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CANADA

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MISSED ABORTION.

By T. JOHNSON ALLOWAY, M.D., L.R.C.S. & P., Edin.,
Consulting Physician Montreal Dispensary; Attending Physician Department for Diseases of Women, West-End Free Dispensary, Montreal.

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

Before I enter upon the material which explains my motive in bringing this paper before you, I think it would be well to explain definitely what is meant by the term *missed abortion*, and show by analogy how it is related to, and how it differs from, some other obstetric conditions. By missed abortion is understood an arrest of pregnancy in the early months of gestation. Abortion is threatened. The fœtus dies, but is not expelled as is usual in cases of abortion. Milk sometimes appears in the breasts. Hæmorrhage may occur from the uterus, or may not. If the ovuline membranes remain entire, the process undergone by the uterine contents is generally that of *mummification*—a peculiar form of decomposition, *but not putrefaction*. It is only when germs are admitted—and generally when rupture of the membranes and escape of the liquor amnii has taken place—that putrefaction and the more or less complete dissolution of the ovum ensue. In such cases we will observe that the woman, as she advances in the apparent condition of pregnancy, gradually gets smaller instead of larger. She may or may not have a dark, non-offensive, muddy discharge, which may be constant or intermittent in character. Her general health is not as good as usual; her digestive system is not working as it should; the

tongue is coated, and breath offensive. There is a heavy, dead weight feeling in the pelvic region, and at last expulsion of the uterine contents takes place unexpectedly. This expulsion occurs usually, though not invariably, before the expected full term of pregnancy would have been reached. The mass expelled represents the nearly dried, shrivelled fœtus rolled up in the membranes and placenta. It is of a dirty brown color, firm in consistence, and is in the so-called state of mummification. It may be asked, "What is this state?" In answer, we can only say that it is a state of decomposition wherein the fluids or juices of the embryo become absorbed after its death, and that the solids almost alone remain. There are several theories advanced regarding the agency at work in this process of absorption. The most reasonable, probably, is an augmented rapidity of endosmosis, due to a larger percentage of saline ingredients in the liquor amnii in the early and middle periods of gestation.

This mummified condition has often been observed in cases where death of fœtus has been due to a process of gradual inanition from inadequate blood supply; as, for instance, in the case of torsion or constriction of the umbilical cord. I do not know that we can correctly give a definite name to this particular form of decomposition. We are sure, however, that it is not a putrid change,—no atmospheric air has come in contact with it; it is non-septic and harmless. Mummification often occurs in twin pregnancies—one fœtus dying, the other going on to full term, when both are generally expelled together. To enter into the cause of death of the fœtus in these cases would be a digression. I will, however, say that we find in many cases there is a marked adhesion between the placenta and the uterine walls, which may also play some part in determining a short or long term of retention. When a mummified fœtus has been subjected to much intra-uterine compression, the term "*Papyracious*" is applied to it. Another form of decomposition which the dead fœtus in utero will undergo is known by the term *Maceration*. Here a granular degeneration and dissolution of the anatomical elements are everywhere evident. A fœtus of one or two months may become completely dissolved away,

nothing whatever remaining. Instead, however, of a process of *desiccation*, as in mummification, we have here one of *increase of moisture*, or true *post-mortem* œdema and hydrops. The œdema is most apparent over the cranium, hands, feet, abdomen, and sternum. The cranial sutures are separated, the joints are disarticulated, and the periosteum has become detached from the long bones. The vessels are filled with dark blood. The serous cavities are distended with bloody serum. The brain is a greyish pulp. Fat crystals are found in the tissues. The accumulation of fat is sometimes so abundant that the term *fatty degeneration* is often applicable to this condition. In reference to embryos which dissolve in the ovum-sac *outside of the uterus* in a few hours, I would say that the fact bears no relation whatever to the subject of missed abortion. That the condition is simply the result of putrid decomposition attacking an embryo which had just ended its physiological state, and was suspended in an albuminous fluid exposed to atmospheric air; and that it is identical with that condition met in the egg of the common fowl after a like long exposure, and which, in common parlance, we are wont to call a "rotten egg."

A condition allied to missed abortion, but differing from it in some respects, is one called MISSED LABOR. It resembles it because there is an arrest of pregnancy (death of the fœtus). But instead of this arrest occurring in the early months, it occurs at, or close to, the normal time of expected delivery. The uterus makes an effort at expelling its contents, but fails; probably the amniotic fluid escapes, and the uterus carries the dead fœtus past the normal term of gestation to a period varying from a few weeks to months, or even years, if the patient survive so long.

Another condition remotely allied to the subject I might here mention in a passing way is that of PROTRACTED PREGNANCY, by which we mean pregnancy *without* interruption is carried beyond the normal period of gestation. Many authorities do not believe in the existence of such a condition. Dr. Matthews Duncan, however, gives an interesting case of protracted pregnancy and missed labor occurring in the same patient and from

the same conception. The patient was the subject of extreme anteversion of the uterus, which could not be replaced. She last menstruated on 12th December. Her confinement was expected on 17th September. The motion of child ceased Sept. 26th. On October 17th she had a chill and became feverish, without indications of labor commencing. She was artificially delivered on the 18th of October. The child was enormous. The mother died on October 24th. Here we have the fœtus surviving in utero the normal term of gestation by nine days. Twenty-one days after its death evidence of septic absorption became apparent, and the woman was artificially delivered on the following day.

As regards the pathological bearing in the history of these cases of interrupted pregnancies, I cannot do any better than quote from Scanzoni, when that writer speaks of the various forms of apoplexy of the ovum, causing not only death of the embryo and abortion, but also of the formation of so-called *true moles* when abortion does not take place. It is hardly necessary to say here that Scanzoni's true mole is simply a *product* of missed abortion. He says :—

1. When the flow of blood from the utero-decidual or utero-placental vessels is inconsiderable, it does not separate the ovum in the greater part of its circumference, or by mechanical pressure arrest its further development, so that the blood effused may be either completely or partially reabsorbed and the pregnancy go on undisturbed.

2. But if the quantity of blood effused is considerable, the ovum is separated either completely or in great part, and is compressed by the voluminous coagulum ; rupture of the membranes ensue, and abortion is the result.

3. The ovum may remain with the dead fœtus for a considerable time in the uterine cavity ; the coagulum undergoes certain changes, which are also observable in extravasations in other parts of the body, and gives origin to the so-called flesh-mole. The effused blood (utero-decidual) becomes decolorized by rupture of the blood corpuscles and absorption of their coloring matter. The fibrine, Scanzoni supposes, becomes cellular tissue,

and in this way is established a communication between the ovum and the uterine wall, which renders further development possible. The chief seat of this carneous degeneration is the decidua-vera. The amnion undergoes little change, and may be found adhering to the inner surface of the chorion, containing within its cavity a quantity of bloody fluid, and in which will be found what remains of the embryo.

As regards the etiology of this strange obstetric condition, it can be summed up in the following: Syphilis, nervous shock of any kind, direct injury, twin pregnancies, endometritis, metritis, fevers, etc. The syphilitic poison interfering with normal nutrition in the parts concerned in gestation, as it does in other parts of the body, induces local retrograde tissue change (increased cell growth) which is inconsistent with the growth and life of the fœtus. Nervous shock and direct injury act by causing an extravasation of blood between the fœtal and maternal parts, and bring about death of the fœtus by a starvation process. This starvation process may also play some part in interrupted pregnancies occurring in very anæmic young women.

Now, gentlemen, that we understand what this obstetric condition—the subject of my paper—really is, and how it bears towards other conditions of a like nature, we will be able to form an idea of how very important it will be to diagnose correctly when placed in a position in which an error in our judgment may not only compromise our own professional reputation, but may interfere with the happy career of two innocent lives. In a case of this nature, the history of the patient and her size may have led either to no suspicion of pregnancy having commenced, or to those which may have been dissipated by the further history of the case. The important elements of suspicion may not have become apparent to the patient herself or to the physician. Here an error is extremely liable to occur, and that it has occurred and is liable to occur again I will show further on by relating a case in point.

I will first, however, bring to your recollection the occasion of my exhibiting before this Society last January a specimen of the so-called mummified fœtus or flesh-mole, supposed to have

been blighted at or near the eighth week, and that this specimen was accompanied by a placental mass, in which this fœtus was found enclosed at the time of its expulsion. The fœtus was one inch long, was perfect in all its parts, was firm in texture, and advancing to a dry state. The placenta was of the size of a normal placenta at about the fourth or fifth month. Its gross appearance showed advanced fatty and fibroid degeneration. Its fœtal surface was lined by chorion and amnion membrane. It had a large amniotic cavity filled to distension with dark coagulated blood, and containing within this cavity the fœtus before-mentioned. From the history of the case which I gave at the time, it will be remembered that the patient—a young married woman, who had already borne three children at full term—ceased to menstruate early in January, and had a sudden hæmorrhage in March on the occasion of a severe fright. That this hæmorrhage gradually ceased, and that—with the exception of a dark, non-offensive, intermittent discharge, accompanied by general bad health and reduction in abdominal size—nothing left the uterus until December following, when the fœtus and mass exhibited were expelled, as I have explained. At the meeting in question of this Society, I maintained that pregnancy took place in January and ceased in March at the occurrence of the hæmorrhage; that the hæmorrhage was sufficient to cause death of the fœtus, but not of complete separation of the decidua and abortion; that the fœtus was retained in the unbroken amniotic sac, and that the placenta underwent retrograde change and increase in size; that expulsion of the uterine contents did not take place until December following, or *about eleven months of uninterrupted retention;* and that uterine contraction was then probably excited by a flow of blood into the amniotic sac, which was found filled with a dark coagulum.

During the discussion which followed in connection with this case, some of my brother members took issue with me on one or two important points. And as I considered these points to be worthy of some special notice in regard to their medico-legal bearing, I have not lost an opportunity wherein I could obtain material to throw more light upon the subject. In doing so I

have been anxious to frame my actions in as neutral a way as possible, my only endeavor being to prove whether I was correct in advancing the views I did at that meeting, namely, *that it was possible for a woman, in whom pregnancy had ceased at or near the second month of gestation, to carry the dead fœtus and decidual mass in her womb for the remainder of the* 278 *days or more, without creating any further disturbance than my patient had suffered from.* In rebuttal of this statement, it was held—"That all such embryos were dissolved in utero. That if there was any separation from the uterine wall, then the embryo was rapidly dissolved. It was not believed that the specimen I had exhibited had been in the uterus anything like the length of time I had estimated. That my patient might have had one or more miscarriages in the interim, and that from the size of the specimen it was not thought to be more than five or six weeks in the uterus." *

This, gentlemen, was the condition in which the subject was dropped at the conclusion of the meeting. And the condition was so unsatisfactory to me, inasmuch that my own convictions in the case so far outweighed the doubts thrown upon them by my friends, that I felt it necessary to interest myself in obtaining further proof in the form of history of similar cases, and present them to you as a continuation of my reply. The first case I will relate is from the pen of Dr. Matthews Duncan. It is almost identical with my own case. It differs in one respect, namely, the sound was passed for diagnostic purposes at the seventh month, and uterine action was prematurely induced.

S. K., aged 31, married eight years; has had four children; no miscarriages. Had not menstruated for five months, when a bloody discharge began. After this had continued for three weeks she became an out-patient to the hospital. An examination now discovered a dilated heart with a mitral regurgitant murmur. There was dulness above the pubes for an inch, but nothing abnormal could be felt. Digital examination per vaginam discovered the brim of the pelvis occupied by a hard mass,

* *Can. Med. & Surg. Journal*, Feb., 1884, page 430.

with which the cervix is connected by continuity. The uterine probe was passed 3½ inches. About six hours after the use of the probe, pains began. After about eight hours of pains, a mass the size of an orange was expelled. Very little hæmorrhage followed birth of the mass. Patient rapidly recovered. The mass was found to consist of the entire ovum in a state of decomposition, except the liquor amnii, of which there was not a trace. The whole was a dirty-brown mass. The decidua and other membranes were rolled tightly round the fœtus. The fœtus was of the size of one of about two months growth. Beneath the chorion were several blood-clots of extravasation in various stages of decolorization. Dr. Duncan continues to remark that this is as fine a case of missed abortion as you could wish to see. *The length of retention after the death of the fœtus is five months.* Observe here that the membranes were entire; therefore, there was no putrefaction. The whole ovum was in a state of decomposition. Dead children, dead abortions in various stages of decomposition, are quite common; but putrid fœtus, or putrid abortion, is quite a rarity.*

The next case† consists of a specimen of a blighted ovum retained for a period of *twelve months* from commencement of pregnancy. The embryo perished at end of fourth month. Dr. West thought the case interesting, to show how we can err in such matters. The patient persisted she was pregnant, and the physician as strongly persisted *she was not*, that she was not only mistaken, but altogether so. The ultimate expulsion of the mass explained everything.

The next case‡ is related by Dr. Graily Hewitt, who exhibited a specimen of abortion with retention of fœtus and growth of decidua for *five months* after death of fœtus. The decidua was greatly thickened, the fœtus shrivelled up and having the size of a horse bean. The history of the case showed fœtus had ceased to live about third month of pregnancy, and was expelled *six months afterwards—i.e., at full term.* During all of this

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* *Medical Times & Gazette*, vol. ii, page 729, 1878.
† *Medical Times & Gazette*, vol. i, page 176, 1862.
‡ *Medical Times and Gazette*, vol. ii, page 621, 1861.

time there had been a dark fluid discharge occasionally passing which had been taken for menstrual discharge by the patient.

The next case was that of Prof. Dupaul,* who presented before the Academy of Medicine a specimen of a fœtus which was expelled after a pregnancy that had lasted between *ten and eleven months*. A young woman, who had already borne a child, ceased menstruating after Sept. 8th, and was delivered Aug. 14th of a child which had died at fifth month, and was expelled without the membranes having been ruptured, and exhibiting no signs of putrefaction. It is the first time that a pregnancy has occurred in Prof. Dupaul's practice which has been prolonged between ten and eleven months, the fœtus not being expelled for from five to six months after its death. This case, he observed, was only one to be added to many others proving that a fœtus, dead in utero, may sojourn therein for several months—providing that the membranes remained intact—without any injury to the mother. The fœtus on this occasion did not exhale the slightest smell of putrefaction, although it had remained in contact with air and water during 24 hours.

At a meeting of the Obstetrical Society of New York,† Dr. Watts exhibited a specimen with the following history: A lady, supposing herself to be six months pregnant consulted him. She menstruated last in the early part of July, followed by nausea and other signs of pregnancy. At a time when she considered herself two months pregnant she was out driving and met with an accident, injuring her abdomen on being thrown out of the carriage. Time went on without any unusual symptoms, and she now wished to know if she was pregnant. After an examination, he advised her to keep quiet. On January 7th she was suddenly taken with pains, and in two hours was delivered of the fœtus presented. Dr. Watts thought the fœtus was dead in the uterus for *four months*, and that it ceased to live at the second month.

At the Obstetrical Society, London, Dr. Edis exhibited a specimen of a shrivelled mummified fœtus and membranes. He

* *Medical Times & Gazette*, vol. ii, page 283, 1881.
† *American Journal Obstetrics*, vol xiv, page 881, 1881.

said one fœtus was born alive in the seventh month of pregnancy. The other, as exhibited, apparently died in utero about two months previously.

Dr. Malins spoke of a case in which one fœtus had been born alive at the eighth month; the growth of the other, expelled at same time, having been arrested at the fourth month. Cruveillier had illustrated the same condition. Such cases showed the power of toleration of the uterus, and were also interesting in their medico-legal aspect.

Dr. Henry Fruitnight of New York relates a very instructive case* in which a lady consulted him. In the latter part of April 1883, she menstruated for the last time. She soon developed the usual signs of pregnancy. She had already borne children. In August she received a severe fright, and in a day or two afterwards perceived a slight flow of blood from the vagina, unaccompanied with pain. The bleeding was intermittent in character for some time. Dr. Fruitnight made a digital examination in September, and diagnosed *partial separation of the placenta from the uterine wall*, and hæmorrhage as a result both into the placenta and externally. She was seen again in November, when she doubted she was pregnant at all. But she was delivered of a fœtus of about the third month gestation a few days afterwards. The form of the fœtus was flattened. It was friable. Its color was dark brown, and it was leathery and wrinkled, hence called a mummified fœtus. No evidence of putrefaction was apparent. The placenta was very hard, tough and yellowish. It showed traces of fatty and fibroid degenerations.

Dr. E. W. Knepper of Indiana relates a case† of twin pregnancy as follows: At the third month of gestation, after a carriage ride, hæmorrhage appeared, but after some rest, it ceased, and did not return until time of labor setting in at about the seventh month. A mummified fœtus of third month was now removed, and shortly afterwards a seven months child was delivered alive, which lived for several hours. In this case there was but one placenta for both living and dead fœtus, which is

* *American Journal Obstetrics*, page 50, 1884.
† *American Journal Obstetrics*, page 592, 1884.

unusual. There was no evidence of putrefaction, and this fœtus must have been in the uterus *four months* after it ceased to live.

Dr. H. J. Garrigues of New York relates a case* of a woman 30 years of age, married ten years, in her sixth pregnancy, and having had daily hæmorrhages for the past four weeks. No sounds were audible. Pregnancy with dead fœtus was diagnosticated. About a week later the bleeding ceased, and the patient felt well. About *nine months* after last menstruation, a fœtus and placenta, in one mass, were expelled; they were perfectly fresh. The fœtus seemed to be at the end of fourth month, with partial arrest of development. Had hare-lip and cleft palate. The soft parts were much atrophied.

To make the subject fairly complete, I suppose I should say a few words about the best procedure to follow in the treatment of missed abortion. Generally speaking, we should abstain from interference until one of two accidents take place—*severe hæmorrhage* or symptoms of *septic infection*. In the case of severe hæmorrhage, we should wait long enough only to allow the patient to recover reaction from the loss of blood under the well applied vaginal tampon. Then clean out the uterus thoroughly, if sufficiently dilated; if not, insert a tupelo tent for two or three hours and then operate.

The cases where sudden chills and elevations of temperature set in, with rapid pulse, every moment's delay is so much loss to the patient's chances of recovery and to our reputation. Pass in as large a tupelo tent as possible, remove it in a few hours, and thoroughly curette the uterus with the dull curette until every vestige of decomposed decidua has been removed. Then wash out the uterus with at least a quart of warm sublimate solution (1–2000), using a fountain syringe and tube having a return-stream. In regard to this procedure, the adage, "The man who hesitates is lost," was never more aptly applied than in this instance.

I am here tempted to give two cases which occurred to me some short time since, illustrative of one each of these very accidents. A woman, who had borne many children, but had

* *American Journal Obstetrics*, page 963, 1884.

never miscarried, had suffered for some months from the symptoms of an interrupted pregnancy. When I saw her she was in a state of syncope. The bedclothes and floor were saturated with blood—blood, in fact, was apparent everywhere. I hastily plugged the vagina with discs of cotton-wool saturated in a solution of alum; then administered as rapidly as possible several hypodermics of brandy. I placed her body over the end of the sofa, with her head and shoulders downwards. She very soon began to recover consciousness and pulse beat. I then administered hypodermics of fluid extract of ergot, and left her. Returned some hours later, and found she had not recovered sufficiently to interfere. No more bleeding. Was shown a mumified fœtus of about twelve weeks' maturity, but could not find the placenta amongst the blood-clot debris. I left her again until next morning, when I removed the vaginal tampon. There was no more bleeding; the uterus was quite small, the os closed, and I concluded the secundines had escaped with the fœtus. This woman did not recover the blood loss until after two months' confinement to bed.

The septic case occurred in a young married woman who had borne three full-term children, but had had several miscarriages within the last few years, in two of which I had emptied the uterus with the dull curette. On this occasion, after the first hæmorrhage, which occurred at third month, she expressed a wish to remain in bed until she had passed a certain time, which would tide her over the first half of pregnancy, and in this way she hoped to save her child and carry it to full term. So long as she remained quietly in bed the hæmorrhage would disappear, but on rising, even for a few hours, it would reappear. She continued this rest treatment for over two months, and as she noticed she was growing smaller instead of larger, she concluded the child was dead, and the sooner she got rid of it the better. In making an examination at this time, I found the internal os completely close to the finger. I told the patient that as there was no part of the uterine contents presenting, and no urgent symptoms requiring interference, I would wait until uterine action set in of its own accord. In about two weeks after this

I found the patient suffering from a severe attack of septic infection. I at once, through a Sims' speculum, passed into the uterus a large sized tupelo-tent; returned in three hours and withdrew tent, which was quickly followed by the escape of a mummified fœtus. There was little hæmorrhage. I began immediately with the curette and removed a very large decidual mass; so great was the extent of adhesion between it and the uterine walls that I had to remove it in many pieces, but never left her until I was perfectly sure not a vestige or shred remained in the uterus. I washed out the cavity with sublimate solution. She made a good recovery.

I could go on, gentlemen, adding case upon case relating to this subject had I the time to make a more extensive search in the medical literature of countries other than those in which I have; but I think it would be more likely to tire than add strength to your convictions of the truths I have advanced. And to bring the question a little nearer home to each of our individual selves, suppose, in a certain case, similar to the one connected with the specimen I exhibited to this Society, and to many of those I have to-night related to you, a woman missed two menstrual periods, and had a discharge of blood shortly afterwards, which was mistaken for the return of menstruation. The husband of this woman leaves home during this supposed menstrual flow, and does not return until the expiration of six months. Then shortly after his return his wife gives birth—so he is informed by his physician—to a two months baby. Imagine the physician's surprise when he is informed by the astonished husband that "that could not be, else the child is not his, he having been away from home during the last six months." The physician tries to explain, but has to admit that, from his experience and views on the subject of abortion, the said child could not have been more than eight weeks in the uterus, *because* "*if any separation had taken place from the uterine wall, then the embryo was rapidly dissolved.*" And upon this very unfortunate assertion alone, we can easily imagine how a painful case of litigation could ensue.

DIGITALIS.*

By JAMES STEWART, M.D.,

Professor of Materia Medica and Therapeutics, McGill University; Physician to the Montreal Dispensary, and Director of the University Dispensary for Diseases of the Nervous System.

GENTLEMEN,—The leaves of the digitalis plant contain three glucosides, each of which possesses active cardiac physiological actions. These are digitalin, digitaleïn and digitoxin.

In addition there is a fourth glucoside called digitonin destitute of any cardiac properties, but having an action very similar to saponin, the active principle of senega root. Digitalis leaves also contain a resin which closely resembles picrotoxin in its actions.

The active principles commonly known as Quévenne's and Nativelle's digitaline have been proved to be mixtures of the various glucosides above mentioned. None of the glucosides possess any advantage over a preparation of the leaves, and owing to the great difficulty in isolating them it is always preferable to use a tincture or infusion of the leaves.

Pharmacology.—There is no medicinal agent whose physiological actions it is more important that you should thoroughly understand than digitalis, for when used in proper cases and in proper doses it is capable of accomplishing a great deal of good. Although not, except in very exceptional cases, a curative agent† in the narrowest sense of that term, it is capable in many cases of not only giving great relief, but of prolonging life, frequently for very many months, and at times even for many years. The good that is obtained by mercury in syphilis, by salicylic acid in acute rheumatism, by quinine in malarial fevers is no more striking than the action which digitalis possesses in steadying and contracting an irregular and dilated heart.

Digitalis preparations have a disagreeable bitter taste, and when taken in large medicinal doses may give rise to nausea and vomiting and even to purging. The last effect, however, is very unusual.

*Lecture delivered before the Materia Medica class, November, 1884.

†In cases of acute dilatation of the heart occurring as the result of anæmia it is a directly curative agent.

The active constituents diffuse readily into the blood, but what if any influence they exert on it is not known.

Action on the Circulation.—The effect of small medicinal doses (10 minims of the tincture every twelve hours) of digitalis is to make the heart beat with an increased vigour. The left ventricle especially beats more powerfully. Coupled with this increased vigour of the heart's contractions, there is a slight rise in the blood pressure, which has the direct effect of sending more blood to the ventricles and the indirect effect of further stimulating them in their contractions. If larger medicinal doses are administered, we have in addition to an increase in the effects already described, a slowing of the heart. The ventricles now beat not only more vigorously, but also slower. This slowing from full medicinal doses may amount to forty or even fifty beats per minute, but it is only in cases of cardiac failure that such a marked reduction takes place, and then only when the patient is confined to bed. Slight exercise readily quickens the pulse reduced by digitalis. That digitalis can slow the movements of a healthy heart to a considerable extent there is no doubt, but just to what extent it can do this, short of too high doses, I am not able to tell you. Some people's pulses are much easier reduced than those of others. The pulse of the feeble is much more easily reduced than the pulse of the robust. It has very little power in reducing the pulse of fever. If the temperature is high it practically may be said to have no influence at all. The reason of this will be referred to presently, when I come to discuss through what mechanisms it produces its different effects on the circulation. If the dose of digitalis be still increased, the vigour of the contractions becomes still greater and the slowing more decided until finally the ventricles come to a standstill in contraction.

A state of tetanus of the cardiac muscle is induced; this is quite different from the effects of aconite which also slows the heart, and finally brings it to a standstill in dilatation. No better method can be employed to demonstrate the action of digitalis on the heart than to take a frog and bring its heart to a standstill in dilatation by injecting aconite. When this has

happened, if we inject digitalis the distended ventricle slowly recovers itself, and soon returns to its normal condition. If we still continue injecting digitalis the systole becomes longer and the diastole less complete, especially at the apex which remains white and firmly contracted. This gradually extends over the whole ventricle, the heart finally comes to a standstill in firm contraction.

When either digitalis or aconite are given in such doses as to produce standstill of the heart, the pulse becomes quick and the blood pressure falls.

"In aconite poisoning the aortic pressure falls because the over distended ventricle is unable to contract upon its contents. Each contraction only sends a small quantity of blood from the upper portion of the ventricle. In digitalis poisoning the aortic pressure falls, because the over-contracted ventricle permits but little blood to get into it and can consequently send but little forward. The result is similar in both cases, but the cause in one case is just the reverse of that in the other."—Balfour.

The action of digitalis on the circulation in full medicinal doses may be summarized as follows:—

1. It makes the ventricles beat more powerfully.
2. It makes them beat slower.
3. It contracts the arterioles.
4. It raises the blood pressure.

These effects take place even after the vagi are divided and the spinal cord destroyed. It therefore follows that they are due (necessarily for the most part) to a direct action on the structures of the heart itself and on the vessels. This is further confirmed by the fact that when digitalis is directly applied to the isolated frog's heart it slows and renders its movements more powerful.

The increased vigour of the contraction is due to a stimulation of the intra-cardiac motor ganglia, while the slowing is principally brought about by stimulation of the peripheral terminations of the vagus in the heart. Digitalis also has a stimulating action on the vagus centre in the medulla.

Dr. Lauder Brunton has quite recently shown that the reason

the pulse of fever is not slowed by this drug is that the increased temperature has a paralyzing effect on the inhibitory influence of the vagus on the heart. The cause of the contractions of the arterioles has been a very much disputed point, and even yet it is not definitely settled. Some maintain that it is owing to stimulation of the central vaso-motor centre or centres, while others ascribe it wholly to a stimulation of the vaso-motor fibres in the blood vessels. That the latter is a factor in the production of the contraction there appears to be no doubt, but that the former is the principal agent in the causation seems very probable.

It follows as a result of the increased contractions and the marked resistance to the blood stream by the contracted arterioles, that the aortic pressure is increased.

The quickening of the pulse brought about by poisonous doses of digitalis is due to paralysis of the inhibitory fibres of the vagus and the final fall in the blood pressure is due to the arteries being imperfectly filled, owing to the contracted state of the heart allowing but little blood to get into it.

Action on the Temperature.—It is generally admitted that digitalis has some influence in reducing a febrile temperature. It has been experimentally shown by Ackermann, that after it raises the pressure in the arteries, it lowers the temperature in the vena cava, and at the same time raises the temperature of the external parts. It diminishes the internal temperature, and increases the external or surface temperature. It is only antipyretic from its action on the circulation. It is not antipyretic in the same sense that quinine and salicylic acid are antipyretics.

Action on the Nervous System.—Any effect produced by digitalis on the nervous system is indirectly brought about by its influence on the circulation. From full medicinal doses it is not uncommon to hear patients complain of headache, a band like feeling around the forehead, dizziness and also of colored vision, together with a sense of faintness, nausea or even actual sickness.

Action on the Secretion of Urine.—Digitalis has very little influence in increasing the quantity of urine in health, but in

cardiac disease attended with dropsy, where there is a diminished outflow owing to the failing heart, it then acts powerfully as a diuretic. The diuretic power is solely due to its influence on the blood pressure. In order to bring about the full diuretic effects of digitalis it is necessary to give it in full doses. The effect of small and even of moderate doses is to increase the general blood pressure, including the pressure in the arterioles of the kidneys. While the general pressure is increased the quantity of urine is not increased. After, however, a certain quantity of digitalis has been introduced into the blood, the pressure in the arterioles of the kidneys gives away with the result of a rapid and great increase in the quantity of urine. This may last for several days, depending on the amount administered. If the drug is still continued, the fall in pressure which commenced in the arterioles of the kidney, extends throughout the whole arterial system with the result of a marked decrease in the secretion of urine.

It follows from this that there are three stages in the action of digitalis on the arterioles of the kidneys, and each separate action is attended by a difference in the amount of urine secreted.

1. From the action of small doses (tonic) we have a general increase of the arterial pressure. This stage is not attended by an increase in the quantity of urine.

2. From the effects of large medicinal doses when continued for two or three days, we have a fall in the arterial pressure in the kidneys, while the increased pressure throughout the rest of the arterial system remains. The result of this action is a great increase in the quantity of urine.

3. When the drug is pushed until the fall in the arterial pressure which commenced in the kidney arterioles has extended so to take in the whole of the arterial system, there is a marked decrease in the quantity of urine.

Uses.—The great use of digitalis is in cases of heart failure, especially in cases of heart failure occurring as the result of organic changes in the valves of the heart. It is also useful before actual or pronounced failure has set in. If given in proper doses it is able to delay, often for a long period, the appearance of failure.

It makes but little difference what particular orifice may be narrowed or leaking, whether it is the mitral or aortic, digitalis is indicated. It certainly is more effecacious in some conditions than others, but in a general way the truth of the statement that it is indicated in all forms of heart failure is practically correct.

To have clear ideas as to what digitalis can do in restoring a failing heart it is necessary that you should understand what cardiac failure means, and how it is brought about as the result of a valvular lesion.

I have here the heart of a man, who died a few days ago from the effects produced by incompetence of his aortic valves. Through the kindness of Dr. R. L. Macdonnell he has been under my care at the University Dispensary for the diseases of the nervous system for the past seven months. During this time I had repeated opportunities of observing the marked relief that he obtained from digitalis. I will first point out the differences between this heart and a normal heart, and afterwards show how these differences came about, and finally I will refer to the influence digitalis has in preventing and relieving such changes, and what particular influence it had in relieving the symptoms and delaying the end of the case under consideration. By adopting this method I think I can make the actions and uses of digitalis plain to you.

The man at the time of his death was 35 years of age. Since his fifteenth year he had five distinct attacks of acute rheumatism. He distinctly remembers that his "heart was affected" during the first seizure, but it never gave him any trouble until four years ago. This was shortly after his fifth and last attack. We have here a period of twenty years during which he undoubtedly had a heart lesion, but it is only during the past four years that he suffered from the effects of this lesion. The compensation during the first sixteen years of the life of the diseased heart was so perfect that it gave rise to no marked symptoms. Four years ago, however, this compensation began to fail, and we have from this time onwards a history of all that results from such failure.

You see that the aortic valves are badly deformed and their surfaces studded with a great number of vegetations.* You can readily understand how incompetent these valves were during life to fulfill their functions of closing the aortic orifice. On further examining the heart we find it greatly enlarged, and that this enlargement is due for the most part to hypertrophy of the muscular fibres of the left ventricle. In addition to an increase in the thickness of the ventricular walls, we have also a great increase in the size of its cavity. The left ventricle is both hypertrophied and dilated. For our purposes there is no need of noticing any further changes, with the exception of dilatation of the mitral valve, present in this heart. I will now endeavour to explain how these different pathological conditions were induced.

The thickening, the vegetations and the deformity of the aortic valves were caused by rheumatic inflammation of their structures during the first and probably also during the subsequent attacks of acute rheumatism. As a result of the incompetency of the valves, the left ventricle received during its dilatation blood from two sources, in place of from one—from the aorta as well as from the left auricle. The result was an over-filling of the ventricle. The immediate result of the over filling was dilatation of the ventricular cavity. This dilatation, however, could only for a very short time relieve the altered conditions. If it were all that had taken place the man would not have lived at the longest more than a few weeks. What did take place was an hypertrophy of the muscular fibres of the left ventricle, and it was this increased power of the ventricular muscle that enabled the circulation to be carried on in spite of the leaking valves. The causes of the three prominent changes in the heart are plain. They may be thus summarized: 1st. The valvular distortion, &c., is the the result of the rheumatic inflammation of the endocardium. 2nd. The dilatation of the ventricle is owing to it receiving an undue supply of blood into its cavity. 3rd. The hypertrophy is the result of

*About a year ago he was suddenly seized with left hemiplegia, due as was proved at the post-mortem by Dr. Sutherland to plugging of his right middle cerebral artery by an embolus carried from his warty aortic valves.

the increased efforts made by the heart to overcome the dilating powers of the column of blood. We have finally to enquire, what brought about the cardiac failure in this heart? Why did the hypertrophied ventricle fail at last to propel the blood forward? In all cases like the one we are considering there arrives a time when the heart is no longer able to do its work. A very frequent reason of this failure is a degeneration of the muscular structure as a result of the long continued over-work, or it may be brought about acutely as the result of a severe illness, especially when attended by a high temperature. In the heart before us, the prominent factor in bringing about failure was not degeneration of its muscular structure, for on closely examining it you will find its walls firm, and not, at least to the naked eye, the seat of advanced fatty degeneration. The main factor in the production of the failure was a purely physical one. In cases of aortic incompetency dilatation is ever slightly in advance of hypertrophy. Compensation is never so perfect that a little blood does not regurgitate, and as there is necessarily a limit to hypertrophy, so there necessarily arrives a time when further hypertrophy is not possible. The result is that heart failure sets in. There are two periods in the life history of a diseased heart such as this where digitalis would be useful. The same is true of any valvular lesion, but it is especially true of mitral valve lesions.

Digitalis is useful during the period of compensation, but it is especially useful after compensation has failed. It is very exceptional to find a case of any valvular lesion where the compensation is so perfect that it would not be benefited by digitalis. During the compensation period it should be given only in tonic doses, that is in quantities just sufficient to slightly increase the vigour of the ventricular contractions, but not large enough to slow the pulse. Given in tonic doses it aids the ventricle in better overcoming the ever acting dilating force of the column of blood. It therefore delays the inevitable cardiac failure.

The other period where digitalis is of use, is when compensation fails—when cardiac failure has set in. The contractile

power of the heart is diminished, and when extreme only the upper portion of the ventricle empties itself, just barely enough blood is poured out to sustain life.

The first effect of heart failure is diminution in the aortic pressure, and this at once shows itself in diminution in the amount of urine excreted.

When compensation fails it may be restored by the judicious use of digitalis so completely that it will last for several years.

In cases of aortic incompetency, what we want to produce when compensation fails or is about failing, is sufficient contraction of the ventricle to overcome the dilating powers of the column of blood, and this we can accomplish if the case is not too far advanced. To effect this, however, it is necessary to give the drug in what is called cumulative doses. By this is meant the administration of a second dose before the effects of the first have passed away, and continuing the administration in this way until certain definite effects are brought about. Nothing but the greatest good can arise from the use of digitalis in such quantities, provided its actions are closely watched, and its administration suspended when the symptoms presently to be described make their appearance.

Many practitioners dread giving digitalis in full medicinal doses. The idea is not uncommon, that it may act in an explosive sort of way and bring about that which it is intended to combat. Now, there is nothing whatever of the mysterious in its actions. When given in a scientific manner its actions can be foretold with a certainty, not excelled by that of any medicinal agent. If there are some practicioners who have a dread of this drug, there are on the other hand others who have not a sufficient fear of it. Any one who has witnessed the reckless way in which it is sometimes given to advanced cardiac cases, must be convinced that not all cases of cardiac diseases die from the effects of their disease, but that some deaths are indirectly, if not directly, due to the too lavish or too long continued use of this agent. The mistakes of the unscientific physician are hidden even from himself in these cases.

So long as digitalis increases the quantity of urine it is quite

safe to proceed with its administration, but when the amount commences rapidly to diminish then it is a sign that the increased blood pressure is giving place to a diminished pressure and that the saturation point has been reached. If in spite of this warning the drug be continued, the quantity of urine will still continue to decrease, until finally it becomes almost completely arrested. The pulse from being slow becomes weak, frequent and irregular, and the heart sounds are reduced to a "toneless tic-tac." When the condition of things just described has been reached, you can readily understand that a few more doses are all that is necessary to bring the heart to a standstill.

Digitalis should never be pushed to the extent of quickening the pulse after it has considerably slowed it. A preternatural slowing of the pulse should be as much a warning of saturation as the diminished quantity of urine. The occurrence of nausea or vomiting after the physiological effects are induced should also be taken as a symptom denoting that the safe saturation dose has been reached.

A diminution in the quantity of urine excreted, an unusual slowing of the pulse and the occurrence of nausea or vomiting, are then the symptoms that indicate that the point has been reached, past which it is not safe to go. Up to the production of these symptoms, nothing but good is obtainable. The first symptom usually of saturation is the slowing of the pulse, and it may be even twenty-four or forty-eight hours after the drug is stopped before its diuretic effects are manifested. It may take four or even five days to bring this about. It is, however, more common to find that the urine commences to increase in quantity during the third day. The duration of the diuresis depends solely on the dose.

The changes for the better that are effected by digitalis in persons with irretrievably damaged hearts is very striking. The urine from being scanty and high coloured becomes copious and pale. The dropsy disappears. The breathing becomes easier. The pulse from being weak, frequent and irregular becomes strong, slow and regular. These marked results are, however, only obtainable from the use of cumulative doses.

Now as to the quantity of digitalis necessary to bring about saturation. You should always remember that different persons vary considerably in their susceptibility to its action. Forty minims four times daily for a period of three days will, in the majority of cases of heart failure from valvular disease in adults bring about one or more of the saturation symptoms. That is, a quantity slightly short of an ounce of the tincture will, in divided doses, bring about saturation in three days. In exceptional cases it is necessary to give even larger doses before the desired result is obtainable. One drachm of the tincture four or even six times in the twenty-four hours may be necessary.

Tonic doses should, on the other hand, not exceed twenty minims of the tincture in the twenty-four hours. When these quantities are given the only noticeable effect is a slight increase in the vigour of the heart's contractions together with an appreciable rise in the aortic pressure.

I will now give a brief account of what digitalis did for the man whose heart you have been examining. When he came under observation seven months ago he was suffering from the symptoms of pronounced heart failure. He was dropsical, short of breath and passed but a small quantity of urine. His pulse was very rapid and low in tension. He was troubled with a profuse serous diarrhœa, and his stomach was in a catarrhal condition. Without confinement to bed, twenty minims of the tincture of digitalis four times daily for four days, caused a marked increase in the secretion of urine, with the subsequent disappearance of the dropsy. He was able to breath much easier. His diarrhœa was arrested and his appetite greatly improved. He expressed himself as feeling greatly relieved, and compared to his former distressing condition he was comfortable. He continued in this amended condition for four or five weeks, all the while taking digitalis but only in tonic doses. The ever progressive heart failure even in spite of the support from the digitalis, shewed itself again, but on this occasion in a much more pronounced form. As before it was attended by the usual symptoms, but on this occasion they were present in an aggravated degree. They indicated such a very serious rupture of

the compensation that death appeared to be imminent. Rest in the recumbent position, and the tincture of digitalis in doses of two drachms daily for four days made another marvellous change for the better in his condition. The dropsy again rapidly diminished, but never entirely disappeared. His breathing became much easier and his pulse fuller. So much did he improve that he was once more able to go about. The improvement did not on this occasion last more than two weeks. Once more all the symptoms of advanced cardiac failure made their appearance. He was now removed to the General Hospital, where he remained until his death, which occurred a few days after his admission. The immediate cause of death was an "infective" endocarditis. Even after his admission into the hospital he experienced relief from digitalis, ordered him by Dr. Ross, the attending physician.

I think I have laid before you evidence enough to prove the inestimable value of digitalis in cardiac therapentics. It is not alone the power it has of prolonging life that should make us prize it highly, but also its marked efficacy in relieving some of the most distressing symptoms that can afflict humanity. The present knowledge that we possess of the actions of digitalis was only acquired by slow degrees. Its scientific application in the treatment of heart failure was not understood until the pharmacology of the drug had been worked out by experiments on the lower animals. If vivisection had done nothing more than give us digitalis, it could be truly said of it that it had accomplished a great deal. We are principally indebted for our present knowledge of the actions of this drug to Traube and Schmiedeberg of Germany, G. W. Balfour of Edinburgh, and Lauder Brunton of London. Brunton's and Balfour's names deserve especially to be remembered, the former for the elaborate and painstaking experiments by means of which he demonstrated its true physiological actions, the latter for showing us how to use it to the best advantage in cases of cardiac failure.

Mode of Administration.—In prescribing the tincture of digitalis it is as a rule better to give it alone. Its combination with an iron preparation forms not only an unsightly looking

mixture, but it is much more apt to disagree with the stomach than when given alone. If, therefore, iron is indicated in a cardiac case, and it frequently is, it is advisable not to combine it with digitalis, but to order it in a separate mixture.

Powdered digitalis can be prescribed in the pilular form. There is a famous combination known as Baly's pill, which is much relied upon by many physicians to remove a dropsy. The following is the composition of this pill :—

℞ Pulv. Digitalis
Pulv. Scillae
Pil. Hydrarg āā gr. i.
S. One pill two or three times daily.

The use of the so called active principle, Nativelle's or Quévenne's digitaline, is not to be recommended when we wish to bring about saturation symptoms, on account of the uncertainty of its action. It, however, can be employed with safety to produce the tonic effects of the drug.

QUARTERLY RETROSPECT OF SURGERY.

By FRANCIS J. SHEPHERD, M.D., C.M., M.R.C.S, Eng.,
Surgeon to the Montreal General Hospital; Professor of Anatomy and Lecturer on Operative Surgery, McGill University.

Flat-foot.—A very common and troublesome deformity is one which is called talipes valgus (planus), or flat-foot. This deformity is due to the falling down of the inner longitudinal arch of the foot. The posterior pillar of this arch is formed by one bone, the os calcis, and the anterior by several, viz., the scaphoid, three cuneiform, and three inner metatarsal bones with their joints. The keystone of the arch is formed by the astragalus. The arch is maintained in position principally by ligaments. The head of the keystone bone is prevented from sinking down by a ligament, the calcaneo-scaphoid which connects the anterior part of the os calcis with the under part of the scaphoid, and also by its connection with the os calcis by the strong calcaneo-astragaloid ligament. The arch is also preserved in some degree by the other ligaments holding the bones together and the plantar fascia.

Now if the astragalus or key-bone descends from any cause, the plantar arch is lengthened and the foot is flattened, and the more the bone descends the more the foot is flattened and the weaker it becomes, because less favourably arranged for bearing weight. The cause of the descent of the astragalus is the stretching of the ligaments which support it and the arch of the foot. Now there are two periods of life when flat foot is most likely to come on. 1st, In infancy; if weakly children be put on their feet too early, the ligaments are stretched, the arch is lengthened, and the astragalus descends in an inward direction. 2nd, At about the age of puberty, when the body increases rapidly in size and the various fibrous structures are softened and stretch easily, the arch of the foot is frequently destroyed, especially if individuals at this critical time are obliged to carry heavy weights or to stand for long periods.

When the arch of the foot is lost, the patient in walking loses his elastic step, the foot is raised as a whole, the spring of the toes being lost. The continual stretching of the ligaments and the pressure of the head of the astragalus on the muscles and nerves of the sole, of course, would also cause considerable pain, for which the individual consults a surgeon. The pain is often, especially after walking, very severe. It is also naturally worse at night than in the morning. In the early part of the day the arch is partially preserved by the sole and flexor muscles, when these get tired out the ligaments are put on the stretch and the pain commences.

In severe cases, as lately pointed out by Prof. Ogston (*Lancet*, Jan. 26th, 1884), a still further deformity ensues:—The heel becomes raised, giving the foot what he calls a canoe shape. This is due to the action of the calf muscles tilting the os calcis up, as owing to the flatness of the foot they cannot raise the foot on the toes and so throw the body forwards. The astragalus becomes altered in shape. The changes are confined principally to its head and neck, the neck is much shortened owing to pressure on the head, whose upper and outer part is pressed against the scaphoid and hence an abnormal foot is formed. Mr. J. Symington (*Jour. Anat. and Phys.*, October,

1884) has lately fully described the deformities existing in flat-foot, and he gives results of a dissection of one examined by himself. I refer my readers, who wish for further information, to his paper and the works of C. Hueter and G. Hermann von Meyer. Heretofore the treatment of flat-foot has been very unsatisfactory. In recent cases, prolonged rest, especially the avoidance of standing still and carrying weights may, with tonics, prove of some use. The wearing of flat-heeled boots, with a steel spring or waist to the boot, and an inside pad of rubber or leather to support the inner side of the foot is often beneficial.

Mr. Walsham (*Lancet*, Jan. 26th, 1884) describes a useful kind of valgus boot. He fixes a broad rubber band to the inside of the "uppers" of the boot on the outer side; this crosses under the sole of the foot opposite the calcaneo-scaphoid articulation; it is then carried up on the inner side of the foot to just above the top of the boot, and then by means of a leather strap and buckle is secured to the calf piece. He uses a valgus pad also which he slips over the rubber band. Some surgeons advise the use of the actual cautery to inner side of foot to hasten the shortening of the ligaments; of this method of treatment I have had no experience.

Mr. Willett, (Vol. XVIII., St. Barth. Hosp. Rep.), in severe cases advocates the forcible replacement of the bones of foot under an anæsthetic, and then placing it in plaster of Paris in a state of extreme inversion.

In some very severe cases where there is alteration in the shape of the bones and the patient cannot afford to undergo a prolonged course of treatment, other measures are necessary, and Professor Ogston, of Aberdeen, (*Lancet*, Jan. 26th, 1884), has devised a new operation for such cases. He advises cutting down on the astragalo-scaphoid joint, removing the articular surface of scaphoid and astragalus, and after placing them in good position, endeavouring to get bony union between them. He keeps the bones in position by ivory pegs. This is, in fact, an excision of the astragalo-scaphoid joint, and he advises it to be performed with strictly Listerian precautions. Prof. Ogston

has performed this operation seventeen times; the patients, without exception, remained free from fever during treatment. They all were benefitted by the operation, and in most of them bony ankylosis and a painless arch were obtained. Most of them resumed their laborious occupations.

Dr. Hermann von Meyer (*Studien über den Mechanismus des Fusses*), Professor of Anatomy at Zurich, after a careful examination of the normal and of the flat-foot, anatomical as well as clinical, comes to the following conclusions which, as may be seen, are not in agreement with views generally accepted. He says that flat-foot does not depend on destruction of the arch of the foot, but on a valgus position of the foot, and chiefly of the oscalcis. He holds that deformity is not due to relaxation of the plantar ligaments, but depends rather on exaggerated rotation inwards of the astragalus, and on subsequent changes in the plantar bones due to atrophy, resulting from mutual pressure. The fore part of the foot is also turned upwards and outwards.

Mr. R. Clement Lucas (*Lancet*, March 3rd, 1884), says that the flat-foot and weak ankles of puberty are always associated with rickets and albuminuria. This condition is characterized by relaxed ligaments and also some enlargement of the epiphyses. He also states that this form of rickets with albuminuria is invariably associated with masturbation. He remarks that the absurdity of treating such cases merely by mechanical appliances, &c., when there is an underlying habit causing a general constitutional disease, is very obvious. He never treats a case of flat-foot, knock-knee, or lateral curvature, without first examining the urine, and in the majority of cases he finds that albumen is present. This condition in boys, Mr. Lucas says, is most frequently seen about 15 years of age. Mr. Lucas gives two cases in support of his theory. There may be a modicum of truth in what Mr. Lucas says, but his assertion as to the cause of flat-foot and knock-knee is altogether too sweeping, and will not be accepted without much more evidence than is offered by Mr. Lucas.

Osteotomy for Genu Valgum.—Dr. Wm. MacEwen of Glasgow read a paper on this subject before the International

Medical Congress, held in Copenhagen in August last. This paper has been published in the *Lancet* of Sept. 27th. Dr. MacEwen first invited an expression of opinion on the following points: 1, The various methods of performing osteotomy for genu valgum and their comparative qualities. 2, The results of these operations. 3, Does the deformity return after it has been rectified by osteotomy? and if so, under what circumstances?

(1) As to the first point, should the intra- or extra-articular method be adopted; and should the tibia or the femur be selected for the operation—in other words, should Ogston's operation and its modifications or the supra-condyloid method be preferred on the femur; and if the tibia be selected, should Billroth's or Schede's operation be performed? and, lastly, which of these four operations is the preferable one?

(2) The results of the operation—Dr. MacEwen presented a table of 1,118 cases, or rather limbs, operated on by 37 surgeons. Eleven surgeons used Ogston's operation on 525 limbs; twenty-two surgeons used MacEwen's method exclusively and eleven occasionally; these 33 surgeons have operated on 580 limbs. In the other limbs operated upon, Chiene's and Schede's methods have been used. In these cases the accidents during the operation have been as follows: Hæmorrhages in two of McEwen's, thirteen of Ogston's, and one of Chiene's. The knife was broken off in the joint in one of Ogston's. Thirty-four out of the 37 surgeons used spray and other Listerian precautions, while three conducted the operation by the open method. Thirty-two cases of MacEwen's operation afterwards suppurated, eight cases of Ogston's, and one of Chiene's—that is, 41 out of 1,118 have suppurated. Five fatalities after McEwen's operation, though some of these were not directly due to the operation,—so there were 1,113 recoveries out of 1,118 cases.

With regard to the utility of the limb, in seven cases there was ankylosis, and in two (Ogston's) bow-legs resulted; all the others were good.

(3) Relapses—In seven cases relapses occurred; in one of Mr. Chiene's cases amputation had to be performed from the onset of gelatinous degeneration of the synovial membrane.

The average duration of the treatment was three months.

Dr. MacEwen then gave the statistics of his own operations. He had, up to July 31st, operated on 804 limbs in 490 patients (ranging in ages from 7 to 46 years), making 820 osteotomies in all for genu valgum. The supra-condyloid method was performed alone, in 810 limbs. The operations were all conducted under the spray and with strict Listerian precautions. In 8 cases suppuration took place. For the last three years no case has suppurated. Two of the patients died. Dr. MacEwen stated that he had performed osteotomy 1800 times in 1267 limbs, on 704 patients, with five deaths—two from diphtheria, one from tubercle, one from pneumonia, and one from enteric fever. In all the recoveries, there was improvement in the form, strength and utility of the limbs. Only two cases relapsed. The average duration of treatment was six weeks in the splints and two in the wards afterwards. The combined statistics of Dr. McEwen's operations and those of other British surgeons for genu valgum give 1384 limbs operated on, with ten deaths *after*, though not all *from*, the operation.

In the discussion which followed the reading of the paper, Prof. Ogston of Aberdeen said he had not altogether given up his own operation, because he was most familiar with it, and did not like to throw it over altogether; but he had for some years past told his students that Dr. McEwen's operation was the best, and he wished to make to that meeting of the congress a similar announcement. He would advise every person who wished to osteotomise for genu valgum to adopt it in preference to his (Dr. Ogston's) own.

Prof. Chiene of Edinburgh could not go the length of Professor Ogston in throwing up his operation altogether. Still, on his return to Edinburgh he would give Dr. MacEwen's a fair trial.

Prof. Schede (Hamburg) accepted Dr. MacEwen's operation; in fact, in most cases he had substituted it for his own. Still, he thought that in many cases the tibia was involved; he therefore, in these cases, performed his own operation.

Mr. Bryant (London) said there was now no doubt that MacEwen's operation was the best one.

Dr. Robin (Lyons) showed an apparatus whereby MacEwen's operation could be performed without a wound.

[For the benefit of those readers who have not kept themselves posted as to the various operations for genu valgum, I might mention that Ogston's operation consists in obliquely chiselling off the *inner condyle* of the femur and then forcibly straightening the bent limb and fixing in splints. MacEwen's operation is that of dividing with a narrow chisel the *shaft* of the femur above the condyles, from the inner side, just above the epipysal line, then straightening it forcibly, and fixing it in the corrected position for some six weeks.]

It certainly is very creditable to Prof. Ogston that he should so gracefully acknowledge that MacEwen's operation is a better one than his own. The other speakers made the same acknowledgment, though they did not so completely embrace MacEwen's operation as did Prof. Ogston. There is no doubt in the minds of the great majority of surgeons that MacEwen's operation is the best and simplest, as well as the safest. He himself has been marvellously successful with it. In the hands of others, owing, as Dr. MacEwen remarked, to his directions not being exactly carried out, accidents have happened. Several cases of death from hæmorrhage and from ulceration of a splinter of bone into the artery (popliteal) have lately been reported in the medical journals. Dr. MacEwen lays great stress on the direction of the cut, which should be from behind, forwards and inwards, for if the direction be from within, outwards and backwards, the popliteal might be divided. In Canada, this operation is not often called for, people not being so subject to rickets, owing to the better methods of living. Rickets are seen often enough among the French Canadians, but they are unwilling to have operations performed, or to have any interference with what "Le Bon Dieu" has sent them. In large centres like New York, the operation has frequently been performed, especially on the members of the foreign communities, such as the Italians, who are very subject to rickets.

Dr. V. P. Gibney, at a recent meeting of the New York Academy of Medicine (*Phila. Med. News*, Dec. 6, '84) read a

paper on *The Surgical Management of Rachitic Deformities of the Lower Extremities*, in which he said, in cases where osteotomy was necessary for genu valgum, MacEwen's operation is the only one that should be performed. Many of the surgeons who discussed the paper spoke most favorably of MacEwen's operation.

Tracheotomy for Croup.—Dr. Cocks (*Archives of Pediatrics*, Vol. I, No. 1) of New York relates his experience of 15 cases, which were all performed at the patient's houses, with no more skilled nursing than was afforded by patient's relatives. Eight of the 15 cases recovered. Two died on the first day, two on the second, two on the third, and one on the fourth day. Dr. Cocks or his assistant remained with the patient from three to six hours after the operation, and during that time instructed the amateur nurse in the conduct of the case. The room temperature was maintained at 80°F., a warm sponge was kept over the tube, and steam spray was kept constantly going. The nurse was directed to take out the inner tube every 15 minutes, soak it in hot water, and pass a muslin rag through it. A feather is used to clear the outer tube. After the third day the tube was taken out twice daily and cleaned. The tube was finally removed on the sixth to the tenth day.—*Lond. Med. Record*, Aug., '84.

Splenectomy.—At the thirteenth congress of German surgeons Von Hacker of Vienna exhibited a lymphoid sarcoma of the spleen, which had been successfully extirpated by Billroth. Before removal, the oval tumor measured ten inches vertically and more than seven inches transversely. On median laparotomy, the convexity of the tumor was found to be free from attachments, but the omentum and a coil of intestines were adherent to the hilus. The splenic artery and vein were divided between two ligatures, and rather more than an inch and a half of the adherent tail of the pancreas required removal with the thermo-cautery. This is the first splenectomy ever performed for sarcoma.

Credé, at the same congress, exhibited a man whose spleen he had removed two years and a half previously for a large cyst. In this case, as in the preceding one, there had been no enlarge-

ment of the thyroid or lymphatic glands, and the man was apparently quite well.

In the discussion which followed, Czerny of Heidelberg stated that the woman from whom he had removed a movable hypertrophied spleen five years previously was still alive, and exhibited no changes in the blood or in the organs above referred to. Hence we may infer that the spleen is not absolutely essential to life, and that its functions, after extirpation, is assumed by the medulla of the bones and other lymphatic organs.—*Phila. Med. News*, Aug. 23rd, 1884.

Operative Treatment of Malignant Affections of the Rectum.—At the recent meeting of the International Medical Congress, held at Copenhagen, Prof. Esmarch read a paper on the above subject, in which he laid down the following propositions:—1, In the treatment of cancer of the rectum, the same principles hold good as in the treatment of cancer of other parts of the body. 2, Extirpation should be as early and as complete as possible. 3, The more the surrounding healthy parts are removed with the diseased, the greater reason there is for hoping that recurrence will not take place at all, or will be long delayed. 4, Experience teaches that early and thorough removal may be followed by permanent recovery. 5, As, in cancer of the rectum, the lymphatic glands are secondarily affected at a comparatively late period, operation may be followed by permanent success when the disease has lasted some time, and has become extensive. 6, The prognosis in regard to the return of the disease is good, in proportion to the slow development of the new growth, the delay and the appearance of distressing symptoms, and the completeness of the operation. 7, The simple cylinder-celled cancers, which proceed from the more superficial layers of the mucous membrane, generally give a better prognosis than the forms with small alveoli and the gelatinous forms, which more rapidly enter the deep submucous layers. The greater the disposition to the deposition of gelatinous degeneration, the more malignant the case. 8, Extirpation of a cancerous nodule from the wall of the rectum is sufficient only when the nodule is well circumscribed and movable, and when only a part of the wall of

the rectum or anus is implicated. 9, In all other cases, amputation of the rectum beyond the points of growth is indicated. 10, The entire rectum, as far as the sigmoid flexure, may be removed with good results. 11, The principal dangers of the operation are—*a*, hæmorrhages; *b*, acute, purulent and ichorous inflammation of the connective tissue. 12, These dangers are to be combatted (*a*) by very careful hemostasis during the operation; (*b*) by very careful primary disinfection and provision for the free escape of the secretions of the wound (by drainage and the avoidance of cavities). 13, In amputation of the rectum high up, opening of the peritoneum is unavoidable, but peritonitis does not generally follow if the opening be at once closed by suture under strict antiseptic precautions. Drainage of the peritoneal cavity is indicated only in exceptional cases. 14, The progress of operative skill has essentially diminished the dangers of the operation, the death-rate having fallen from 50 to 20 per cent., and even lower. 15, The functional disturbance following amputation of the rectum is slight in comparison with the distress caused by the cancer. Incontinence of fæces is not complete, especially when the external sphincter has not been removed. Systematic cleanliness and the use of a suitable apparatus for closure commonly relieve the difficulty. 16, Resection of a portion of the intestinal tube in its whole circumference, followed by suture of the two ends of the intestine, is not to be recommended, since the lower portion of the intestine generally sloughs. It is better to preserve the external sphincter and fasten the end of the amputated rectum to the lower edge of the wound. 17, Extirpation of cancer of the rectum is, in all cases, rendered easier by dividing the posterior wall of the gut as far as the coccyx. Removal of the coccyx is generally unnecessary.

In the discussion which followed, Prof. Verneuil (Paris) stated that he had done his first colotomy thirty years ago, and his first extirpation fifteen years ago. He found that removal of the disease was impossible. He found that division of the cancerous stricture removed all complications, and gave all the advantages of colotomy. The whole length of the stricture

must be split. The incision was made from the tip of the coccyx by a thermo-cautery plunged in to meet the tip of the finger, hooked above the stricture. Through this channel, by a cannula if necessary, an écraseur chain was passed, and the rest of the division was completed. No blood was ever lost, and the symptoms at once ceased. No deaths followed.

Prof. Trelot (Paris) denied the advantage claimed for rectal extirpation, and pointed out the rapidity and malignity of recurrence.

Mr. Sampson Gamgee (Manchester) preferred the operation of inguinal colotomy.

Prof. Volkmann (Halle) observed that colotomy, even in Mr. Bryant's hands, was a dangerous operation, and that the statistics of extirpation were better than those of colotomy according to Bryant. Cancers in the rectum had little tendency to infiltrate early and recur soon. Even in desperate cases he had had no return under long periods, in one case not for ten years. The results of excision of the rectum had improved, and would go on doing so with improved methods. Asepsis and disinfection were normally powerful when the peritoneum was not opened, but when this was opened the dangers were great and cleansing difficult. But dangerous as extirpation was it was not so bad as colotomy, discomfort being hardly felt except in diarrhœa. The selection of cases, he said, was also important, and he did not operate on any case he could not reach the upper end of the disease by bi-manual exploration under anæsthesia, the incision should be both forwards and back to the coccyx, the anus alone being left. No attempt should be made to unite the upper with the lower end, which should be stitched well down and the cavities at the side thoroughly drained.

Prof. Kuester (Berlin) said that in extirpation he always applied sutures when the peritoneum had been opened. Cauterization was a proceeding from which good results were got in most of the cases where a permanent cure could not be expected. He would select either this or extirpation, very seldom colotomy.

In a paper on the "Statistics and Operative Treatment of

Cancer of the Rectum (*Archiv für Klin. Chir.*, Bd. 29, Heft 3) Dr. G. Heuck, of Heidelberg, gives reports of forty-three cases of this affection treated by Prof. Czerny, during a period of six years. In two only were the patients under thirty years, and in twenty-nine cases the disease commenced between the ages of forty and sixty years. Thirty were males and thirteen females. In one case only was there any secondary cancerous disease of the inguinal lymphatic glands. In twenty-five cases a radical operation was performed, and the diseased portion of the rectum excised. Although the peritoneal cavity was opened eleven times only one case resulted in death. Of the nine patients who had remained free from relapse up to the time of publication of the paper, two had survived the operation for more than four years. One was alive after twenty-one months, three after two years, one twelve months, and two at the end of six months. Relapses occurred in fifteen of the twenty-five cases, sixty p. c. In every one of these cases the disease returned within twelve months after the operation. The average duration of the disease from its reappearance to the death of the patient in the fifteen cases was 11·7 months. Wounding of the peritoneum, it is stated, is not attended with much danger, if care be taken by stitching the remaining portion of the gut to the external skin, to prevent fecal matter from coming in contact with the raw surface of the wound. The only contra indications to extirpation of cancerous disease of the rectum are stated by Dr. Heuck to be adhesion of the tumour to parts surrounding the rectum, extreme debility of the patient and the presence of secondary growths in the internal organs.—(*Lond. Medical Record*, April 15th, 1884.)

According to an editorial in the *Phil. Medical News*, Oct. 13th, 1883, it is stated that besides Czerny's twenty-five cases, 198 others have been placed on record. Of the 223, 180 recovered, and 43 (19·3 p. c.) died; 64 remained well for periods varying from two months to ten years. In thirty-five cases there had been no return of the disease for two years and upwards, thirteen had remained well for between five and ten years, so that 15·9 p. c. were in all probability permanent cures.

Mr. Jas. E. Adams (*Brit. Med. Jour.*, Aug. 16th) recom-

mends in cases of cancerous disease of the lower end of the rectum, the performance first of colotomy, and then when the patient has recovered from this, to excise the malignant growth as quickly as possible. He has carried out his method in one case, the patient being alive more than two years after the operation and living in comparative comfort although the disease had returned.

There is no doubt that extirpation of the rectum is in much favour with the German surgeons, but is not so often performed in France or England—colotomy being preferred. There are no doubt many cases where, if seen early enough, extirpation would be the best method of treatment, but there are not a few cases where it is impossible to reach well above the growth with the finger, and these cases call for colotomy, or the French operation of posterior division of the cancerous stricture.

Dr. Fenwick, of Montreal, has extirpated the rectum some half dozen times, and in one case, although the operation was performed some eight years ago, the patient is still alive.

Colotomy.—In connection with cancerous disease of the lower end of the rectum it would be as well to note what has been done lately in regard to colotomy, and to see what advantages, if any, it possesses over other operative procedures and the expectant treatment.

At the 13th Congress of German surgeons, Dr. Madelung, of Rostock, reported that last winter he had an opportunity of performing a modification of colotomy by which the utility of this operation in cases of cancer is considerably increased. Instead of making a small opening in the colon this surgeon cuts through the whole thickness of the gut and then secures the central end to the abdominal wound, whilst the peripheral end is closed and allowed to sink into the abdominal cavity. Great care must be taken to distinguish the centripetal from the centrifugal portion of the gut. The chief advantages of this operation are the protection of the cancerous rectum against the mechanical, septic, and chemical irritation of fecal matter, and its frequent painful accumulation between the cancerous stricture and the sphincter ani. There is less tendency

to prolapsus, and there is also no regurgitation of the fecal matter which in ordinary colotomies accumulates below the artificial anus, and so the surrounding skin can be kept clean. This modification is not applicable to late stages of the disease, when the gut has become over-disintended and the patient much exhausted. (*Beilage zum Centralblatt fur Chirurgie*, No. 23, 1884.)

Mr. Bryant, of London, read a paper on *Lumbar Colotomy* before the late International Medical Congress, held at Copenhagen. He dealt with the operation as a *curative* measure in syphilitic and simple ulcerations of the rectum and colon which resist other treatment, including recto-vesical fistula; as a *remedial* measure in volvulus of the sigmoid flexure as well as obstruction from tumours. He held that in all cases of cancerous stricture of the rectum or colon, which are not amenable to lumbar colectotomy or anal excision, right or left lumbar colotomy is strongly to be advocated, as it retards the progress of the disease, frequently prolongs life five or six years, and relieves suffering. It is necessary to perform the operation before the pernicious effects of obstruction occur. He submitted to the congress statistics of 82 of his own operations, of which sixty were performed for cancerous stricture, nineteen for non-cancerous stricture and ulceration of the rectum, one for volvulus, and two for obstruction due to tumours. Left lumbar colotomy was performed in seventy-seven, right in five. Thirty-three or forty per cent. died within a month of the operation; sixty per cent. of the whole number operated on received benefit from the operation; of the forty-nine successful cases sixteen died within six months, eight lived six to twelve months, twelve from one to five and a-half years, five from five and a-half to fourteen years, and eight left the hospital convalescent. Mr. Bryant, in the last edition of his *Practice of Surgery*, has printed the tables accompanying this paper, and to which I refer readers who wish for further information.

In the October number of the *American Journal of Medical Sciences*, Dr. W. R. Batt contributes a very valuable paper on *Colotomy*. He gives the history of the operation and describes the various methods of performing it. He has collected 351

cases, of which he gives an analysis, and asserts that these statistics show most conclusively that the dangers of the operation are very few, and that the number of recoveries depend very greatly on the nature of the affection for which it is performed; 215, or 62 per cent. of the total number (351), recovered.

Excision of Cœcum.—Mr. Walter Whitehead recently excised, at the Manchester Infirmary, the cæcum and colon of a man suffering from a carcinomatous growth encircling a large extent of the bowel. After excision, the ileum was attached to the skin below and the transverse colon in the skin above, in the primary incision made through the abdominal wall, just outside the rectus. The operation was very tedious and difficult, occupying nearly two hours. It was conducted on Listerian principles. Four days after the operation the patient was free from any untoward symptom.—(*Brit. Med. Jour.*, Nov. 8, 1884.)

Correspondence.

To the Editor of the CANADA MEDICAL & SURGICAL JOURNAL.

DEAR SIR,—As the anæsthetic property of cocaine hydrochlorate is playing an important *rôle* in therapeutics at present I would like to report a satisfactory result I had lately with it in general surgery. The patient was a young married lady in whom a retro-vaginal abscess had formed after a pretty sharp attack of pelvic cellulitis. The abscess was situated in the cellular tissue between the rectum and vagina, extending from the posterior fornix downwards to the perineal body. The patient was placed on her back in the lithotomy position and a small Sims' speculum passed under the arch of the pubis. The whole of the posterior wall of the vagina was painted over with a four per cent solution of cocaine for the period of about ten minutes, using about twenty minims in all. The incision was then begun downwards through at least a quarter of an inch of infiltrated tissue. A director was then pushed forcibly forward for some little distance before the abscess cavity was reached. During the whole of this procedure the patient declared to us whenever questioned that she felt no pain whatever. The anæsthesia lasted about twenty minutes, after which she felt the slightest touch acutely. Dr. G. Ross was present during the operation.

I am, very truly yours,

T. J. ALLOWAY, M.D.

Reviews and Notices of Books.

A Practical Treatise on Fractures and Dislocations.

By FRANK H. HAMILTON, A.M., M.D., LLD., late Professor of Surgery in Bellevue Hospital Medical College, and Surgeon to Bellevue Hospital, New York. Seventh American edition, revised and improved. Illustrated with 379 woodcuts. Philadelphia: Henry C. Lea's Son & Co.

It is now twenty-five years since this remarkable work was first given to the medical profession. The author was then residing in the city of Buffalo, whence he was soon afterwards called to New York to take the chair of Surgery in Bellevue Hospital Medical College, vacated, if we mistake not, by the death of the great Valentine Mott. Up to the time that Dr. Hamilton began the compilation of his work there was no treatise in the English language which dealt exclusively with the subjects of fractures and dislocations, but before his manuscript was ready for the press, Dr. Packard of Philadelphia had issued the first volume of his translation of Malgaigne's great work on these subjects. Hamilton, though disappointed, perhaps, at being forestalled, was not daunted, but went on to the completion of his admirable treatise, which has now reached the seventh edition. Most of the articles are as complete as it is possible to make them. That on Colles' Fracture has been considerably enlarged. Fractures of the Femur and Dislocations of the Hip have also received fresh attention. The author is evidently not in favor of the new operation of suturing the patella immediately after fracture. He says: "To the testimony thus accumulated against the operation I wish to add my own, that it is offering a very grave and dangerous substitute for others perfectly safe, and, so far as is yet proven, equally efficient methods. It is hazarding the life of the patient without offering any equivalent. Indeed, I do not see why anything less could be reasonably expected from this kind of surgery than tedious recovery, anchylosis, amputation or death; at least in a considerable proportion of cases this is precisely what has happened." We doubt if the evidence justifies the author in the employment of such strong terms of denunciation, especially if we consider the admirable

results obtained by Lister, McEwen, Whitehead and others. However, we would prefer seeing him in opposition, as the operation is undoubtedly a hazardous one, and should be attempted only by those thoroughly acquainted with all the details of Lister's method.

In the section devoted to gunshot injuries, a somewhat lengthy and interesting account is given of the late President's case. It will be remembered that Dr. Hamilton was summoned to attend the ill-fated Garfield on this occasion. Two excellent woodcuts are also given to illustrate the course of the bullet through the body of the first lumbar vertebra.

We felt some disappointment at finding that the author makes no mention of the treatment of fractures of the clavicle by means of rest in the recumbent position and the application of sand-bags to the whole length of the bone. We have had such excellent results from this plan, both in hospital and private practice, that we can heartily recommend it above all other methods of treatment in cases where the circumstances of the patient will permit of his remaining in bed. In any case, it should be pursued for one week, when such dressing as Sayre's may be applied.

This work will long hold the first place as a book of reference on fractures and dislocations for advanced students and practitioners of medicine.

The Science and Art of Surgery.—By JOHN ERIC ERICHSEN, F.R.S., LL.D., F.R.C.S. Eighth edition; revised and edited by MARCUS BECK, M.B., Lond., F.R.C.S. Vol. I: pp. 1124. Philadelphia: Henry C. Lea's Son & Co.

It is hardly necessary to say much in praise of a work now in its eighth edition. This last edition is in every way worthy of its predecessors, and is fully up to date as regards recent advances in surgical knowledge. Mr. Marcus Beck has rewritten the pathological portion, and in a manner most creditable to him. The other portions of the work have also been in part rewritten, much obsolete matter has been omitted, and much that is new and valuable has been introduced; 150 new figures have been added. The chapter on the operations practised on the eye has

been omitted. As this chapter was the weakest one in the old editions, its loss will not be much felt. The first volume includes three great divisions—1, *First Principles*, including Amputations and Disarticulations, Inflammation, Suppuration, Ulceration, and Process of Repair. 2, *Surgical Injuries*, including Gunshot Wounds, Hæmorrhage, Fractures, Dislocations, Injuries of various parts of body, Heat and Cold, &c. 3, *Surgical Diseases*, including Gangrene, Septic affections, Tumors, Scrofula, Venereal Diseases, &c. The first volume is well printed, and furnished with a capital index. The second volume is expected to be issued almost immediately. We cannot forbear quoting the following, which appears in the preface: "The teacher of surgery, who seeks to give a true and impartial view of the subject of his tuition, is placed much in the same position as a judge who is summing up a great cause. He must endeavor to divest himself of the trammels of the schools—to free himself alike from partisanship of individual bias and prejudices of professional antagonism." This the author has successfully accomplished, and hence the great and lasting popularity of his work. We can recommend this work to practitioners and students as one of the best arranged, most clearly written, and unbiassed text-books of surgery now before the profession, and one fully up to the level of modern surgery.

Surgical Delusions and Follies—A Revision of the address of Surgery for 1884, of the Medical Society of the State of Pennsylvania.—By JOHN B. ROBERTS, A.M., M.D., Professor of Anatomy and Surgery in the Philadelphia Polyclinic, Surgeon to St. Mary's Hospital. Philadelphia: P. Blakiston, Son & Co.

"If," says the author, "clinging to ancient fetiches with the superstitious awe of equatorial Africa is an evidence of barbarity, much of the surgery of to-day is indeed barbaric." It is with a few of these remaining superstitions that the address is mainly concerned. The first mentioned is the delusion that chloroform is a safe anæsthetic. Then the uselessness of styptics is exposed, the fear of small hæmorrhages is ridiculed, the hesitation in trephining the skull is censured, operative de-

lay in strangulated hernia is condemned, and temporising with phlegmonous inflammation is denounced. The prevalent notions that traumatic tetanus, pericardial and cardiac wounds are necessarily fatal are looked upon as delusions of a character sure to interfere with energetic and hopeful treatment. The above are specimens only. Quite a number of other glaring delusions are similarly dealt with. So with follies. The ether folly, the incision folly, and the sponge folly lead the way to other most fallacious but common notions entertained regarding the aspirator, drainage tubes, the use of nitrate of silver, the proper doses of medicines, &c. The address is worth reading and it will do good. It will show to many the error of their ways and induce them to depart therefrom.

Elements of Pharmacy, Materia Medica and Therapeutics.—By WILLIAM WHITLA, M.D., Professor to the Belfast Royal Hospital, &c. With lithographs and woodcuts. Second edition. London: Henry Renshaw.

We have already had occasion to notice the appearance of this manual, and take pleasure in introducing this second edition which has been so soon called for. It is one of the handiest, most complete and best arranged books of the kind we know of. Its alphabetical arrangement and the marking of the different departments upon the front of the leaves renders it very easy to find at once any reference which may be required. The therapeutical department is especially worthy of notice as containing all the latest ascertained and reliable facts as to the application of drugs; and the sections on prescription-writing and on non-official remedies will be found extremely useful. It should be recommended at all our schools as a text-book.

Therapeutic use of Faradaic and Galvanic Currents in the Electro-Thermal Bath with History of Cases.—By JUSTIN HAYES, M.D. Chicago: Jansen, McClarg & Co.

The author speaks very highly of this therapeutic means. He says, "I am confident that, as an auxiliary in the treatment of diseases of woman, it is a boon of greater value to her than has been discovered during the last fifty years." Any one possess-

ing the necessary leisure and having any curiosity to see how patients are talked to and treated by the Chicago electrifiers cannot do better than look over the wonderful cases and cures of Dr. Hayes with his electric bath. A greater jumble of medical absurdity it is not possible to imagine. The book should be relegated to lay readers with whom it might serve to advertise the establishment.

The Elements of Pathology.—By EDWARD RINDFLEISCH, M.D., Professor of Pathological Anatomy in the University of Würzburg; translated from the first German edition by Wm. H. Mercur, M.D., revised by James Tyson, M.D. Philadelphia: P. Blakiston, Son & Co.

This translation of an important work by the eminent German pathologist will no doubt find many readers. It is intended to represent in a concise manner a clear view of the groundwork of human pathology as recognized at the present day. It presupposes a certain amount of knowledge of the subject, but is of a character to be eminently useful to all advanced students. Used in connection with the author's or some other "manual" of pathology, it will aid in summarizing the subject-matter and materially assist in systematic study.

Books and Pamphlets Received.

PYURIA OR PUS ON THE URINE AND ITS TREATMENT. By Dr. Robert Ultzmann. Translated by permission by Dr. Walter B. Platt, F.R.C.S. (Eng.) New York: D. Appleton & Co.

DISEASES OF THE EYE AND THEIR TREATMENT. By Henry R. Swanzy, A.M., M.B. With illustrations. New York: D. Appleton & Co.

THE ELEMENTS OF PHYSIOLOGICAL PHYSICS: An outline of the elementary facts, principles and methods of Physics, and their applications in Physiology. By J. McGregor Robertson, M.A., M.B., &c. Philadelphia: Henry C. Lea's Son & Co.

A SYSTEM OF HUMAN ANATOMY, INCLUDING ITS MEDICAL AND SURGICAL RELATIONS. By Harrison Allen, M.D., Prof. of Physiology, University of Pennsylvania. Section V—Nervous System; and Section VI—Organs of Sense, Organs of Digestion, and Genito-Urinary Organs. Philadelphia: Henry C. Lea's Son & Co.

A MANUAL FOR BANDAGING, ADAPTED FOR SELF-INSTRUCTION. By C. Henri Leonard, A.M., M.D. Second edition, revised and enlarged. The Illustrated Medical Journal Co., Detroit.

DOCTRINES OF THE CIRCULATION: A history of physiological opinion and discovery in regard to the Circulation of the Blood. By J. C. Dalton, M.D. Philadelphia: Henry C. Lea's Son & Co.

A HANDBOOK OF OPHTHALMIC SCIENCE AND PRACTICE. By Henry E. Juler, F.R.C.S. Philadelphia: Henry C. Lea's Son & Co.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, Sept. 26th, 1884.

T. A. RODGER, M.D., PRESIDENT, IN THE CHAIR.

Enlargement of the Spleen.—DR. ARMSTRONG exhibited a boy 11 years of age, whose spleen extended a couple of inches below the umbilicus. Enlargement dated from an attack of typhoid fever three years ago. The lad's mother says that on three occasions he has had attacks of unconsciousness, followed by paralysis of one side, and lasting a few days. There is a diminution of red-blood corpuscles and an increase of white. Improvement in general health had followed the use of Liq. Arsenicalis, and for a time the spleen became smaller.

DR. WILKINS said he had attended the boy off and on for years. He was not sure if what he took to be attack of typhoid were that, as six or seven months after the boy had a feverish illness, when he became semi-comatose for several days. The spleen at times reached below the crista ilii. Had repeatedly examined the blood; usually there were but one quarter the normal number of red-blood corpuscles. Found no absolute increase of white-blood corpuscles. For a time quinine caused the spleen to get smaller.

Traumatic Tetanus in a woman aged 40.—DR. WILKINS exhibited part of a foot, also a piece of sole leather, the size of half a pea, which had been driven up into the foot by standing on a nail. This occurred on Saturday. The following Wednesday she was seized with spasms, and removed to hospital on Thursday. It was thought that a piece of the nail might be in the soft tissues of the foot, but after careful examination by Dr. Roddick, nothing was found; but it was deemed wise to remove two toes and the parts for one inch back. On dissecting the piece removed, Dr Wilkins found the bit of hard leather resting on a nerve filament. The symptoms were not much lessened by the operation, the patient dying thirty hours later, probably from asphyxia. Dr. Wilkins said if he had another similar case he would try excising the nerve higher up, say in the leg.

Dr. Trenholme said he had had a case very like this one, where a boy got a splinter of wood into his foot. The splinter was pulled out and the parts healed nicely, but in ten days tetanic spasms followed, ending fatally. Dr Trenholme found a very small bit of wood, surrounded by a drop of pus, in the foot. Dr. Fuller, who performed the *post-mortem*, traced the nerve from the wound to the base of the brain, and found it all inflamed. In the spine, the membranes, as well as the cord, were congested. Some of the fluid from the spinal canal was injected into a dog; paralysis followed, which lasted several days.

Dr. Bell said that he had seen several cases of traumatic tetanus in the hospital. A man was stabbed in the instep with a pitchfork; a bit of stocking was found at the end of the wound. Another case was that of a girl, who had a nail run into her heel. After death he dissected the parts, and found a sliver of iron resting against a nerve filament, which was swollen and œdematous. A third case was where a man was hurt from a fall on the buttocks; symptoms of deep-seated suppuration ensued. The man died seven days after the injury. No *post-mortem* was allowed in this case. On theoretical grounds, Dr. Bell believed success might follow amputation and keeping the patient well under the influence of opium—in fact, pushing the opium as far as possible.

Dr. Henry Howard hoped surgery would prove an aid in these cases, yet he doubted if it were possible. He related several cases which had been under his care—one being that of a son of the late Dr. Mount's, where tetanus followed a scratch on the buttock.

Uterine Myoma; Removal; Death from Exhaustion.—Dr. Wm. Gardner exhibited the specimen, which was about the size of an orange. Patient, aged 52, had had severe hæmorrhages for four or five years. On examination, the above tumor was found, and although very weak, it was deemed wise to remove it, which was done piecemeal. Patient did well for 36 hours, dying from exhaustion 56 hours after the operation. The discharges were never at any time fœtid. The womb was irrigated repeatedly, and at times continuously, by means of the double irrigation tubes. Dr. Browne assisted at the operation. Dr.

Gardner said it was well known that uterine fibroids frequently kept up menstruation for long after the usual time, and were often the cause of the menorrhagias seen at the menopause. Profuse menstruation at the climacteric is not normal, and should be followed by a uterine examination in order to prevent operations being performed upon women already much weakened.

DR. TRENHOLME thinks one is not warranted to explore the uterus by the occurrence at this period of menorrhagia alone. The question of operating for fibroids depends upon whether we can control the hemorrhages till after the menopause or not.

Infant Feeding.—Dr. Blackader read a paper on this subject. (*See* CAN. MED. & SURG. JOUR. *for November, page* 203.)

DR. ALLOWAY said that infants objected to milk digested with Pancreatic Extract on account of its bitterness. He also spoke of the benefits of using very fresh milk, and the means used to obtain a regular supply, as seen in some cities in the old country, where she asses and goats are brought from door to door and the quantity required there and then milked.

DR. GURD asked if the observations made by other members agreed with his, viz., that artificially fed infants were, as a rule, larger than others.

DR. CAMPBELL agreed with Dr. Blackader that only the minimum of food found necessary should be given. He condemned the more convenient long-tubed bottles as being not only injurious in themselves for many reasons, but also as tending to make the mothers less careful altogether of their infants. It was so easy to put the baby down, with the bottle beside it, and "let it go as you please." His experience coincided with Dr. Gurd's, that artificially fed infants were larger and heavier than others. He (Dr. Campbell) found that stall-fed cows gave a more acid milk, and as many of our city cows were stall-fed, this would account for the reason why milk foods so often disagree.

DR. HENRY HOWARD said he had noticed that sometimes a mother's milk, whilst agreeing well with her own thriving child, when given another to nurse, the foster child would fail and pine away. When a student in Dublin, had often seen cows led from door to door to be milked for the customers.

DR. CAMERON said if the milk were only partially digested, the bitter taste would not be present. He uses gum water as a diluent for milk in preference to any starchy preparation, believing it less apt to sour. He spoke strongly against the milk supplied to the city, which sometimes for hours was churned in the waggons on their way from the country. Some cows were kept in the city, but these were mostly badly housed and fed. A patient of his, an infant on milk diet, three months old, was suddenly taken with choleraic symptoms. The milk was stopped and it got well; again it was put on the cow's milk, and the diarrhœa, etc., returned. Dr. Cameron went to the milkman's to seek for the cause of this, and found that the day the baby was first taken ill the cows had been fed with old cabbage leaves and turnip tops. He thought the Health Officer ought to look after dairy inspection.

DR. WILKINS said he had had very satisfactory results with the use of pancreatised milk; has always used Benger's preparation of Pancreatine. At times he has found it necessary to rest the stomach, and so has used it per rectum. Anæmic mothers don't give the quality of milk required, though the quantity may be plentiful. Here he orders barley water, and the child to be nursed less frequently. He said that a drop or two of sour milk left in the tubes of a bottle was enough to set up lactic acid fermentation in a whole bottleful of milk.

DR. ARMSTRONG had found milk digested with Benger's preparation very useful. On one occasion he fed a three months old infant for seven days entirely by the rectum, the child recovering from its illness.

DR. BLACKADER said that the fresher the milk the better for infants. Boiled milk was much more difficult to digest than unboiled. He has noticed that bottle-fed infants were either very large and fat, or just the opposite.

At the annual meeting, held October 10th, the officers for the ensuing year were elected (*see Oct. Number, page* 191.)

Extracts from British and Foreign Journals.

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

Successful Yellow Fever Inoculations.

The following appeared in the Paris papers of November 11th, and may be news to yours readers: "In yesterday's session of the Academy of Science, M. Bouluy, Vice-President, entertained his colleagues with a discovery of great importance. Since 1880 M. Domingas Frére, Professor in the Medical School at Rio Janeiro, has occupied himself with this question. He has even made several communications on the subject to the Academy of Medicine. He had not been able to demonstrate the microbe of yellow fever, but ascertained that the virus, of whatever nature it may be, had been attenuated, and that guinea-pigs had acquired immunity. Since then, one of our countrymen, M. Rabourgeon, pupil of Chauveau, Pouchet, and Pasteur, has been called by the Emperor Dom Pedro to found a veterinary school at Rio Janeiro. He started supplied with all the necessary apparatus for the study and culture of the microbes. Domingas Frére and Rabourgeon united their efforts to solve the question. After having carefully experimented on guinea-pigs with the attenuated virus, they inoculated themselves as well as several students of medicine and employés of the museum of Rio. They underwent the symptoms of mild yellow fever which disappeared in three days. The Emperor Dom Pedro visited the laboratory, and having satisfied himself of the excellent results of the method, authorized experiments on human beings. Nearly 200 persons, most of whom were wharf-laborers, summitted to the vaccination and remained unaffected, while around them they saw large numbers of their comrades succumbing to the disease. English sea-captains sailing in these latitudes, learning that yellow fever was epidemic at Rio Janeiro, had all their crews vaccinated, first setting the good example themselves. The description of the microbe will eventually be made. Meanwhile it is certain that the attenuated virus has preserved about 500 animals and human beings, who had submitted to the vaccination. These happy results must be compared with the report made by Dr. Rochard, that of twenty-five physicians sent to Senegal to care for the yellow fever patients, twenty-three had soon died, and the conclusion is near that this vaccination is destined to save the Europeans who visit places

where the yellow fever is endemic. We are happy to see that one of our countrymen, pupil of our savants, is among the new benefactors of mankind.—*Med. News, Nov. 29th.*

Experimental Production of Typhoid Fever.—Dr. Luigi Petrone reports the following interesting observation in *Lo Sperimentale* (April, 1884). A patient, 22 years of age, suffering with typhoid fever, towards the end of the first week had a temperature of 40.3°C. (104.5°F.), when an ounce of blood was taken by a leech. Under microscopical examination he found very few spores, a few short bacilli, many forms and threads, joined together in bundles, all of which forms took staining remarkably well with Weigert's fluid. The next day the blood was injected into two dogs by hypodermic injection. By the next day there was increase of temperature, thirst, and muscular prostration, which were soon associated with anorexia, diarrhœa, tenderness of the abdomen, particularly in the right iliac region, swelling of the spleen, and tympanites. Twelve days after the injection had been made, both animals succumbed. The autopsy revealed recent swelling of the spleen, enlargement of the mesenteric glands, which were decidedly infiltrated; the solitary follicles and Peyer's gland were swollen, and in the lower part of the ileum the mucous membrane was ulcerated. The blood contained micrococci, bacilli, and threads. In fresh preparations of the liver, spleen, large bowel, and Peyer's glands, there were seen infiltrations of bacilli and spores, with spiral-formed threads. From each of the dogs about 15 grammes of blood were drawn and successfully injected into two other dogs, and autopsies of the fatal cases showed a result identical with the foregoing. Recalling the experiments of Klebs and Tizzoni, he draws the following conclusions from his experiments:—

1. The blood of typhoid patients (*typhus-kranker*) is septic, and is capable of infecting animals into which it has been introduced by injection. 2. The infection succeeds immediately in dogs, by means of the blood, without any prodromic symptoms. 3. Clinically, the infection reveals itself in dogs by high, continued, remitting fever, and through a typhoid condition, as it is developed in man. 4. The anatomical alterations found in the experimentally-excited typhoid were developed and maintained by means of small parasites, which were present in the form of spores, bacilli, and a thread-like mycelium.—*Deutsche Medizinal Zeitung; Phila. Med. News.*

CANADA

Medical and Surgical Journal.

MONTREAL, DECEMBER, 1884.

THE LYNAM CASE.

This now celebrated case has probably come to an end—for the present at any rate. We have purposely abstained from any comments upon it whilst it was still before the court. So much interest has been excited by the published reports that no doubt all our readers are aware of the principal facts. Two years ago the wife of one Peter Lynam, having always been a woman with a temper, became morose, excitable and utterly careless of the comfort of her husband and children. Finally she attempted the life of Lynam with an axe, was arrested, confined in gaol, and admitted to the Longue Pointe Asylum as a dangerous lunatic upon the certificates of Dr. Henry Howard and the gaol physicians. She was entered upon the books of the asylum as suffering from erotic mania by Dr. Perrault, the regular physician. Some months ago a gentleman of this city, having visited her, became satisfied that she was sane and endeavored to procure her liberation, stating that Dr. Perrault was of the same opinion. Dr. H. Howard, however, believed her to be still insane and unfit to be discharged. Without his consent (as government visiting physician) she could not be discharged. Application was therefore made before Judge Jetté for an *enquête* to determine her state of mind. This was granted and evidence was heard. The strong point made by the applicants was Dr. Perrault's statement that from prolonged observation of the woman he believed her of sound mind and fit for discharge. The almost incredible thing about this, however, being that, during the whole period of her confinement he had never made a report to that effect to the Government visiting

physician, as the law specially provides that he shall do in any such case. Drs. Pickup, Wanless and Trenholme had also examined Mrs. Lynam and found her sane. The woman herself appeared in court and was examined by the judge, making lucid statements and exhibiting no excitement. On the other side Dr. H. Howard stated his belief that the woman was a lunatic, subject to uncontrollable excitement, during which she was quite irresponsible for her acts. Drs. Geo. Ross and Cameron related their observations of the woman on two separate occasions. At the first interview many suspicious circumstances were observed but no positive evidence of insanity. At the second, in the presence of her husband, there was manifestation of suddenly developed fury of a maniacal character, her violence being directed against her husband, concerning whom also they believed her to be laboring under certain delusions. In their opinion she is a monomaniac of a dangerous character and unfit for liberty. A great many points might be mentioned which, added together, led up to the opinion given. Any one or two of these alone might not seem to have much weight, but, brought together, were thought sufficient to warrant a positive assertion of her insanity. With such conflicting evidence before him the learned judge declined to act without further expert testimony. He therefore applied to the Government to appoint an alienist for this purpose, and Dr. Vallee, of the Beauport Asylum, was finally named. Public opinion was strongly in favor of having Drs. Bucke, of London, and Metcalf, of Kingston, associated with Dr. Vallee, but the final decision left the matter in the hands of the last named alone. Dr. Vallee, after a full examination of the entire case, lasting over several weeks, presented his report to the judge. The conclusion he has come to is, that Mrs. Lynam is not quite sound of mind, that she is not sufficiently unsound to warrant her detention in the asylum, but that when liberated she must be provided with a guardian other than her husband. This report of Dr. Valleé has satisfied general public opinion which, very naturally, sided with a poor woman who was represented as being wrongfully imprisoned, but it does seem to us a very unsatisfactory document. We have no space to analyse it, but let any one read it, and we feel satisfied

that any fair-minded person will say Dr. Vallee's description is that of an insane person. Nor will the doctor himself go so far as to assert that she is sane and fit for discharge, just as might be said of any other patient who had thoroughly recovered his reason in the asylum. He provides especially that she shall be watched and guarded after she is dismissed, and, above all, some one must be made answerable for it that she does not cross the path of her husband. This certainly seems something like substituting confinement in a private house, under a private guardian, for confinement in a public asylum. We cannot look upon Dr. Vallee's report as settling the case, because of its uncertain sound, and we regret exceedingly that the other gentlemen from Ontario were not allowed to unite with him in a commission of enquiry whose verdict would have been assented to by everyone without hesitation. When Dr. Vallée's report was presented, the judge ordered an *assemblée de parents* to recommend a proper person to act as guardian. This advisory body selected Sister Therèse! The Court, however, rejected this suggestion, and directed that the custody of Mrs. Lynam be entrusted to Mr. Alfred Perry, the gentleman who had interested himself in her behalf.

We cannot close without adverting to the absurdity of the law which allows of an unlimited number of medical witnesses—non-experts—being examined in these cases. It should certainly be altered and power should be given, in all such cases, to the judge to have experts appointed at once, whose evidence alone should be taken.

AS OTHERS SEE US.

The following remarks from an able and honored member of the British Association, Professor Struthers, of Aberdeen, gives a striking picture of the general impression made upon our foreign visitors of the state of medical education in this country and in the neighbouring states. Dr. Struthers, we may mention, is one of the oldest members of the Medical Council of Great Britain, and, whilst Professor of Anatomy in the well-known University of Aberdeen, has taken a life-long interest in British medical politics, and an active part in the important

deliberations of the Council. The opinion of such a man, who specially visited so many of the Canadian and American University seats with a view to personally ascertaining their facilities for medical education and the thoroughness of their teaching, must necessarily be read with interest. We quote from the *Aberdeen Daily Free Press*, 24th October, 1884:—

"Dr. Struthers remarked that his primary object in crossing the Atlantic had been the meeting at Montreal of the British Association, which, they were aware, is to honour Aberdeen next year; but he had taken the opportunity to look into things medical in Canada and in America. The meeting of the Canadian Medical Association at Montreal during three days, just before the meeting of the British Association, afforded an excellent opportunity of seeing the medical profession. Without the least flattery, he must say that he had never heard better speaking than at the very largely attended dinner of that Medical Association, or more evidence of culture in the profession of any country. It was better English, in fact, than one is accustomed to hear in London. The number who are of Scotch parentage, was quite surprising, but that is characteristic of all classes in Canada. The examinations for medical degrees in Canada are satisfactory, indeed appear to be excellent; and this applies no less to the preliminary than to the professional examinations. In regard to schools of medicine, we must recollect that Canada is a young country, and that museums and endowments for scientific objects are generally things of time. But the University of Montreal, McGill University, as it is called, impressed us all as an excellent school, aiming well, and maintaining a good standard in its teaching and in its examinations. Its museums are fair, and in regard to the teaching in the department in which he was specially interested, it was pleasant to see that the able professor of anatomy, Dr. Shepherd, regarded his subject from the scientific aspect also, instead of treating it from the mere professional point of view, as it is too commonly treated in medical schools. The buildings of McGill University, in which the meeting of the British Association was held, are handsome, and the surrounding park, with its fine trees, made us wish that we could have such an environment for our colleges. What it wants is better endowments for its scientific chairs, anatomy, physiology, zoology, botany, and chemistry. It would be to the honour of the spirited citizens of the large and wealthy and beautiful city of Montreal if they supplied these endowments. We, of "the old country," are apt, in a somewhat patronizing spirit, to think

of "the colonies" as places where the professions must be behind, but what we saw of the medical profession in Canada soon removed any such impression; and the profession there deserves the best sympathy and support from Great Britain in its efforts to maintain a good standard in the face of the depressing tendencies of the system of the neighbouring States of America. He had then visited, along with his fellow-traveller Professor Cunningham, of Dublin University, the principal universities and medical schools of the United States. One constantly hears of the looseness of the medical system of America, but it is interesting to see and hear of it on the spot. Great cities, like New York or Philadelphia or Boston, will always produce a certain number of eminent physicians and surgeons, and great men of science will arise here and there, whatever the system of medical education and graduation, or however little encouragement the State may give to scientific research. But what can be expected from a system of medical education which is comprised nominally in three years, but virtually in a two years' course; from a preliminary examination in general education which may look fair on paper, but is virtually little or the nearest to nothing; and from professional examinations which pass the candidates after such a course? School buildings and schools announced in all the superlatives of the English language, raising your expectations, which collapse when the buildings and appliances are seen face to face? The schools and examinations that would aim high are kept down by the bad ones. None feel this more than their own best men, who complain of their helplessness. Though there may be a demand for medical men of such education in the Western and Southern States, it is not clear but that the Universities of most reputation could, notwithstanding, take up a higher position and be successful in attracting those students who hoped to take a better place in the profession, and who might go forth accredited to the public by adding to their degree the name of the University—as Pennsylvania. Harvard, or Yale—from which it was obtained. Nor is it clear why America cannot do what Canada does so well."

Disposal of Sewerage.—A case which has caused considerable comment in medical circles has recently been before the Court of Queen's Bench in this city. The municipality of Verdun, two miles from the limits of the city of Montreal, indicted one Mann, the contractor for the civic scavenging, as a public nuisance, for having dumped a quantity of night-soil

upon a farm near to the houses occupied by several of the residents. It was shown that disgusting stenches had arisen from this deposit, and medical witnesses for the prosecution seemed to have good reason for the opinion that it was extremely likely to be the means of spreading disease. The judge clearly took this view and the jury gave a verdict against the defendant. This decision must have the effect of causing our aldermen and Board of Health to consider how the emptyings of the cesspits are to be disposed of, for they can no longer be spread out upon the land to disgust the neighbours and perhaps sicken their children. In this connection we might draw their attention to what has recently been done in Birmingham. There, they were not allowed to discharge the sewerage into the small stream running through the city. They have consequently adopted the following plan which, according to Mr. Lawson Tait, has reduced the mortality of Birmingham five per thousand:—The waste from the kitchen, etc., is weekly collected and burned in specially constructed furnaces. The heat thus obtained is used to dry the human excreta thus converting it into a valuable manure. Of course the human excreta are regularly collected and transported in closed vessels to the furnaces.—Why should not the system which has worked so well there, answer here ?

Hydrochlorate of Cocaine.—A great number of American observers have been relating their experience with this drug. In operations upon the eye, the almost universal verdict is one of unqualified praise. One operator, however, mentions that in two cases of cataract-operation sloughing of the flap took place and, in view of the undoubted effect of the drug upon the vaso-motor nerves, thinks it worthy of consideration whether this was merely a coincidence or not. No success has followed its application to the sound skin, but after hypodermic injections in the neighborhood, small tumors have been painlessly removed. Numerous examples of its successful application to the larynx are being recorded. Amongst many cases in general surgery, where it has proved very satisfactory, are the following: Evulsion of the nail, incision, &c., of the gums, abscision of the tonsils, making examination in vaginismus, incising strictures,

cauterizing the nares, &c. It has not been found of any benefit when applied in sensitive teeth. We saw it used a few days ago by a medical friend. The case was one of abscess in the posterior wall of the vagina. The usual four per cent. solution was brushed over the part several times within a few minutes, when the tissues were freely incised. No pain whatever was experienced, though the cutting could be felt. A great future seems to be open for the application of this useful drug.

ONTARIO MEDICAL ACT AMENDMENTS.—The committee appointed by the Ontario Medical Council to draft amendments to the Ontario Medical Act have had an interview with the Attorney-General on the subject. The first amendment provides that no College shall be entitled to send a representative to the council unless it has a medical staff of teachers actively engaged in teaching. The second provides "That all actions brought against medical practitioners for malpractice must be instituted not later than one year from the date of such so-called malpractice, and also that security for costs in suits for damages be given by the plaintiff": a very good clause, especially in Ontario where suits of this kind are becoming lamentably frequent. Another clause gives to the council "power to establish a code of ethics, and in the event of any violation of the code, to publish the offender by suspension or erasion of his name from the register of the College": a very important and great power—one capable of being the means of great good, if judiciously employed. Another makes the annual payment to the council $5, with privilege of commutation for one payment of $20. These proposed amendments seem to be favorably viewed by the Ontario papers.

THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL opened its Session of 1884-85 on October 1st, in its new and spacious building, where, during the summer, many changes have been made to add to the comfort of the physicians who attend the clinics. The building is four stories high, has a frontage of ninety feet, and has a large yard, in which is the well-ventilated building for the teaching of operative surgery, regional anatomy, and the like. In the basement is found the

pharmacy and patients' waiting room; on the first floor the amphitheatre, comfortable and light, for surgical, gynecological, opthalmic, and other operations, and for the various clinics; also a second lecture-room for orthopœdic surgery, and instruction in naval, military, and State hygiene; together with eight other rooms for the treatment of patients, and the reading-room, well supplied with medical journals. On the second floor is the large room for laryngoscopy, opthalmoscopy, and otoscopy, with facilities for teaching thirty at once, if necessary. The new histological and pathological laboratory is also most thoroughly equipped, and contains one of the largest collections of specimens in this country. A photographic gallery for taking pictures of important cases is a new feature. The two upper floors are devoted to hospital purposes, where private patients are treated, either in separate rooms or in a general ward, recently opened. During the last session one hundred and eighteen physicians studied at the School, and the present demand for post-graduate instruction is on the increase. During the winter, clinics will be given on the following topics: Surgery, Clinical and Operative; Gynecology, Venereal Diseases, Diseases of the Eye and Ear, Physical Diagnosis, General Medicine, Diseases of Children, Urinary Analysis, Surgical Dressings, Obstetrics, Applied Anatomy, Diseases of the Nervous System, Orthopœdic Surgery, Diseases of the Nose and Throat, Skin Diseases, Pathology and Histology, Hygiene, Pharmacy, Anatomy and Physiology of the Nervous System, and Genito-urinary Diseases.—*Com.*

THE BACILLUS OF SYPHILIS.—In a preliminary communication to the *Wiener Medizinische Wochenschrift*, of the 22nd ult., Dr. Sigmund Lustgarten, of Vienna, describes the finding by him of what he considers the true bacillus of syphilis. In two cases of initial sclerosis and in a gummatous nodule he has found micro-organisms of about the same size and appearance as tubercular bacilli. They were found enclosed in swollen lymphoid cells either singly or in groups, and under a high power (Homog. Immer. 1-20) clear spaces could be discerned in the cells. The colouring method he employed to demonstrate

them was entirely different from that used to bring out either the lepra or tubercular bacilli. He maintains they cannot be mistaken for these, and from the fact that they are contained in cells they cannot be due to putrefaction. He promises at an early date to publish his method of coloring.

FIRST ANNUAL MEETING OF THE NEW YORK MEDICAL ASSOCIATION.—This association is composed of those members of the profession of this state who still favor the old code and thus continue their connection with the American Medical Association. The first meeting has been held in New York, and the report of the proceedings shows the work done to have been of very excellent character. The papers were numerous and many of great merit. The attendance was large, and numbered the majority of the leaders of the profession from all parts of the State.

—We publish among our selections an extract from the *Medical News* Paris correspondence, giving an account of the discovery of a mitigated virus of yellow fever, and of the successful vaccination of a number of persons at Rio. If this prove true, it will be an inestimable boon to tropical regions.

—The annual dinner of the Toronto School of Medicine—Dr. Bascom in the chair—was held on the 12th November, and that of the Trinity School on the 20th November—Mr. P. A. Dewar, chairman. Both of these well-established entertainments were well attended by representative men from the different colleges, by prominent University dignitaries, and by eminent citizens, and seem to have been in every way highly satisfactory and enjoyable.

—At the last meeting of the Medico-Chirurgical Society of Montreal, Dr. Roddick exhibited a papillomatous tumour about the size of a hen's egg, which he had recently removed from the bladder of a man fifty three years of age. The ordinary median operation was performed, the growth being found attached by a short pedicle to the left side of the bladder, near the neck. Instant relief to all the symptoms followed the operation, and the patient is now quite convalescent.

—We notice by our American exchanges that there is a very general reduction in the attendance of students at the American Medical Schools, attributed partly to the hard times and partly to the excitement and worry of a presidential campaign. We are glad to learn, however, that at Harvard the entry is considerably above the average. Our own schools seem to have an unusual influx. Both the Toronto Colleges have large classes, while at McGill, not only is the entry of new men exceptionally great, but the total class exceeds by twenty-five or thirty the largest number reached in the history of the school.

—Koch on his critics shows that masterly knowledge of the whole question of Bacteria which we expect from his professional study of the subject. The way in which he has recently exposed the fallacies of Lewis, who stated that an identical bacillus with that of cholera is found in the mouth, and the statements of Finkler and Prior on the bacillus of sporadic cholera, is a warning to observers not to rush hastily into print before thoroughly investigating the subjects at which they are working. He has also succeeded in inoculating animals with pure cultivations of the cholera bacillus and producing a condition identical with that of ordinary cholera.

—The *Therapeutic Gazette*, devoted to the interests of advanced therapeutics—and of those most excellent caterers for the profession, Parke, Davis & Co.—has removed, editorially, from Detroit to Philadelphia, and is now under the management of Prof. H. C. Wood and Dr. Meade Smith. The change will doubtless benefit our valuable contemporary, but we must say that under the management of our esteemed friend, Dr. Brodie, of Detroit, there was much that was alluring about the properties of new drugs; there was also much of important value to the busy practitioner.

—The general committee of the International Medical Congress, 1887, composed of representative men from all points, met in Washington on the 20th ult., to nominate the general officers and presidents of the sections. Dr. Flint, of New York, was elected President of the Congress, and as Vice-Presidents, Dr. Stillé, Philadelphia, Dr. H. I. Bowditch, Boston, and Dr. R. P.

Howard, Montreal. The profession throughout Canada will appreciate the compliment of having a Canadian one of the three Vice-Presidents, and the nomination of Dr. Howard will meet with universal approval. The date of the meeting in 1887 is not yet fixed.

—Dr. Clarkson Freeman, of Milton, Ontario, favors us with notes of an interesting case of rupture of the urethra, of which we make the following abstract:—A farmer, aged 29, fell a distance of ten feet astride a board one inch wide. Bleeding from the urethra was noticed immediately. After some difficulty a No. 5 metal catheter was introduced into the bladder. The instrument was changed every few days until No. 12 was reached. An abscess subsequently formed in the seat of the rupture, which, when opened, gave great relief to constitutional symptoms. The tendency to contraction of the urethra was so great as to necessitate the almost constant use of the catheter for two months. We congratulate the Dr. on the admirable result which followed. He suggests, and we quite agree with him, that the flexible catheter is much to be preferred to the hard unyielding silver instrument in such cases, especially when it becomes necessary to retain it in the bladder for any length of time.

—The two great medical publishing firms of the United States will shortly have rival works on Medicine before the profession. Messrs. Lea & Co., of Philadelphia, announce an American System of Medicine, in five volumes, edited by Dr. Pepper, of the Univ. of Pennsylvania. It will correspond to Reynolds' system, but will be brought well up to date. The first volume will be ready for distribution in February. Wm. Wood & Co. announce a Reference Handbook of the Medical Sciences, in eight volumes, the first of which will be ready in about six months. The work will be on the plan of Quain's Dictionary, but on a much larger scale, and will take in all subjects of interest to the practising physician. We are much gratified to see among the list of contributors a goodly number of Canadians, but we must confess that, to the fifteen names, we should gladly have seen some others added, who would, in

their different departments, have given satisfactory proof of the solid character of Canadian medicine.

—The appointment of Dr. Schweiniger as extra-ordinary professor of Berlin and attending physician of the skin department at the Charité, has stirred the profession of the German capital in an unusual way. The obnoxious Professor owes his appointment to Bismarck, whose physician he has been and whose fat has been reduced and digestion improved under his skilful management. Dr. Schweiniger began, we believe, as a regular physician, and was with Ortel at Munich, Privat-docent, but he has of late been mixed up with irregular modes of practice, and is stated to be an homœopathist. It is rumoured that he challenged Du-Bois Reymond, the Dean of the Faculty, for refusing to acknowledge him. As we gather from our latest German contemporaries the difficulty is not yet settled.

Obituary.

DR. GEO. W. NELSON.—This gentleman, well known in Montreal, has recently died in California, where he was residing for his health. He was a son of the late Dr. Horace Nelson, and grandson of Dr. Wolfred Nelson, at one time mayor of Montreal. He was a graduate of Bishop's College. Suffering from pulmonary disorder, he sought a more favorable climate where he still did some good professional work, but was ultimately prostrated and has died at at early age.

DR. ARCHIBALD MCLEOD.—It is with much regret that we learn of the death, in October last, of this promising young physician after a short illness from peritonitis. Dr. McLeod was born on the 16th February. 1859, at Orwell, Prince Edward Island. He is the fifth son of Capt. Alexander MacLeod, of H. M. surveying steamer Gulnare. He studied at Prince of Wales College, Charlottetown, and McGill University, Montreal, where he graduated in arts and medicine (1883), and afterwards completed his medical studies at the New York Polyclinic. He was a brilliant student, showed great judgment and skill as a physician, and had before him a most promising career.

DR. EDWARD JENNINGS, of Halifax, has died at the age of 68 years. He was one of the oldest and best known of the physicians of that city. He graduated in 1843, and has diligently practised his profession since that time. At the last meeting of the Canada Medical Association in Halifax, Dr. Jennings took an active part in the proceedings and read a carefully prepared and interesting paper. He was a man of most kindly and hospitable disposition. He was for many years a coroner and also took much interest in matters pertaining to sanitary science and the public health.

Medical Items.

—An Inopportune Dislocation of the Jaw is one of the topics dealt with by a *feuilletoniste* writing in a recent issue of the *Union Médicale*. It seems that during the performance of a wedding ceremony the bride sneezed so violently as to dislocate her jaw at the critical momement when she should have pronounced the solemn "oui." As she was unable to articulate the word, it was found necessary for the whole party to repair to a surgeon before the ceremony could be completed.

RELATIVE DIASTASIC ACTIVITY OF MALT EXTRACTS.—***Maltine.***—An interesting series of reports on this subject has been sent us by Mr. H. P. Gisborne of Toronto, representing the Maltine Manufacturing Co. of New York. The text upon which reports are based is the proposition of that eminent authority on "Digestive Ferments," Dr. Wm. Roberts of Manchester, that "if properly prepared, Malt Extracts have a high power in digesting starchy matters." Dr. Roberts, however, is of opinion that a large proportion of the Malt Extracts of commerce have no action upon starch, and quotes the fact that "out of 14 trade samples examined by Dunston and Dimmock, only three possessed this power." Of these, Maltine was found to be most powerful. The Maltine Manufacturing Company, moreover, submitted the question to the leading chemists of the world, and in the report above alluded to we have analyses from many eminent analytical chemists of Europe and America, with a unanimous conclusion in favor of Maltine, both as a constructive and digestive agent. Those interested in the subject can secure copy of reports by addressing H. P. Gisborne, 10 Colborne street, Toroto.

"PEPTONIZED" COD LIVER OIL AND MILK.—This preparation is an instance of the perfection to which modern pharmacy has attained. Containing a considerably greater percentage of oil than is usual in Emulsions, the objectionable features of the Oil are so completely masked as to render the material perfectly palatable. The Oil is, moreover, *peptonized*, making its assimilation a matter of little effort to even the most delicate stomach. Like all preparations of Messrs. Reed & Carnrick, this one is in general favor in the United States, and will no doubt prove equally acceptable here.