothing of the pathology of this affection, and have therefore very little to theorize upon; but there is a strong presumption that the paralysis is due to organic changes in the nerve centres, or at their roots, or in their substance, and that this change is probably of an inflammatory nature. At least no more probable theory has been advanced, and skilled observers claim to have discovered "softening at the roots of the spinal nerves," "capillary hemorrhages into the nerve centres," "exudation and proliferation into the nerve sheaths," &c. Now if these facts were well established, the use of strychnia and electricity (knowing, as we do, that they are powerful excitants of the spinal cord) would be distinctly contra-indicated while the lesion was progressive, and until it had been dormant a sufficient length of time to justify us in assuming that this treatment would not excite fresh inflammatory action. Fortunately, strychnia is one of the very few drugs whose physiological action is capable of experimental demonstration, while the action of electricity is well understood. Taking all the facts into consideration, I think we ought to aim at giving physiological rest to the nervous and muscular apparatus in the progressive stages of diphtheritic paralysis, and reserve excitation and stimulation for a later period, when we can feel satisfied that all inflammatory action has subsided.

Now, Mr. President, I am well aware that in introducing these questions I am dealing with matters of opinion rather than with matters of fact which are capable of demonstration; but as I have been gradually convinced by the observation of a large number of cases that these two special forms of treatment have almost uniformly yielded bad results, I have been led to protest against them, and I now solicit your opinions upon them.

Another question which I wish to raise is: What is the best form of tracheotomy tube or appliance (because it is not necessarily a tube) when tracheotomy is required in children for croup or diphtheria? I do not speak of those cases when tracheotomy is required for chronic destructive disease of the larynx and when the instrument has to be worn for a length of time, because I think a tube is the best form of instrument in

these cases, and after the immediate effects of the operation are over it can be adapted to suit the special circumstances of the case. Moreover, the operation in these cases is generally performed in adult life, which very much simplifies the after-treatment. I refer, however, to those cases of croup or diphtheria generally in children, in which the operation is performed to enable the patient to breathe freely and thus tide time over a few days while the inflammation of the mucous membrane is subsiding and the exudation is being separated and thrown off, and when the wound in the trachea can be closed in a week or two at most. The operation itself in these cases is, as a rule, very simple, but the after-treatment for the first few days is extremely difficult, chiefly, I believe, because no tube ever fits the trachea properly. The depth of the trachea from the surface varies so much, both on account of the natural differences in the amount of adipose tissue, shape of the shoulders, &c., and the amount of swelling of the neck, which is sometimes very great, that the point of the tube hardly ever enters the trachea, so as to form a continuous and uninterrupted channel for the exit of secretion. As a rule, it is either tilted forward against the anterior part of the trachea when the neck is thin, or rests on its posterior part when the neck is fat or swollen and the trachea deeply situated, and often in this way interferes with deglutition. Under any circumstances, it considerably diminishes the already lessened calibre of the trachea, and in a day or two, or perhaps in a few hours, a tough, viscid secretion collects at the point of the tube, caused, I believe, by the irritation which it produces, and obstructs it to such a degree that it is often forcibly expelled by efforts at coughing. This secretion is also deposited on the tracheal walls, just beyond the point of the tube, and causes such obstruction that the patient frequently dies of asphyxia, while the tough, gummy exudation remains just beyond our reach. I believe, therefore, that if we could dispense with the tube altogether and substitute some contrivance which would simply keep the cut segments of the tracheal cartilages separated, so as to allow of the free expulsion of the secretions and keep these secretions carefully swabbed away, tracheotomy would be a far

simpler and a far more successful operation than it now is. A wire speculum answers every purpose, but the great difficulty in keeping it *in situ* is a serious objection to its use. I have thought that a clasp to catch the edge of the trachea and connected to a few broad metallic links, so as to be applicable to a trachea at any depth, and which would draw its edges apart and the whole trachea slightly forward, would be better than any contrivance I have yet seen.

Reviews and Notices of Books.

Diseases of Women, including their Pathology, Causation, Symptoms, Diagnosis and Treatment: A Manual for Students and Practitioners.—By ARTHUR W. EDIS, M.D., Lond., F.R.C.P., M.R.C.S., Assistant Obstetric Physician to the Middlesex Hospital, Consulting Obstetric Physician to the City Provident Dispensary, &c. With 148 illustrations. Philadelphia: Henry C. Lea's Son & Co. Montreal: Dawson Brothers.

The author claims to have endeavoured to make this a reliable, practical clinical guide to the study of these important affections. From as careful an examination as has been possible of many of the chapters, we think he has good reason to congratulate himself upon the successful manner in which his intention has been carried into effect. All the most recent methods of operating, and the most efficient found useful in these procedures, are very fully explained and illustrated. The diagnosis of abdominal tumors, being generally one of much difficulty to the student, has been given most exhaustively. The author has evidently drawn freely from American sources, as we should expect seeing the high place our neighbours hold in this particular specialty. This fact will no doubt render Dr. Edis' work all the more popular in this country. It is well and clearly written, and well put together. On the whole, we consider it an excellent addition to the text-books of gynecology, and can highly recommend it.

Nervous Diseases : their Description and Treatment. A Manual for Students and Practitioners and Students of Medicine.—By ALLAN McLANE HAMILTON, M.D., Fellow of the New York Academy of Medicine ; one of the attending physicians of the Hospital for Epileptics and Paralytics, Blackwell's Island, New York. Second edition, revised and enlarged. With 72 illustrations. Philadelphia: Henry C. Lea's Son & Co. Montreal: Dawson Brothers.

It is such a short time since we had the pleasure of giving a commendatory notice of the first edition of Dr. Hamilton's work that it cannot be necessary here to do more than draw attention to the fact of the issue of this second edition. The rapid exhaustion of the original issue of course speaks for itself of the favourable reception it has met with at the hands of the profession. The present edition has been enlarged by nearly 100 pages, and contains many new illustrations. The most important additions are those relative to the localization of diseases of the brain and spinal cord, on which so much work has recently been done. Most of the other chapters have also been revised, and any addition made necessary to bring it up to the level of the most recent published writings.

Elements of Pharmacy, Materia-Medica and Therapeutics.—By WILLIAM WHITLA, M.D., L.R.C.P. & S., Ed., (gold medallist) Queen's University, Ireland; Physician to the Ulster Hospital for Sick Children, &c. With lithograph and woodcuts. London: Henry Renshaw.

The special object of this book is evidently to condense, and this has been accomplished without impairing its accuracy or leading to important omissions. It really consists of three distinct treatises, each one of which is quite separate from the others. The very important branch of practical pharmacy is that contained in the first section. All the various proceedings and manipulations are described, and several suitable woodcuts used to aid the descriptions. The materia-medica portion is very full, and is arranged alphabetically, like a pharmacopœia. The same arrangement is followed in the department of therapeutics, each

drug being found in its place, with a short description of the diseases in which it has been beneficially employed. This part is well done, and evidently contains the results of the best therapeutical writers of the present day. The whole is concluded by some very useful chapters upon the administration of medicines and upon prescription-writing. For those commencing practice it would be worth possessing this book, if it were only for their concluding parts, for they are exactly what a beginner requires to know.

It is, on the whole, a nice, compact, handy text-book, which can safely be recommended to all.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, June 9th, 1882.

GEORGE ROSS, M.D., PRESIDENT, IN THE CHAIR.

Dr. R. P. Howard said that before the regular business of the meeting was taken up, he thought it was fitting that some notice should be taken of the recent death of the late Dr. George W. Campbell. He therefore moved the following resolution, seconded by Dr. F. W. Campbell:—

“That the Medico-Chirurgical Society of Montreal have heard with deep regret of the unexpected death of the late George W. Campbell, A.M., M.D., LL.D., Emeritus Professor of Surgery, Dean of the Faculty of Medicine of McGill University, and for many years a member of this Society and its first president since its reorganization. A practitioner of medicine for nearly fifty years in this city, he acquired the confidence, the respect, and regard of his professional brethren of the past and the present generations by his eminent qualifications as a physician and surgeon, by his loyalty to, and respect for, the interests of the colleagues whom he met in consultation, and by the consideration and kindness with which he invariably behaved towards all, and especially the younger members of the profession. That it is with profound sorrow that this Society tenders its sincere sympathy to Mrs. Campbell and her family in the severe affliction

which the loss of such a husband and father implies, and desires to assure them that the members of the medical profession of this city and country feel it to be an irreparable loss to them."

Further remarks expressive of the esteem and respect in which the late Dr. Campbell was universally held were then made by several members of the Society. On the suggestion of Dr. Trenholme, the resolution was carried by a rising vote.

Dr. R. P. Howard moved that, as a practical expression of their sorrow, the members of the Society should wear some badge of mourning for one month.

Pathological Specimens.—Dr. Bell exhibited: 1st, A case of obstruction in the transverse colon by a cicatricial stricture from ulceration; adhesions had formed between the bowel and the peritoneum, which was ulcerated, resulting in the formation of an abscess between the peritoneum and the abdominal wall. The specimen was obtained from a middle-aged woman, a patient of Dr. Wilkins, who had her admitted into the Hospital some six weeks before with symptoms of obstruction. On her admission a tumour was evident, about the size of a hen's egg, one inch below the umbilicus and half an inch to the right of the median line. A purgative was administered, followed by considerable collapse, but free action of the bowels was produced; there being nothing peculiar noticeable about the stools, the bowels continued to act freely, but there was no diminution in size of tumour, which was hard and painless. Patient was kept exclusively on peptonized milk for about four weeks, when she had violent attacks of vomiting; being unable to retain any nourishment, rectal enemata of peptonized milk and brandy were now used. About this time the swelling became more superficial, and gave evidence of pointing externally. An incision was made a few days after, and a small amount of pus escaped, pus escaping continually in small amounts up to the time of her death, which occurred a week later. There was no enlargement of the glands. 2nd, A case of fractured 11th and 12th dorsal vertebra, from a fall down a hoist: patient died in. days. 3rd, Uterus of a patient seven days after confinement; whole interior covered with diphtheritic membrane. 4th, Abnormal distribution of the obtruator

artery which would encircle the neck of a hernia. 5th, Secondary cancer of ovaries and retro-peritoneal glands.

Subject of Paper.—Dr. Roddick then read a paper on “Remarks on Hemorrhoids, Fistula in Ano, and Fissure of the Anus.” He first called attention to the subject of rectal examination; he considered stooping to be the most favourable position for the male, as the condition of the prostate could also be made out; and the usual obstetric position on the left side for the female. He recommended the use of Reid’s Speculum, made with a fenestrated opening running its entire length, and fitted with a glass plate, which can be removed *in situ*. In the treatment of *External Piles*, he invariably incised the tumour and turned out the clot, or injected one or two drops of carbolic acid, and subsequently a sponge, wrung out of hot water, was applied for some hours. He strongly deprecated the use of the ligature for *Internal Piles* on account of the irritation which is produced and the length of time it takes for the mass to come away. He follows Smith’s method, viz., the clamp and cautery, employing the thermo-cautère instead of Smith’s cautery irons. The pain after the operation is very slight and of short duration, and the patient is seldom confined to bed for more than four days. In old standing piles, with much thickened tissue, he removes the mass by an elliptical incision, radiating from the anus, and brings the edges together by means of catgut sutures, and, if necessary, introduces a catgut drain. *Fistula in Ano*—The treatment of the ordinary single and uncomplicated fistula is easy and satisfactory, but when there has been burrowing of an abscess, and the condition known as horse-shoe fistula produced, caution must be shown. Always divide the sphincter at right angles, never obliquely, and never in more than one place at a time; if it be a long-standing fistula, scrape away the granulating tissue well by means of a Volkman’s spoon; would not hesitate to operate on a phthisical patient, if the phthisis happened to be in an early stage. *Fissure of the Rectum*—In treating this disease, he incises through its entire length, passing well into the fibres of the sphincter, and, if necessary, scraping the surface of the ulcer with a spoon. The application of Litric acid or the actual

cautery is often of service in obstinate cases. He employs iodoform largely in rectal surgery, both in the form of powder and suppository.

Discussion on Paper.—Dr. Hingston, while agreeing with Dr. Roddick on many points, objected to the actual cautery in treating piles; he recommended the removal of the mass by the ecraseur; he also considered the ligature very objectionable. In fistula, instead of scraping with the spoon, he found that the application of equal parts of caustic potash and water answered well. For fissure of the rectum, he would not use the knife; he favoured forcible tearing of the sphincter by the thumbs.—Dr. Trenholme would not hesitate to operate for fistula in the earlier stages of phthisis. In fissure of the rectum, he recommended the use of suppositories of subnitrate of lead and tannic acid.—Dr. Blackader's experience while in the Brompton Hospital for Consumption was that the operation was considered favourable in the early stages of phthisis.—Dr. Ross thought it often very difficult to decide as to the advisability of operating in phthisical conditions; all the circumstances should be carefully considered before interfering; he related a case of a strong, healthy-looking young man on whom he had operated, not knowing of his being phthisical at the time. Shortly after he developed phthisis, which ran a rapid course; the wound never healed up. Drs. Alloway, Wilkins and Kennedy also took part in the discussion.

Stated Meeting, June 23rd, 1882.

GEORGE ROSS, M.D., PRESIDENT, IN THE CHAIR.

The Secretary read a letter from Dr. Lorne Campbell, thanking the Society for the kind words of sympathy sent to his late father's family.

Treatment of Diphtheria.—Dr. Jas. Bell read a paper on this subject (*see page 727*), and spoke strongly against the use of steam during any stage of the disease. He also condemned, on theoretical grounds, the use of strychnia and electricity in the progressive stages of diphtheritic paralysis. Dr. Bell exhibited a live dog on which he had performed tracheotomy, and applied

a new instrument to keep the trachea open without narrowing, as is done with the different tubes in use. His apparatus consists of two clamps which seize the cut edges of the trachea, and are held apart by a flat chain going round the neck.

Dr. Stephen believed that steam in a room would raise the temperature of the air; he also remarked that there was very little danger of McGill graduates using either strychnia or electricity in the progressive stages of diphtheritic paralysis, as they were particularly cautioned by the Professor of Practice of Medicine against this.

Dr. Major said he did not use steam in diphtheria, but that the dry process was used now—gum or resin, with ether,—and desiccation of the membrane encouraged. Steam, he claimed, made the membranes more œdematous.

Dr. Fenwick said that many years ago Marshall Hall lectured in Montreal on epilepsy, holding that it was often caused by asphyxia, and advocated opening the trachea, but objected to the use of tubes; he used a wire and bent clips similar to those used by Dr. Bell.

Dr. Roddick uses steam after tracheotomy only to make the air humid and so prevent the secretions becoming dry. He also spoke of the good results he has always seen follow the use of sulphurous acid in diphtheria. He also burns sulphur in the room. He is a strong advocate of the germ theory of diphtheria, and believes that the vapor of sulphur becomes deposited on the mucous membrane of the larynx and trachea, and in that way anticipates the deposits of micrococci and destroys them when they arrive there. He gives internally Tinct. Ferri Mur. He is not at all satisfied with any of the tubes in use, as sometimes they cause mischief from ulceration, and perhaps perforation of the trachea. Pancoast's speculum, made after the fashion of the eye speculum, is the instrument which comes nearest to perfection in his opinion, but the great objection to it is, that after a few days the granulations crowd in and block up the opening. He would congratulate Dr. Bell on the ingenious instrument displayed by him, but saw one great objection to it, namely, the difficulty in keeping it in position during the violent fits of cough-

ing which so constantly occur in these cases. In the meantime, he knew of no instrument with fewer objections than the ordinary Trousseau's tube, with and without fenestra.

Dr. Hingston said all tubes should have a fenestra on upper surface to test when the patient can do without tube by putting finger on the outer opening. He uses Goodwillie's Nasal Specula, which are of three sizes, each having three prongs, and are easily introduced. He performed tracheotomy after the method of a German surgeon, which is to make a free incision through the skin and fascia, then make a nick down to the crico-thyroid membrane; push a director down along the trachea, under the thyroid; then raise the upper end of the director, and dislocate the thyroid downwards. This exposes three or four rings.

Dr. F. W. Campbell for years has used the treatment advocated by Dr. Bell of Glasgow. He believes it to be almost a specific.

Dr. Kennedy also spoke of the good results following Dr. Bell's (of Glasgow) iron treatment. He believed steam to be worse than useless. Thought Dr. Jas. Bell's clamps must in a short time cause sloughing of that portion of trachea held by them.

Dr. Mills believed that steam is sometimes useful in diphtheria. If sloughing is threatened, then steam as a poultice or vehicle might be of service.

Dr. Ross suggested caution in making sweeping assertions. He thought that steam was undoubtedly useful in some cases of diphtheria by promoting relaxation and secretion.

Dr. Blackader said the use of steam was very beneficial in the early stages, especially when the larynx is implicated.

Dr. Bell then replied to the different criticisms. He said the production of steam made the air in the room impure by removing the oxygen and adding noxious gases.

Cases in Practice.—Dr. Hingston mentioned having a few days previously removed a naso-pharyngeal fibroid after a method suggested to him by Dr. Frank Hamilton, jun., of New York, who was present at the operation, and which was done by detaching it with the index finger of right hand pushed through the nostril, helped by index finger of left hand in the mouth. The small bones of the nose were crushed; there was very great

hemorrhage, but after an hour's hard work he got it away. The patient recovered perfectly, without disfigurement. Dr. H. thought the shock very great, as it could not be done under an anæsthetic.

Dr. Fenwick did not like this operation at all, but much preferred Langenbeck's method as being easier for the patient who is anæsthetized, and also for the surgeon. He has performed the operation once with very little disfigurement to the patient.

Dr. G. T. Ross asked for information regarding the relation between scarlet fever and diphtheria, as he had a case of diphtheritic sore throat in a child having also an erythematous blush over the skin, followed by one or two other cases of undoubted scarlet fever in the same family, and also another member having diphtheritic sore throat, but no rash.

The President said the relation was very close. He believed all the cases were true scarlet fever.

Dr. Kennedy brought forward a recommendation from the Council in reference to entertaining the medical delegates of A. A. S. to Montreal. The matter was referred to the Council.

It was moved by Dr. Kennedy, seconded by Dr. Roddick,—
“That whereas the present Customs duties upon medical and other scientific books is found to be burdensome to the medical profession, and tending to retard the progress of scientific research, while at the same time it affords no protection to any industry, as such works are not reproduced in the Dominion. Therefore be it resolved, that this Society, through its Secretary, communicate with the other Medical Societies and Scientific Associations with the object of taking conjoint action in petitioning the Government to abolish these duties; and that a petition be drawn up for this purpose and forwarded to each Association for signature.”—*Carried.*

The meeting then adjourned.

BATHURST AND RIDEAU MEDICAL ASSOCIATION.

The summer gathering of members of the Ontario College of Physicians and Surgeons, residing in the Bathurst and Rideau district, took place at Smith's Falls on Wednesday, the 28th

June. Members were present from Arnprior, Almonte, Carleton Place, Pakenham, Smith's Falls, and Ottawa.

After routine business had been disposed of, the President, Dr. Cranston, delivered an able and appropriate address. He referred to the many changes that had occurred in the district, dwelling upon the death of Dr. Blackwood, who for forty years had practised his profession at Pakenham. As representative in the Medical Council of Ontario, he reviewed the proceedings of the recent session, explaining the changes that had been made, and expressed his satisfaction at the harmonious manner in which that august body had performed its duties. The association was also informed that an inspector for the district had been appointed, who since accepting the office had convicted two illegally practicing "doctors." He concluded his remarks by pointing out the benefit to be derived from such gatherings, and hoped each member would take a personal interest in the success of this association.

The officers for the ensuing year were then elected as follows :

President, Dr. Cranston, Arnprior. *Vice-Presidents*, Dr. Horsey, Ottawa, and Dr. Burns, Almonte. *Treasurer*, Dr. Hill, Ottawa. *Secretary*, Dr. Small, Ottawa. *Council*, Drs. Baird, Pakenham; Dickson, Pembroke; McCallum, Smith's Falls; Groves, Carp; Lynch, Almonte; Preston, Carleton Place; Sweetland, Grant, and H. P. Wright, Ottawa.

Dr. Powell read an excellent paper on Heart Disease, the significance of murmurs and the prognosis that might be given, received his chief attention. The thanks of the meeting were unanimously voted, and a general discussion took place on many of the points brought forward.

Dr. Wright reported a case of Diabetes Mellitus, also one of Phantom Abdominal Tumor. Dr. Cranston reported a unique case of gravid uterus with cervix unusually elongated. Some microscopical preparations of *Taenia solium* were exhibited by Dr. Small.

Drs. Baird, Burns, Horsey, and Prevost were appointed to prepare papers, and the meeting then adjourned to meet at Ottawa, in January next.

Before separating, the visiting members were entertained by Dr. Atchison of Smith's Falls, who by his hearty manner added greatly to the success of a day already pleasant and profitable.

H. B. SMALL, *Secretary.*

Extracts from British and Foreign Journals.

Unless otherwise stated the translations are made specially for this Journal.

Experimental Discoveries.—The studies of Chauveau and Burdon Saunderson upon pure vaccine lymph, which in its action is so much like the behaviour of syphilis, shows the contagious principle to reside in certain minute rounded bodies, which strongly refract the light, and which seem to be heavier than the lymph. Other workers believe they have found in the bacterial theory the most conclusive proofs that diphtheria, scarlet fever, erysipelas and other contagious diseases owe their existence to the diffusion of these minute organisms. Syphilis, too, has its advocates for a bacterial origin. "Klebs, (*Keyes Venereal Diseases*, page 62,) a well-known and thoroughly capable observer, cultivates a spore which he finds in syphilitic blood (apparently a moving bacterium), produces a plant, inoculates it upon an ape, produces consecutive ulcers recalling the ulcers of syphilis clinically and histologically, shows them to Professor Pick, who recognizes their resemblance to syphilitic ulcers, kills the animal, and finds between the dura mater and the skull a material much resembling gumma, and a quantity of organic germs analogous to the forms which had been inoculated upon the animal. Klebs placed a portion of a freshly extirpated syphilitic chancre under the skin of another ape; the wound healed without suppuration, the glands swelled lightly. In six weeks the animal had fever, and shortly afterwards a crop of papules came out upon the neck, head and face. The papules were flat, two or three millimetres in diameter, and of a brownish colour. These lesions scaled off, but did not ulcerate, and the papules, together with the fever, disappeared, leaving no trace." Indisputable evidences of syphilis were found *post-mortem*, and the blood of this ape contained plants looking very much like the

fungus which had been inoculated upon the first ape. The conclusions and researches of Klebs, however, must still be held *sub judice*. Beale (Disease, Germs, &c., p. 143), in speaking of the poison of syphilis, says: "It is a molecule of living matter derived by direct descent from the living matter of man's organism—living matter which retains its life after the death of the organism in which it was produced; living matter which has descended from the living matter of health, but which has acquired the property of retaining its life under new conditions; living matter destroyed with difficulty, and possessing such wonderful energy that it will grow and multiply when removed from its seat of development and transferred to another situation, provided only that it be furnished with suitable nutrient pabulum." Professor Otis (Otis on Syphilis), recognizing the pathological teachings of Verson and Beisiadecki, accepts the theory of Beale that the virus is living matter, and accounts for the induration partly by the rapid proliferation of the degraded and diseased cells derived from a syphilitic individual, and finds also an ample explanation for the incubative stage in the absorption and conveyance of the proliferated matters from the point of inoculation to the nearest lymphatic glands through the lymphatic vessels. Whatever the poison may be, whether bacterial, diseased germs, or some undiscovered entity, there can be but little doubt, I think, that the incubative stage marks the period during which only local changes are taking place; or during which the poison is developing, is being taken up by the lymphatics and through them distributed to the system at large. This incubative period is known to be rather irregular in duration, and it has been noticed that the incubative stage is longest when the point of inoculation is near or upon parts feebly supplied by lymph vessels; and is short when located amid these vessels, as near the frenum. It would seem logical to infer from these statements that the syphilitic poison always remained local during the incubative period or developmental stage; that it always infected the system only through the lymphatics, and hence if removed prior to the time the lymphatic glands became involved, should afford complete protection to the constitution. There is no doubt that the

glands do play a most important rôle in the distribution of the poison, but evidently the blood-vessels too are largely instrumental in the process. Auspitz is perhaps the most enthusiastic admirer of the practice of excision; he reports 23 cases, in 14 of which no secondary symptoms were met with. Kölliker sanctions the practice, and has recorded 8 cases, 3 of which remained free. Unna reports 3 cases, 2 being successful. The treatment by excision in properly selected cases can certainly do no harm; it more rapidly cures the initial lesion than by any other method, and tends thereby to check the further conveyance of the disease to others, and finally it holds out some hope of being actually a curative procedure.—*Maryland Med. Journal.*

Sewer Gas.—At the meeting of the Academy of Medicine on the evening of March 16, Dr. F. H. Hamilton presented a paper on “The Struggle for Life against Civilization and Estheticism: A Supplement to the Discussion on Plumbing, etc.” The doctor took a most gloomy view of our chances of life, and presented to the world the alternative either of returning to the simple mode of living of our forefathers or else of winding up its affairs and retiring from existence altogether. He reviewed the paper of Mr. Wingate and the discussion which followed it, and concluded upon the strength of the statements there made that there was nothing but danger in plumbing. We cannot ensure the exclusion of sewer-gas; none of the pipes in use are permanently impervious to gas; gas passes through the water of the traps with the greatest ease; and any means of disinfection we may employ is liable at some time or other to get out of order: consequently we have no safety except in the banishment of plumbers.

Upon the conclusion of Dr. Hamilton's paper, the President of the Academy called upon Dr. J. S. Billings, U.S.A., to favor the members with his views upon the subject under discussion. Dr. Billings thought there was altogether too much of a scare about sewer-gas. In the first place there is no such thing as sewer-gas, as an entity; there are certainly gases in the sewers, but they are ever-changing—one kind now, another an hour hence—some harmless, some injurious if inhaled in large quan-

tities. There are two questions, however, to be considered: first, whether any of these gases are ever inhaled in sufficiently concentrated form by the inmates of our dwellings to be injurious; and secondly, whether, any of the organic diseases are ever caused by gases, in however large quantities they may be inhaled. In regard to the quantity of gas escaping through the traps into the atmosphere of a dwelling, Dr. Billings related the results of some experiments which had been lately undertaken in Glasgow to determine this very question. When the soil-pipe was ventilated, it was found by the experimenter that the gas escaping through the trap was almost inappreciable in amount, and even where there was no ventilation the amount was too small to be injurious. These experiments were conducted in an old house, the soil-pipes of which were ascertained subsequently to be unusually foul. Dr. Billings thought that in all probability, though he would not at the present time assert it positively, the zymotic diseases were caused, *not* by gases resulting from the decomposition of animal or vegetable matter, but by minute organic particles—germs so-called. If such be the case (and there can be but little doubt that it is) it would be interesting to quote further from the Glasgow experimenter as to the possibility of these minute particles—the specific contagia—passing up through the water in the traps of the waste-pipes. In a second series of experiments, conducted in the usual way with a “culture-fluid,” it was found that not one single germ passed through the traps—the fluid remaining perfectly clear after weeks of exposure in the open mouth of the soil-pipe above the trap. The speaker did not wish to be understood as asserting that the gases coming from our sewers, if inhaled in concentrated form, were innocuous, but he believed that their injurious effects were seen, when seen at all, not in the production of acute diseases, but in a general lowering of the system, rendering the subject exposed to their influence more liable, perhaps, to take a contagious disease and less able to resist it when once established. He believed, however, that with good plumbing the amount of these gases escaping into a dwelling was too small to be a source of danger to the inmates, and he deprecated the

exaggerated view of the evils of sewer gases as expressed by many of the profession as well as by the majority of the laity.

People may cry out against the dangers to which we are exposed on all sides by reason of the advance of civilization, and of the increase in home comforts or luxuries—but what are the facts? Are we worse off now than our fathers were? The rising generation in our cities is not a sickly and puny race, but the reverse—athletic sports are the fashion, not for the young men alone, but also for the women—sallow complexions, hollow chests and weak frames are the exception and not the rule, and one looks in vain in the faces of those he meets in the streets for the evidences of poisoning by the deadly gases, which the alarmists assure us are filling our dwellings and sapping our health and strength. Of course defective plumbing should be guarded against by every means in our power, and we would not recommend sewer-gas as a tonic to our patients, (though, as Dr. A. H. Smith very pertinently asked the Academy, if sewer gas is such a deadly poison, how comes it that plumbers are not carried off by it?) yet it certainly is a pessimistic view to take of the subject to cry that our lives are endangered if we allow a water-closet or a bath-tub or a sink to be placed or to remain in our houses. The whole question of house sanitation and drainage demands a more careful study at the hands of the medical profession than it has hitherto received, and when it receives this attention, it is safe to say there will be less of an outcry against the “modern improvements.” When the writer was residing in one of the cities of Connecticut he was invited to attend a meeting of the physicians of the place, called for the purpose of investigating the cause of an epidemic of diphtheria. The city had an abundant supply of pure water, but no system of sewerage, and in the consequent soil pollution undoubtedly lay the solution of the problem. It was proposed by some of the gentlemen present to urge upon the city authorities the introduction of a sewer system—for which the city by reason of its situation was admirably adapted—but the suggestion was not acted upon, the majority of the medical faculty thinking that open cesspools, foul vaults and a filth-soaked earth were far preferable to the horrors of sewer-gas.—*N. Y. Cor. New England Med. Monthly.*

Formation of Hyaline Tube-Casts.—

V. Cornil has (*The Practitioner*, Feb., 1882,) studied the morbid kidney changes in albuminous nephritis by aid of pathological specimens from a case occurring spontaneously in man, which also demonstrates the mode of formation of hyaline cylinders. The patient, after exposure to cold, had an attack of acute Bright's disease. Death, preceded by anasarca and uræmic coma, occurred seven weeks later. Examination of the swollen, injected kidneys showed very plainly the rôle of the renal cells in the production of intra-tubular exudation. A vacuole filled with liquid first forms in the interior of the epithelial cells, which projects; then the wall of the cell breaks, and a little drop falls into the cavity of the tubule. These clear or granular globules are observed in greater or less quantity, in a greater or less number of tubules, in every case of albuminuria. The chemical nature of these globules has not as yet been perfectly determined. The exudation, besides, is composed of red blood corpuscles, leucocytes and blood-serum, the latter constituents being more manifest in these glomeruli. The farther these different parts of the exudation pass on from the place where they have been poured out, the more they become mixed into a homogenous mass, which coagulates. So originate hyaline casts. The narrow parts of the tubule composing Henle's loop form a kind of wire-drawing apparatus, and as the colloid coagulum passes through these it is drawn out, taking a regular form, which it preserves in the wide intermediate convoluted parts of the tubule and in the straight tubule. Thus constituting veritable hyaline casts.

Experimental Production of Abdominal Pregnancy.—

Dr. Leopold of Leipzig, Germany (*Archiv für Gynakologie*), has produced artificially, in rabbits, abdominal pregnancy by transferring to the abdomen of a non-pregnant rabbit the embryo only in some cases, and in others the embryo, its membranes, and placenta. Embryos two and a half, five, six and eight centimetres long were transplanted; those of the latter size being as near maturity as could be obtained. The experiments resulted in two ways. In one, peritonitis followed, from which the animal soon died; in the other

case, the animal survived and the foetus became encapsulated. In the cases where peritonitis was excited, the foetus underwent rapid disintegration. Of the smallest embryo, no trace was found on the death of the animal on the second day. Where no peritonitis was excited, the animals were killed at periods ranging from three to seventy days after the operation. The foetus had, as a rule, become encapsulated, but the very early embryos were absorbed, no trace of them being left. In the older embryos there was more or less absorption of the soft parts; the skeleton was left and there was growth of bone or cartilage. Dr. Leopold concludes that cases of extra-uterine gestation ending in rupture of the sac and escape of the foetus into the abdominal cavity are, perhaps, much commoner than is generally believed, the symptoms being those of pelvic hæmatocœle, and the case ending in the absorption of the foetus.—*Chicago Med. Review.*

Roasted Coffee as a Disinfectant.—Dr. Barbier, in the *Journal de Médecine et Pharmacie de l'Algérie*, relates his first experience with roasted coffee as a disinfectant, and presents it in a manner that leaves little room to doubt its efficacy in this regard. Some 19 or 20 years ago his services were called into requisition as a medical expert, and in the performance of his duty he found himself one day in company with the magistrate of Roaune and his suite, at a country inn, in which a man had been assassinated the evening before. It was excessively hot, so much so as to surpass the highest temperature known to Algeria. The party was introduced into a closed chamber, where the body of the victim lay on the ground, but they were all seized with so alarming a sense of asphyxiation on entrance, that they incontinently beat a retreat, and the physician was the first to lead the inglorious movement. In a moment, however, the magistrate, without being much disconcerted, asked for some ground coffee from the innkeeper, who at once brought a plate full, and the worthy magistrate proceeded to liberally spread it over the cadaver, around the walls and the floor. Instantly the odor disappeared and the physician was enabled to make the autopsy without further inconvenienc. The surprise of the medical authority at this unexpected change in the sur-

roundings was only equalled by that of the legal light on learning that such a method of disinfection was unknown. Some time after, Dr. Barbier had occasion to make another autopsy upon the body of an infant which had been fully a week in the water, and he met with the same success in removing the intolerable effluvia. In another instance, in which the remains of an old clergyman were exposed in a *chappelle ardente*, the mephitic exhalations present were completely neutralized by a quantity of Mocha coffee, much to the general astonishment.

Dr. Barbier expresses his regret that it had not occurred to him to use coffee, either in powder or decoction, at an earlier date, in the treatment of foul ulcers, or as an addition to the applications necessary after surgical operations; but he has recently given it a successful trial in a case of ulcer of the sacrum in an old Jew suffering from tabes, and intends hereafter, to replace the usual classical combinations of charcoal, quinine and chloride of lime in poultices by this new agent, wherever these last have been applicable, as in all ulcers of a sluggish nature, anthrax, etc. It is to be further regretted, he feels, that the delicious aromatic principle of coffee should be lost in the process of torrefaction, and an effort should be made to utilize it as much as possible in purifying our households with it. Dr. Barbier notes also the neutralizing effects of coffee in the narcotism produced by tobacco and other noxious *solanee*. There is no better antidote. Every one addicted to smoking knows how quickly the narcotic drowsiness frequently experienced is dissipated by half a cupful of that beverage. Whether this useful berry exhibits its virtue as a disinfectant by reason of simple absorbing powers, rather than any chemical action, is not known, but its usefulness as a neutralizing agent cannot be questioned.—(*La France Medicale.*)—*Therapeutic Gazette.*

Therapeutical Action of Ergot.—From its action on the circulation and the nervous system it is evident that ergot possesses a wide therapeutical range. In mentioning a few diseases in which I have found it useful, I would place at the head of the list—*Pertussis*. I am aware that in this disease a vast number of remedies are useful, but after a pretty extensive

trial both in hospital and private practice I am inclined to regard ergot as the best and safest. Up to the time when I began to use ergot I regarded the combination of bromide of potassium and tincture of belladonna, or sulphate of zinc and tincture of belladonna, as the best remedies with which I was acquainted, but that sometimes necessitated the belladonna being pushed to its physiological action before the disease would yield. That was sometimes not unattended with danger in young children unless they were carefully watched, which cannot be easily done in hospital or dispensary practice. Ergot seldom fails to cure whooping-cough in from one to three weeks; the cases that are longer in getting better are those complicated with bronchitis, or with troublesome bronchial catarrh. I give from four to fifteen minims of the liquid extract every three or four hours to children of three months and upwards. The benefit of the secale is at once apparent, the fits of coughing occur less frequently, and are not so severe when they do occur. I usually give it alone with a little sugar, but in complicated cases it may be combined with other remedies, and especially with the compound syrup of the phosphates, to complete the cure when there is debility.

—*Dr. Dewar in Practitioner.*

On the Treatment of Phthisis by Inhalation.—Dr. S. Dowse read a paper on this subject. He prefaced his paper by referring to the recent very valuable discovery of Dr. Koch, concerning the tubercle-bacillus; and he thought that the inflammatory theory of tubercle, and Dr. Sanderson's recent lectures at the College of Physicians on Inflammation, tended to support rather than to detract from the results of Dr. Koch's original investigations. Dr. Dowse, through the kindness of Dr. Blake, was enabled to show to the members present many forms of respirators, including one of Dr. Blake's invention, which were useful and adapted for the purposes of inhalation. Dr. Dowse said that it was more than ten years ago when he first began to treat pulmonary consumption by inhalation; and he regretted that, until recently, he had not carried out his experiments with that care which so important a subject demanded. During the months of September, October, Novem-

ber and December, 1881, he had treated his patients in the North London Hospital for consumption, by several forms of inhalation, and he almost invariably had good results. He thought, however, that the process of inhalation was far from perfect, and he hoped for better results in the future. Short histories and notes of several cases were brought forward as evidence in favor of this mode of treatment. He spoke particularly of the value of acetic ether as an inhalant; in fact, he went so far as to say this drug was, in his opinion, capable of dissolving nascent tubercle. The mixture which he generally used had the following composition: ℞ Thymol, ʒiij; ætheris aceticæ, ʒiij; ætheris sulph., ʒi; creasoti, ʒiij; acidi carbolicæ, ℥xv; terebinth. ad ʒiv. Ten drops to be used at a time for an inhalation. He laid great stress upon continuous inhalation: for instance, two hours in the morning, afternoon and evening, as well as during the whole night. The subject appeared to be of considerable interest. A lively discussion followed.—*Brit. Med. Journal.*

A Method of Removing Benign Tumors of the Breast without Mutilation.—Prof. T. Gaillard Thomas, surgeon to the New York State Woman's Hospital, contributes to the April number of the *New York Medical Journal and Obstetrical Review* a paper, in which he expresses himself in favor of removing benign tumors of the breast as a rule, because the mere presence of a tumor in the breast usually renders the patient apprehensive, nervous, and often gloomy, while, with our present improved methods of operating, the patient is exposed to slight risks, the danger of growth of the tumor is removed, and with this disappears at the same time that of the subsequent degeneration of a benign into a malignant growth. If, in addition to these advantages, we can add the avoidance of all mutilation to the person, we have strong grounds for departing from the practice of non-interference. The method of operation described, Dr. Thomas has practiced thus far in a dozen cases. He distinctly states that it is entirely inappropriate for tumors of malignant character; and that it is applicable neither to very large nor to very small benign growths, being insufficient for the former and unnecessarily radical in its

character for the latter. The growths for the removal of which he has resorted to it have been fibromata, lipomata, cysts, and adenomata, and have varied in size from that of a hen's egg to that of a duck's egg or a little larger. The operation is thus performed: The patient standing erect and the mamma being completely exposed, a semicircular line is drawn with pen and ink exactly in the fold which is created by the fall of the organ upon the thorax. This line encircles the lower half of the breast at its junction with the trunk. As soon as it has dried the patient is anæsthetized, and with the bistoury the skin and areolar tissue are cut through, the knife exactly following the ink-line until the thoracic muscles are reached. From these the mamma is now dissected away until the line of dissection represents the chord of an arc extending from extremity to extremity of the semi-circular incision. The lower half of the mamma which is now dissected off is, after ligation of all bleeding vessels, turned upward by an assistant and laid upon the chest-walls just below the clavicle. An incision is then made upon the tumor from underneath by the bistoury, a pair of short vulsella forceps is firmly fixed into it, and, while traction is made with it, its connections are snipped with scissors, the body of the tumor being closely adhered to in this process, and the growth is removed. All hæmorrhage is then checked, and the breast is put back into its original position. Its outer or cutaneous surface is entirely uninjured, and the only alteration consists in a cavity at the former situation of the tumor. A glass tube with small holes at its upper extremity and along its sides, about 3 inches in length and of about the size of a No. 10 urethral sound, is then passed into this cavity between the lips of the incision, and its lower extremity is fixed to the thoracic walls by India-rubber adhesive plaster, and the line of incision is closed with interrupted sutures. In doing this, to avoid cicatrices as much as possible, very small round sewing-needles are employed: these are inserted as near as possible to the edges of the incision, and carry the finest Chinese silk. After enough of them have been employed to bring the lips of the wound into accurate contact, the line of incision is covered with gutta-percha and collodion, and the ordi-

nary antiseptic dressing is applied. If the glass drainage-tube acts perfectly, there is no offensive odor to the discharge, and the temperature does not rise above 100° ; the tube is in no way interfered with until the ninth day, when the stitches are removed. If, on the other hand, the tube does not appear to perform its function satisfactorily, it is manipulated so as to cause it to drain all parts of the cavity, and warm carbolized water is freely injected through it every eight hours. On the ninth day, when the stitches are removed, the tube is removed likewise.

Muscular Action in the Pathology of Hip Disease.—In the July number of the *New York Medical Journal and Obstetrical Review* Dr. A. B. Judson, Orthopædic Surgeon to the Out-Patient Department of the New York Hospital, discusses some points in the morbid anatomy of hip disease, with special reference to the supposed effect of muscular contraction in promoting the progress of pathological changes in the articular structures. A careful review of the most important observations on record leads him to the inference that the crowding of the articular surfaces together by muscular action has no such effect. What mainly points to this inference is the fact that the primary lesions are not usually to be found in the superficial structures that enter immediately into the formation of the joint, but rather in the cancellous texture of the bones. This conclusion, however, casts no doubt upon the utility of the extension treatment, but simply leads to this interpretation of its beneficial action: Aside from the fact that we are compelled, empirically, by reason of its anodyne quality, to use traction, there is ample rational ground for its use. Traction, however applied, is unavoidably accompanied by fixation. The most efficient apparatus for the application of traction is, at the same time, the most efficient means known to surgery for the solution of that difficult problem, the immobilization of the hip joint; and, finally, immobilization is indicated by every feature of the pathology as revealed in morbid specimens.

Listerism.—Here antiseptic surgery in its protean forms occupies a prominent position, and in the different hospitals, and often in the same hospital, one hears the most contradictory

views and sees the most varied practices. At St. Bartholomew's, Mr. Willet observes the strictest antiseptic precautions in everything; others of the staff use some of the modified forms of dressing in particular cases, while Mr. Savory smilingly claims that he obtains better results without disturbing the comfort of a single bacteria that may chance to float around his operating-table. At the Samaritan, Mr. Thornton practices Listerism at every step of his ovariectomies by the side of Dr. Bantock, who, believing that this method is not only useless but hurtful, simply puts his instruments and sponges in clean water to keep them moist, uses no spray, and dresses the abdominal wound with thymol gauze and plain cotton wool. Much the same condition of things is seen at Soho Square, the London, and other hospitals, exceptions being at King's College, where Mr. Lister and Mr. Wood show germs no quarter, and at the British Lying-in Hospital, where Dr. Fancourt Barnes, warmly encouraged by Dr. Robert Barnes, delivers every woman under the spray, keeps one playing in the wards day and night, and uses a carbolic solution for instruments, hands, and injections from the beginning of labor to the discharge of the patient, in utter disregard of the belief of the majority of the profession that the poison which makes the puerperal state hazardous is autogenetic and not from without. Then, as if to calm the medical Siloam, Mr. Lawson Tait, whose boldness and success seems to act as a chronic irritant to the profession here, which is nothing if not conservative, comes forward, and in an able paper, bristling with facts and statistics, admits the germ-theory on which Listerism is based as applied to dead matter, totally denies it in its application to living tissue and consequently to surgical practice, and, after detailing his own large experience with it, plants himself by the side of Bantock and Keith in the position that Listerism, in abdominal surgery particularly, is not only unnecessary but dangerous, producing death from nephritis in some cases, almost uniformly increasing the temperature, and otherwise retarding the convalescence. It has been currently reported recently that Mr. Lister was giving up the use of the spray, but having seen him operate many times, and having the pleasure a few evenings

since of being at his house, where he showed me his latest method of preparing the ligatures and other materials connected with his dressing, supplemented by an interesting history of the evolution of his discovery from its small beginning, it is safe to say that while he fully appreciates some of the disadvantages which are urged against his method, and is experimenting with other substances in the hope of finding something which will possess all the power for good and none for harm of carbolic acid, his faith in antiseptics is unshaken, and he believes that much of the present scepticism in regard to its value has grown out of the imperfect manner in which many surgeons carry it out and to the bad results of modifications of it, which are only antiseptic in name. Hopes were entertained for a time that iodoform would meet the "long-felt want" for a safe dressing, but although it has never been dished into amputation and other large flesh-wounds here with the freedom which Billroth and other continental surgeons use it, but is simply dusted over the surface from a pepper-box or applied on gauze to the outside after the wound has been closed, unpleasant results have been of sufficient frequency to point out that great caution is necessary in its use. For smaller wounds, particularly those made in operations in the mouth, throat, rectum and uterus, to which the carbolic dressing cannot be applied efficiently, the iodoform is much used, particularly by Mr. Heath, and with a success which seems strongly to attest its antiseptic power. What the outcome of this whole question will be, of course no one can foretell, but for the present I think it may be safely said that while many of the best surgeons here believe in and practice strict Listerism most zealously, and a still larger number do so to a greater or less extent to give their patients the benefit of all doubts, there is an unmistakeable drifting into the belief that cleanliness is the great object to be aimed at, and that that method is best which most certainly secures this end.—*London Cor. Amer. Practitioner.*

The Treatment of Typhoid Fever in the past Four Years.—A review of the literature covering the subject of typhoid fever since 1878 is communicated to Schmidt's *Jahrbucher* by Dr. Arthur Geissler. It is interesting

to note that a very large proportion of this literature is devoted to the subject of etiology and prophylaxis. Too much, indeed, is said to permit of any adequate criticism of it here. The subject of therapeutics of the disease occupies a much less space. Indeed, considering the extensive prevalence of the disease and the mortality therefrom (four per 100,000 inhabitants in German cities), the question as to how it is best to be dealt with by the physician has received surprisingly little attention. In the articles that have been contributed we find that the measures recommended may be classed under three heads—the antipyretic treatment, the antiseptic treatment, and miscellaneous methods. The antipyretic treatment still excites the most discussion. In Germany it means the use of baths, of quinine, and of salicylic acid. In this country other means of cooling the body than baths are resorted to, the most frequent being probably sponge-bathing. It is noticeable that there is very little literature regarding the efficacy of baths, and Geissler states that in German hospitals the mortality from typhoid fever has considerably increased since eight years ago. In 1877 it was 12.8 per cent. among 10,901 cases; in 1878 it was 13.5 per cent. among 12,406. In the years 1879-81 the figures are still more unfavourable. In Dresden, between the years 1850 and 1870, before the antipyretic treatment was introduced, the mortality was 12.6 per cent. among 3,387.

Those authors who have written recently upon this subject continue for the most part still to recommend it, but not with the exaggerated praise heard eight years ago. A. Vogel had a mortality of one in seventy cases treated with baths; Morf speaks guardedly regarding their employment; Hensch and Asby all caution against frequent cold baths for children; Keulich is enthusiastic over wet-packs combined with systematic high feeding; Steffin was only moderately successful with wet-packs; Zenetti advocates Ziemssen's treatment with calomel, baths, and quinine. One finds little said about the antipyretic value of quinine. There has been a tendency to substitute salicylic acid for it, but the results obtained seem discouraging. Of five authors who report their experience only one advocates its use.

The drug in large doses reduces temperature, but its action is temporary, and is likely to weaken the heart and disturb digestion. Hallopeau and a few others think that by alternating salicylic acid with quinine better results are obtained. A survey of the recent literature collected by Geissler upon the antipyretic treatment of typhoid fever leads to the impression that the roseate views once entertained for it are not being justified. Certainly no American statistics have been collected which show positively that the treatment by baths or by large doses of quinine has any real influence upon the mortality in American typhoid. The measure seems to be helpful in some cases. That is all that can be said.

We referred some time ago to the antiseptic treatment of typhoid fever advocated by Roth. Dr. B. Bell claims good results from a similar method in which he uses eucalyptus. But the antiseptic treatment, as a special remedial method, has as yet no solid basis. The "water-diet" treatment, strenuously advocated by Dr. Luton, of Rheims, has a curious interest only. He gives his patients only cold water, but this in large quantity, for the first four or eight days. In this way he "washes out" all the disease-germs from the bowels and the blood. Whether he cures his patients may be considered doubtful. The medical profession cannot be said to have yet formulated a treatment for enteric fever which receives any unanimous adoption. This is not to our credit, for it is very largely due to the fact that we do not work as a body, and our individual experiences are not therefore utilized.—*N. Y. Med. Record.*

Dermatolysis : Fibroma Pendulum.—

At the University Medical College, March 28th, 1882, Dr. H. G. Piffard, Professor of Dermatology, presented a unique illustration of "dermatolysis" in the person of Herr Haag, the so-called "India Rubber Man," or the man with an elastic skin. In comparison, a man who had a fibroma pendulum of the scalp, was exhibited, the disease consisting of hypertrophy of the white connective tissue of the skin. In this instance the integument has no more than the normal amount of elasticity. This condition has, by some, been called dermatolysis, but when compared with

the case of Herr Haag, it was readily seen that the fibroma pendulum is not a true dermatolysis, or loosening of the skin.

Two hundred and twenty-five years ago a case of loosening of the skin, or true dermatolysis, existed, and has been described by Makron (?), who says that "in 1657 a Spaniard, twenty-five years of age, presented himself to our hospital, who could grasp the skin of the right breast, or shoulders, and stretch it out until it covered his mouth, and a like elasticity existed in other parts of the body." The skin of Herr Haag has the normal appearance, except that the small veins show much more distinctly than normal. He has always been aware that his skin was looser than that of other persons, and noticed it when compared with the skin of other boys. When drafted for military service in his native country, the surgeon in examining him noticed, to his surprise, that the skin could be stretched out in broad folds, and on account of his abnormality regarded him as entitled to exemption from doing military duty, and he was discharged. While under the observation of dermatologists in Vienna, a section of skin was removed from the anterior aspect of the right arm, for microscopical examination, and the report was that there was no change in the skin itself, but there was a decided absence of the subcutaneous fat and cellular tissue, which permitted the skin to slide and be stretched over the body. At any part of the body the skin did not stretch to a very great extent longitudinally, but transversely or laterally it could be drawn out to five or six, or more times the normal distance, and as soon as the traction was removed it returned to the normal position and appearance.

By the aid of a calcium light, arranged by Dr. M. N. Miller, and a prism, Prof. Piffard was able to ascertain the spectrum of the blood in the human circulation, and it was demonstrated that it yielded the ordinary *double* absorption bands of oxy-hemoglobin, and not the spectrum of reduced hemoglobin.—*N. Y. Med. Record.*

Baptiste-Jacob, the new Siamese Twins.

—The brothers Tocci, born in Turin in 1877, are considered to be even more curious than the famous Siamese twins. They have two well-formed heads, two pairs of arms, and two thoraces, with

all the internal organs; but at the level of the sixth rib they coalesce into one body. They have only one body, one umbilicus, one anus, one right and one left leg. Their genital organs consist of a penis and scrotum, and at the back there is a rudimentary male genital organ, from which urine sometimes escapes. It is a curious fact that the right leg moves only under the control of the right twin (Baptiste), whilst the other leg is movable only by the left twin (named Jacob). As a result they are unable to walk. The left foot is deformed, and is an example of talipes equinus. Each infant has a distinct moral personality: one cries while the other is laughing, and one is awake while the other sleeps. When one is sitting up, the other is in a position almost horizontal.—*Presse Médicale Belge*.—*Medical Times*.

American Gynæcology.—Who reads an American book? was once asked by a notorious English satirist and cynic. The question now asked in England and in Europe is, who is there that does not read American books? There are few good books, even in medicine, published in this country, which are not read abroad. More than this, many of them are republished there. Perhaps one of the most interesting facts in this connection is, that Mr. Keith, the celebrated ovariologist, one not excelled anywhere, has sent his son to take a course in gynæcology in New York! He says that in England, France, and Germany, they "know a thing or two," but that in no city of the world is gynæcology so well taught and illustrated in practice as it is in the city of New York! Who, twenty years ago, could have believed such a fact to be possible? And to whom is all this honor primarily due? To Marion Sims, the founder of this great specialty; *palmas qui meruit ferat*. For a century American medical literature and American medical practice has been ridiculed abroad; now the great change has come; medical Europe looks to America, and offers her praise and gratulation.

"Let the kettle to the trumpet speak;
The trumpet to the cannons without;
The cannons to the Heavens, the Heavens to earth,
Now the king drinks to Hamlet."

—*American Medical Weekly*.

CANADA

Medical and Surgical Journal.

MONTREAL, JULY, 1882.

PHYSIOLOGICAL KNOWLEDGE.

We have received a circular, and have also seen in some of the daily papers the announcement of the formation of the "Society for the Diffusion of Physiological Knowledge of Canada." From its title it might be supposed that the object of this Association was to encourage the teaching of elementary physiology and biology in schools and colleges—to institute courses of popular lectures on these important subjects in the various towns and cities, &c. Not so, however, for we find that the object, as stated in its prospectus, is to scatter broadcast throughout Canada pamphlets and tracts concerning the ill effects following upon what is known as the secret evil. Any well-directed effort in this direction would have been sure to meet with the cordial co-operation of the medical profession throughout the country, but we think there are the best of reasons why the names of physicians are conspicuous by their absence in the published list of members. It is but a short time since we drew attention to the proceedings of the Quebec Provincial Medical Board, in which the Medical Director of the concern whose title is given above was the subject of very severe remarks on the part of several prominent members. The occasion was a discussion on the propriety of any individual circulating such tracts as are here spoken of. The views then expressed are those of the whole profession. They do not believe that a good end is to be served by this process, but rather that it is constantly open to great abuse. A noticeable feature of the Society is the predominance of the clerical

element, a majority of the whole being pastors of congregations. The very best intentions must be credited to these gentlemen, but it will occur to many to observe with what singular want of judgment and discrimination clergymen are apt to think and act when their sympathies are appealed to. Surely it would have been the part of wisdom to have ascertained who were the promoters of this Society, what was their record, and what standing the proposition had with the medical profession, before lending to the scheme the deservedly great influence of their names. We believe that the more this scheme is investigated, the less it will be found worthy of support, and the quicker the true inwardness of it is understood, the more rapidly will its membership decline. We do not wish to say more. The above is simply enough to convey the estimation in which it is held by the profession generally, and to warn benevolent-minded persons from joining in doing that which they might subsequently regret.

—The Bacillus of Tuberculosis described by Koch—the translation of whose article we have been able to give our readers through the kindness of our old friend Dr. Oakley—has been successfully demonstrated by Prof. Osler at the Physiological Laboratory of McGill College before the class of senior students. It was found, as stated by the author, extremely small and quite unlike either the bacillus of putrefaction or that from the blood of splenic fever. The specimen examined was taken from the lung of a man who had died of rapid general tuberculosis.

AMERICAN DRUGS.—Some weeks ago I referred to the fact that the American drug houses, through their agencies in this country, appear to be slowly, yet none the less surely, supplanting our English drug houses. This is being done by persistent and extensive, one might almost say reckless, advertising. In the matter of pushing business, Brother Jonathan is far and away ahead of John Bull; and if John of the drug stores does not mind what he is about, he will wake up one fine morning and find that, whilst he has been sleeping, Jonathan has improved

the occasion by securing all his best customers. Some of our old, and at one time famous, druggists never advertise or issue an announcement to let the new race of practitioners know where they are to be found, and would think it a gross breach of business etiquette if they informed the ignorant what they have to sell, or the price of their wares.—*Students' Journal*.

A CORRECTION.

To the Editor of THE CANADA MEDICAL & SURGICAL JOURNAL.

SIR,—Through some unaccountable proceeding on the part of the “devil” who is supposed to haunt printing offices and vex the souls of writers who have not read their own proofs, I am made, in an article in your last number, to say that a *stillborn* child performed various movements and facial contortions. Please state for me that the word I have italicized nowhere appears in my manuscript. The only comfort is, the error is so absurd that my worst enemy could hardly think I really meant it.

J. J. GUERIN.

[Dr. Guerin's correction of an error in our June No. had been received when the following poetical effusion on the same subject also arrived. *N.B.*—Stillborn is not synonymous with dead, as the poet seems to think.—*Ed.*]

DEAD OR ALIVE?

(*Vide CANADA MEDICAL & SURGICAL JOURNAL*—

P. 655, “The child came into the world *stillborn*,”

P. 656, “There was inability to open the left eye, but the child was able to move both arms and legs.”)

I reside at Beaver Mountain, and my name is Truthful James,
I am not up to small deceit or any sinful games;
And I'll tell in simple language, or rather I will try,
The story of a stillborn—an abnormality.

But first I would remark, that it's not a proper plan
For a scientific gent to mislead his fellow-man,
By using language hidden, instead of that what's plain,
And thus to lose in sorrow his exemplary name.

It was the month of May, and the lilacs were in bloom,
When there came unto my portal in the evening's dusky gloom,

One calling for a doctor, to come with him along
To Mrs. R— in labor, and whose pains were getting strong.

The painful part soon over, joy ushered in the morn,
But, alas! its stay was fleeting—the infant was *still-born!*
Its puny size I noticed, as it safely crossed the “pons,”
And I thought me of the fable of the mouse and groaning “mons.”

Its left face had a mournful look, because I'll tell you why,
Its mother had been frightened by a man with a *sinister* eye;
That it was an abnormality is not difficult to prove,
For though the kiddie was *still-born*, its arms and legs did move!

And this is all I have to say of this abnormality,
That moved its little arms and legs and winked its dexter eye;
For I live at Beaver Mountain, and my name's Veracity Jim,
And I've told in simple language, the story of a whim. H. B.

Obituary.

DR. PEACOCK.—The death of Dr. Peacock removes a London physician widely known throughout Canada, not only by his writings, but personally to the many students who have profited by his teachings at St. Thomas' Hospital, to which school, for years past, the majority of Canadians have resorted. He was an accurate observer and a sound clinical teacher, not brilliant, but to the earnest student always profitable and suggestive. He was specially interested in diseases of the heart and lungs, and his writings deal largely with these subjects. Like so many of the leading London physicians, he was a thorough pathologist, and collected a large number of valuable specimens, chiefly illustrating cardiac pathology, which are now in the College of Surgeons Museum. His death was from apoplexy, the third attack; the first having been in 1877.

DR. HAYES W. LLOYD.—The Class of '79 has lost a favorite member by the death of Dr. Lloyd, which took place in London Ont., on the 18th ult. He began practice in London, and just as success seemed assured, symptoms of phthisis developed, and he went South in search of health, but in vain. The disease made rapid progress, and he returned home and died in a few

days. As a student, he distinguished himself by diligent attention to his studies, and he took a prominent part in the establishment of the McGill Medical Society. His genial manner endeared him to his fellow-students, one of whom, in writing to tell of his death, well said "that the profession had lost an honourable member and McGill a worthy son."

Medical Items.

PERSONAL.

APPOINTMENTS MONTREAL GENERAL HOSPITAL.—Dr. J. A. MacMonald has been reappointed for another year, and Drs. T. N. McLean and W. T. Duncan have been appointed Resident Medical Officers.

Dr. Gardner has returned from his wedding-tour.

J. T. Halliday, M.D. (McGill, '65), of Grafton, Ont., is about to remove to Peterboro.

H. C. Burritt, M.D. (McGill, '63), is about to remove to Toronto.

H. V. Ogden, B.A., M.D. (McGill, '82), has joined Dr. Rankine Dawson on a Section of C.P.R., Manitoba.

W. A. Thompson, M.D. (McGill, '82), has been appointed Assistant Surgeon to the Eastern Section of C.P.R.

Herman E. Heyd, M.D. ('81), Reuben Levi, M.D. ('76), and W. D. Oakley, M.D. ('77), are in Vienna.

R. A. Alexander, M.D. ('71), of Granby, has left for a short trip to Europe.

Edward W. Smith, A.B., M.D. ('82), has commenced practice in West Meriden, Conn.

Dr. Henry Howard, Med. Supt. of Longue Pointe Asylum, has a work on Insanity in the press.

Prof. Wm. Osler has been elected an honorary member of the New York Pathological Society.

Dr. A. Henderson has sailed as surgeon to the S.S. *Desirade*, belonging to the new Brazilian line.

H. A. Higginson, M.D. ('81), has returned from Portage La Prairie all the better in health and pocket for his attack of "Manitoba fever."

Dr. J. A. Grant, of Ottawa, was elected, on the 1st June last, a Fellow of the Royal College of Physicians. Dr. Grant has been a member since 1864.

Mrs. O'Reilly, for so many years a nurse at the General Hospital, died at the Winnipeg General Hospital on the 20th June. She had only been there a few months.

The following members of the Class '82 have gone to London to pursue their studies: R. J. B. Howard, B.A.; J. A. Grant, B.A.; H. W. Thornton, B.A.; B. F. W. Hurdman, and W. C. Cousens.

Among the distinguished visitors at the American Association for the Advancement of Science, which meets in Montreal on the 23rd of August, will be Dr. W. B. Carpenter and Dr. Morrell Mackenzie.

We were pleased to have a visit from Dr. Lomer, of Berlin, son of our esteemed fellow-citizen, G. Lomer, Esq. Dr. Lomer has deserted his native country for the "Vaterland," and has before him a distinguished career. He has already been Prof. Credé's assistant in the Gynecological Clinique at Leipzig, and now returns to Berlin, where he has received the important appointment of assistant in Prof. Schroeder's Gynecological Department.

James Robertson, M.D. ('65), and P. A. McIntyre, M.D. ('67), have been returned members of the House of Commons from P. E. Island constituencies. Dr. Robertson was elected a few weeks ago to the Local House, but has resigned this seat for the Dominion one.

DEATH FROM NERVE-STRETCHING.—Socin, Langenbeck, Billroth, Weiss, Berger, and Benedict have each killed his man

through nerve-stretching in locomotor ataxia. Violence had been done the spinal cord in these cases, as was evidenced by vomiting, singultus, and paralysis of the bladder. Billroth has abandoned the operation, and Althaus considers it an unsafe measure.—*Gaillard's Journal*.

THE MEDICAL STUDENT'S PRIMER.—What place is this? This is the Pathological Society. How does one know it is the Pathological Society? You know it by the specimens and smells. What does that gentleman say? He says he has made a post-mortem. All the gentlemen make post-mortems. They would rather make a post-mortem than go to a party. What is that on the plate? That is a tumor. It is a very large tumor. It weighs one hundred and twelve pounds. The patient weighed eighty-eight pounds. Was the tumor removed from the patient? No, the patient was removed from the tumor. Did they save the patient? No, but they saved the tumor. What is this in the bottle? It is a tapeworm. It is three-quarters of a mile long. Is that much for a tapeworm? It is, indeed, much for a tapeworm, but not much for the Pathological Society.—*Medical Record*.

—The following rather good finish to a speech was made by a student at a social meeting, which was convened to show the regard in which the students held Dr. H. Chiari. "In many here will the unspoken wish arise, that, should fate lead any one of us to the marble table, it may be granted him to have the *post mortem* examination performed by Dr. Chiari's hand." This was not mere flattery: for his rapidity and dexterity in performing necropsies is something remarkable. Out of curiosity I timed several, and found the average for an examination—including brain, larynx, stomach, three or four feet of intestines, and bladder—to be seven minutes.—*Ex.*

—Nothing is worse than a vacillating physician, whom each notion, each wish of the patient, each suggestion of nurse or family affects. Blown hither and thither by every breath, incapable of taking a broad view of the case, his treatment soon

becomes as irresolute as himself, and directions and bottles accumulate with bewildering rapidity. The fewer drugs that are used the better; the greater the decision with which drugs are used the better.—*Da Costa*.

—M. Lecorche, in a communication to the Académie de Médecine, affirms that grave structural changes in the liver will arrest diabetes. Hepatic congestion is invariable, and later on, secondary structural changes occur. At the same meeting M. Magitot stated that diabetics are extremely liable to a jaw affection, which he names alveolar osteo-periostitis, which may begin with the onset of the disease and continue throughout it. This jaw trouble begins by a deviation of the teeth from the perpendicular, they then loosen and fall out. The alveolar borders are absorbed, sometimes after gangrene of the jaw, which latter symptom usually precedes death.—*American Jour. of Neurology*.

—Dumontpallier (Société de Biologie) asserted that he could make certain muscles contract in a patient in his service—when hypnotized and prepared for experiment by the application of a silver brass plate on the left side of the forehead—by simply looking at the muscle. The effect is due, he claims, to an “ocular influx.”

—A brother of Bishop Clark was one of the wittiest men alive. He once went to see one of his parishioners, a lady with a prodigious family, which had recently been increased. As he rose to leave, the lady stopped him with—“But you haven’t seen my last baby.” “No,” he quickly replied, “and I never expect to!” Then he fled.—*W. London Observer*.

—Messrs. Wood & Co. and Appleton & Co., of New York, Presley Blakiston & Co., and L. C. Lea’s Son & Co., have formed a combination to print medical books at the rate of ten cents each. This combination will be a fearful opposition to Bermingham & Co., engaged in the same business.