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## Original Communications.

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### THE INDICATIONS FOR OPERATION IN SPINAL LESIONS.\*

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By GEORGE A. PETERS, M.B., F.R.C.S.,

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FOR the purposes of this paper, I shall define the term "operation" as meaning exposure, by cutting, of the parts involved in or suffering from the effects of the lesion, with a view to relieving the symptoms by removal of the causes upon which they depend. This definition, then, excludes from present consideration such aids to restoration of parts to their normal relations, after injury, as extension and counter-extension, suspension, manipulation, etc.

The operation essentially consists in cutting through the soft parts in or near the central line of the back, and removing the spines and laminæ of the requisite number of vertebræ so as to fully expose the spinal cord and its membranes at the seat of the suspected lesion. This operation, which, as a systematic proceeding, is of comparatively recent date, was at first called "trephining the spine," but is now known by the euphonious and expressive term, "laminectomy." Even in this progressive age, when it is the habit of operating surgeons, securely entrenched behind walls of asepticism and antisepticism, to make light of the effects of even serious

\* Read before the Toronto Medical Society, March 1st, 1894.

operations *per se*, I am unable to bring myself to the point of regarding this operation as "a perfectly safe one," as it has been called by some who have written on the subject. On the contrary, I think it must be regarded as an operation of considerable magnitude, often requiring an incision ten or twelve inches long; an operation, moreover, which involves, by its very nature, the production of a compound fracture of the great supporting column of the body, and which lays bare the elongated nerve centre which forms the means of communication between the brain and the other parts of the body. Such an operation, I submit, cannot be esteemed as otherwise than a serious one—not, in itself, such as to be very greatly dreaded in a perfectly healthy subject, but quite serious enough to be capable of tipping the scale in the wrong direction in a subject whose vitality is already greatly depreciated by grave disease or severe injury. We must, accordingly, approach the study of this question with the candid admission that, in operating in spinal lesions with a view to removal of their cause, we are introducing an element which may, under the existing circumstances, form a distinct menace to the life of the patient. The only cases, then, in which such operation could be deemed admissible are those in which the lesions are of such severity as to cause:

(1) Paralysis of motion or sensation, or both, affecting a considerable part of the body.

(2) Symptoms of irritation of the spinal cord, or some of the nerves coming off from it; such as (a) spasmodic or tonic contractions of some of the muscles of the trunk or extremities, or (b) intolerable and intractable pain.

Some of these conditions, moreover, must be present, not as the result of acute or chronic disease of the spinal cord itself, but as the result of some lesion capable of being attacked surgically, before the question of laminectomy can even be entertained.

#### CLASSIFICATION OF CASES REQUIRING OPERATION.

In a paper published in *International Clinics*,\* January, 1892, I endeavored to include all such cases under three headings:

(1) In the first class are placed those in which the symptoms come on suddenly, and are the result of violence to the vertebral column, causing fracture, dislocation, or hemorrhage. In this class I would also place punctured wounds entering the neural canal.

(2) To the second class belong those in which the symptoms develop slowly, and are due to compression or irritation, caused by the products of inflammatory action, such as callus and cicatricial tissue following injury; the caseous products or granulations of a tuberculous process, as in Pott's disease; and syphilitic gummata.

\* Tumor of Spinal Meninges. *International Clinics*, January, 1892.

(3) In the third class the symptoms also come on slowly and progressively, and are due to compression by the growth of a neoplasm, malignant or benign.

It is interesting, and illustrative of the rapid march of medical science, to look back a few years and note the standing at that time of such a surgical proceeding as that which it is the object of this paper to consider. One is somewhat surprised to learn that so recently as in the year 1884 the operation of laminectomy, or trephining the spine, had no standing at all. Whereas in every third or fourth number of any of the medical journals of to-day which enjoy a large contributory constituency one will meet with a record of such a case for relief in one or other of the above-mentioned classes, in the year 1884 (taken at random) I did not find a single case recorded in any of the following representative journals: *The Lancet*, *The British Medical Journal*, *The Medical and Surgical Reporter* (Philadelphia), *The Medical News* (Philadelphia). In the *Glasgow Medical Journal* of February 15th, 1884, Dr. Macewen is reported as having shown before the medical society a case in which he had performed laminectomy for paraplegia from Pott's disease, with an ideal result. In these journals, it must be borne in mind, there are numerous cases recorded of fracture of the spine, and in some of them, at least, the symptoms recorded are such as certainly would, in the present day, be taken as strongly indicating the performance of the operation.

In reference to the operation for the relief of symptoms in Pott's disease, although Macewen commenced operating on these cases in 1884, the innovation made such slow headway that in Erichsen's "Surgery," published in 1888, the following sentence occurs: "The treatment of paraplegia in spinal caries presents nothing special. The limbs may be rubbed to maintain their nutrition. No operation such as trephining the spine is justifiable, as the compression is due to disease of the membranes, and not to displacement of the bones."

In regard to cases belonging to my third class, as is very well known the first case on record is that of Horsley and Gowers, in 1887.

#### INDICATIONS WHEN SYMPTOMS ARE THE RESULT OF VIOLENCE.

In the first class of cases, viz., those in which the lesion is due to sudden violence to the vertebral column, we may, perhaps, profitably distinguish between fractures due to direct violence, and those due to indirect violence. In the latter cases, where the fracture is due to falls from a height, with a doubling over of the body, or where it is due to a crushing force applied to the ends of the spine, as often happens in driving under a low doorway, the degree and character of the deformity are often such that it is impossible to doubt that there has been a total destruction of a segment of the cord. In such deplorable cases it must be acknowl-

edged that the surgery of to-day has nothing to offer in the way of relief. It has been shown that degenerations begin to take place within about three days, and consequently all thought of restoration from suturing the lacerated ends of the cord must be abandoned as hopeless. Abbé's suggestion to transplant some of the nerves coming off above the lesion into the stump below; or to graft in a segment of the cord of (say) a calf; or to remove a vertebral body in order to bring the divided ends of the cord into apposition without tension, must be looked upon as more venturesome than plausible, and as not having a legitimate basis in facts known in regard to the repair of injury in the tissue of nerve centres, either in man or the lower animals.

When we know, then, that our patient has sustained an injury such as, by its very nature and extent, must have severed the spinal cord completely, there is, I believe, nothing to do but abandon him to his lamentable fate, and endeavor to make the remainder of his sorry days as tolerable as possible. If the lesion happen to be low down, the patient may live for months, or even years; but his after condition is always, to put it mildly, most unsatisfactory, and his end is usually hastened by the occurrence of bedsores, cystitis, etc.

There are, however, fortunately, some cases of fracture due to indirect violence in which the deformity may not be so great as to make it certain that the cord has been crushed by the bones. In such cases, the symptoms may be due to division of the cord; but, on the other hand, they may be due to compression by bone or clot. The treatment of such cases will be governed by the same considerations as guide us in cases of fracture by direct violence; hence we may consider both together.

In fractures by direct violence the symptoms may be due: (1) To complete severance of the spinal cord; (2) to compression of the cord between two fragments of bone; (3) to compression by blood clot, either intra- or extra-dural. Now, it must be admitted that it is generally impossible to decide which of these conditions is present. If there were a clear history of sensation or voluntary movements being present in the parts supplied by the cord below the seat of injury, subsequent to the reception of the violence, a gradual disappearance of these symptoms would presumably be due to a hemorrhage. Or if, on examining the patient some hours after the injury, we find areas of sensation or hyperesthesia, or if there are occasional cramps in the muscles, accompanied by pain, we might conclude that the cord is compressed by bone or clot, but that it is not divided. But, as Golding-Bird\* says, "Often the history given of the accident is so obscure, and the result of an examination so uncertain, that it becomes a matter of pure speculation whether the para-

\* Golding-Bird. *British Medical Journal*, May 23rd, 1891, p. 1124.

lytic symptoms are due to pressure by a broken neural arch, or by blood clot, or to division of the cord." It must, moreover, be admitted that cases presenting symptoms of complete paraplegia sometimes recover without operation. Dr. Beevor\* reports such a case, in which the patient was paraplegic for ten weeks, but within a year was able to get about with some assistance. In the same number of the *British Medical Journal*, Mr. Tatham reports † a similar case, in which there was complete paralysis of motion and sensation below the neck, with embarrassment of respiration and deglutition, and incontinence of urine and feces. He remained in this condition for three months, but subsequently regained enough power to enable him to walk ten or twelve miles.

I believe, however, it will be generally conceded that these are exceptionally fortunate results, and that in a vast majority of cases in which paraplegia occurs as the result of injury—particularly if the injury be high up—spontaneous recovery does not take place, but the patient, after a more or less painful and tedious illness, perishes miserably from cystitis, bedsores, or pulmonary disease.

Not forgetting the fact, then, that in a few exceptionally happy instances recovery takes place in cases which were apparently hopeless, it appears to me that we consult the best interests of the greatest number of our patients by submitting to operation (unless there is some special contraindication) all cases of fracture by indirect violence in which the deformity is slight, but in which there are well-marked symptoms, and also all cases of fracture by direct violence with symptoms. No surgeon in his senses would, of course, be so rash as to advocate operation in a case in which it is certain that the patient can not recover, either with or without operation. But where it is practically certain that the patient must die without operation, and where an operation holds out even a forlorn hope of relief, I think the surgeon should have the courage to give the patient the last chance by operating. Very many of such cases will certainly die, but perhaps a few may be saved. The argument sometimes used, that a failure tends to bring reproach both upon the surgeon and his art, is an unworthy one. The surgery of to-day can very well afford to stand upon its merits, and the surgeon must be prepared to bear with equanimity and patience any unjust reflections which may be made by the patient's friends after the event. Very often, fortunately, the onus of deciding whether to operate or not is taken out of the hands of the surgeon by the patient or his friends after hearing a fair and unbiased statement of the case; but should the decision fall to the surgeon, he must be prepared to act up to his convictions.

As an example of a special contraindication, I would consider it improper,

\* Dr. Beevor. *British Medical Journal*, Nov. 3rd, 1888, p. 994.

† Tatham. *British Medical Journal*, Nov. 24th, 1888, p. 1163.

as a rule, to operate immediately on a case in which there was a clear history showing the compression to be due to hemorrhage. In such a case one might, I think, without laying himself open to the charge of having committed a surgical blunder, wait some days, or even weeks, in the hope of absorption taking place. There is nothing more uncertain than the conditions which may be actually present when the slow onset of symptoms points to compression from hemorrhage. The upper limit of the clot may be pretty accurately detected by the symptoms, but we cannot tell how far down the cord it may extend. Then the clot may be extra-dural, intra-dural, or it may be a very minute clot within the substance of the cord itself—usually in the gray matter. In the latter situation it is, of course, beyond the reach of the surgeon, and the ultimate condition is entirely dependent upon the success which may attend nature's efforts at removal. If, however, the lesion were so high up as to embarrass respiration or deglutition, the operation certainly should not be postponed, but the cord and its membranes should be exposed, in the hope that the pressure may be removed before the embarrassment of respiration has induced pulmonary disease.

Having performed laminectomy, then, and exposed the cord lying in its membranes, we must be guided as to the further steps of the operation by what we find to be the conditions present. Should we find the dura mater torn, and the cord lacerated or crushed, the most we can do is to remove any fragments of bone, blood clot, or other débris, and leave the result to nature. We may stitch up the dura, if that be found possible, but there is little or nothing to hope for from stitching the severed cord. We may, however, find the dura intact, but be able to detect that the cord is lacerated and crushed within—the soft, friable cord having been destroyed by a force which the more resistant dura was able to withstand. In such a case, I believe nothing is to be gained by opening the dura, and I am of opinion, moreover, that harm may result from so doing. The draining away of considerable quantities of cerebro-spinal fluid must, it appears to me, have an unfavorable impression on the circulation in the brain, and this impression is borne out by two cases which have fallen under my own observation, to one of which I shall refer later.

In regard to punctured wounds of the vertebral column with symptoms of division or compression of the cord, I feel that it is very difficult to indicate a line of treatment. I should be inclined to assume an attitude of "masterly inactivity" at first, in the hope that union by first intention might occur. On the first symptoms of inflammation, however, I should be prepared to cut down, removing an arch, if necessary, in order to establish perfect drainage, and so to prevent spread of an inflammatory process along the neural canal.

INDICATIONS WHEN SYMPTOMS ARE DUE TO PRESSURE OF  
INFLAMMATORY PRODUCTS.

In our treatment of the second class of cases, those, namely, in which the symptoms are due to the pressure of inflammatory products, in the broad sense of that term, we must have due respect to the element of time. During the repair of a fracture, for example, temporary callus may be thrown out to such an extent as to produce compression. As recovery proceeds, however, the excess of the callus will probably be absorbed, with an accompanying restoration of the functions of the cord. In such cases, moreover, degenerations do not appear to take place early, and cystitis, bedsores, etc., are not likely to present themselves as complications, so that operative interference should not be undertaken until nature has been given ample opportunity to exert her powers of absorption and restoration. It is impossible to exact a time-limit in such cases, and much must depend on accompanying or resulting symptoms; but we must bear in mind the possibility of such callus persisting, and also the possibility of a cicatricial band forming in such a position as to compress the cord and vitiate its functions. Hence we may be called upon to operate in such cases when nature has proven herself unequal to the task of restoring the abrogated functions of a cord which has suffered from compression.

## LAMINECTOMY IN POTT'S DISEASE.

It is somewhat remarkable that the operation of laminectomy has scored its most brilliant successes in cases of compression-paraplegia due to Pott's disease. There is no doubt that cases of spontaneous recovery from this condition are by no means rare. And it may perhaps be objected that the cases in which the functions of the cord are restored after operation are those which would have recovered if left alone. This, however, is scarcely a generous criticism, for the recorded cases are those in which recumbency, rest, and extension have been given a fair trial without resulting benefit. It may be claimed, on the contrary, that in many of the cases in which operation has proved successful it was undertaken under the most unfavorable circumstances, when the patient was greatly enfeebled, and perhaps had suffered from cystitis, bedsores, and pulmonary complications, as the result of the deformity and compression.

As may very readily be conjectured, there is a very wide difference of opinion as to the time when cases of compression-paraplegia, due to Pott's disease, should be made the subjects of operative treatment. As representing the conservative side of the argument, I cannot do better than quote from a paper by Mr. Southam,\* of Manchester. In remarks upon a case of operation in his own practice, which terminated very satisfactorily,

\* *British Medical Journal*, March 26th, 1892, p. 655.



he says: "Before performing laminectomy for caries, accompanied by pressure symptoms, it must be borne in mind that with complete rest in the recumbent position, and fixation of the spine, the paralysis will, as a rule, gradually disappear. Consequently, operative interference is only indicated in a very small proportion of cases, and should not be adopted until palliative treatment has been given a fair trial, and then only when no benefit has resulted, or when the symptoms are progressing in spite of treatment."

The views of those who hold a contrary course of treatment were forcibly upheld by Mr. Arbuthnot Lane,\* in a paper before the Clinical Society of London, in which he "urged very strongly the advisability of operating on these cases as early as possible, if a short period of recumbency is not followed by definite improvement." In that paper he reported eleven cases of compression-paraplegia from Pott's disease on whom he had performed laminectomy. These had suffered from paraplegia during periods varying from three weeks to eleven months. One case, "an extremely feeble, pallid child," died, a few hours after the operation. Another died, six days after operation, "from a sudden and excessive hemorrhage from polypus of the rectum." Two other cases were unsuccessful. In the other seven cases the results were most gratifying, the paraplegia being completely and permanently cured in each case. In remarking upon these cases, Mr. Lane observes "that the conditions found at the operation appeared, in every case, to preclude the possibility of recovery of the spinal column and cord without surgical interference." Also, "that several of these cases would of a certainty have died from chest or bladder complications, from which they were suffering, and which only disappeared when they recovered power over their intercostal and abdominal muscles." He claims, also, that, in addition to removing the paraplegia, the operation enables the surgeon to remove large quantities of carious bone and tuberculous matter by scraping and irrigation, and permits repeated local applications of iodoform and other antiseptics.

In the discussion which followed the reading of this paper, Mr. Davies-Colley mentioned a case in which he had operated twice, each time removing much caseous material, but without any relief to the paraplegia—indeed, the child was distinctly worse after each operation. Mr. W. H. Bennett remarked that, inasmuch as some patients recovered after there was paralysis accompanied by deformity, he would watch the patient well before operating. Mr. Bowlby related two cases in which rapid recovery followed, although no pus was found at the time of operation.

\* *British Medical Journal*, March 31st, 1891, p. 949.

Dr. Alfred Parker,\* of Hull, reports a successful case, in which he states "that the condition of the vertebræ at the time of operation indicated conclusively that no treatment short of laminectomy would have been of use." He closes his remarks thus: "It cannot be doubted that a careful laminectomy in progressive cases is far superior to a persistent perseverance in a policy of rest and extension for an unlimited time." These are merely a few sample cases in which the operation has been done with varying success. The reports, on the whole, are encouraging, but we cannot be blind to the fact that shoals of unsuccessful cases have probably occurred, but, owing to the fact that most operators shrink from appearing in a bad light, have never been reported.

On reviewing the facts at my disposal, *pro* and *con*, I am strongly inclined to give my allegiance to the advisability of operating in all progressive cases which prove unresponsive to a few weeks' conscientious treatment by rest, fixation, and extension. We may, by following this rule, sometimes operate on a case which would have recovered if left alone; but it is certain, I think, that many such cases must inevitably perish unless they are saved by operation.

#### PRESSURE BY SYPHILITIC GUMMA.

Should symptoms of a slowly developing paraplegia, monoplegia, or monospasm accompany or supervene upon an attack of syphilis in its tertiary stage, the operation of laminectomy at the site of the compression should certainly not be resorted to until at least three months' vigorous treatment by large doses of iodide of potash have elapsed. Although ascending and descending degenerations are said to commence within three days after division of the cord, the latter will bear compression without these changes occurring for a much longer period. Hence the urgency is not great in such cases. Should the symptoms resist this treatment, however, I am of opinion that we should treat the case as one of benign tumor, and endeavor to remove it by laminectomy.

#### COMPRESSION-PARAPLEGIA DUE TO THE GROWTH OF NEOPLASMS.

The bodies of the vertebræ are not infrequently the seat of secondary cancerous growths. It has been stated that when a primary cancer is situated in the thyroid gland, secondary growths are peculiarly apt to occur in the spinal column. Primary sarcomata also occasionally occur in the vertebræ. Sooner or later, if the patient survive sufficiently long, the tumor will project into the neural canal and cause compression-paraplegia. In such cases no operation is justifiable, as it would be impossible to promise even temporary relief from such interference.

Benign tumors of various kinds have been found within the neural

\**British Medical Journal*, April 15th, 1893, p. 796.

canal, either within or without the dura. Lipomata and myxomata have been found outside the dura, and these but rarely. Within the dura, syphilitic gummata, solitary tubercular masses, myxomata, sarcomata, psammomata, lipomata, and lymphadenomata\* have been known to occur.

Dr. I. H. Cameron, of this city, removed, in 1892, an angio-fibroma which had evidently commenced within the membranes, probably having its origin in the arachnoid or inner surface of the dura. The diagnosis in such cases is usually difficult, and is arrived at largely by a process of exclusion, though in some instances the symptoms are sufficiently positive. I have no hesitation in urging the advisability of operation in all cases in which there is a reasonable probability that compression-paraplegia is due to the presence of a benign tumor. In fact, in no class of cases does the operation of laminectomy hold out better hopes than in these. The patient is usually in a good condition as regards his general health, and the parts are not in a state of inflammation or caseation. There is usually not great urgency in these cases, and so the seat of operation may be properly prepared; and the surgeon can surround the patient with all the safeguards pertaining to aseptic and antiseptic surgery. The pioneer in this field of surgery is Mr. Victor Horsley, who, on June 9th, 1887, undertook the removal of a myxoma from a patient of Dr. Gowers. In this he was successful, and the patient recovered completely. This tumor was intradural, but did not involve the membranes, so that Mr. Horsley was able to stitch up the slit in the dura.

The operation in such cases is greatly simplified if it be found that the tumor is outside the membranes. Although most authors assert that very little is added to the gravity of the operation by operating the dura, my very limited experience does not support this view. If the margins of the membrane can be closely approximated again by fine sutures, so as to protect the cord and favor rapid healing, I can conceive that but slight disturbance may result. But when the membranes are diseased, so that, on removing the affected portions, it is found impossible to bring the margins together, we are under the necessity of leaving the cord denuded of its natural protecting sheath, so that it may be irritated by the pressure of blood clot and other soft tissues, and so that large quantities of cerebro-spinal fluid are certain to drain away. This was the condition in the case already referred to, in which I had the honor to be associated with Dr. Cameron. After the operation in that case, large quantities of cerebro-spinal fluid drained away, and there was accompanying evidence of disturbance of the circulation and nutrition of the brain. The most

\* J. Jackson Clarke. *British Medical Journal*, Nov. 21st, 1891, p. 1098.

marked symptoms in that case were weak, thready, and irregular pulse, rapid and suspicious breathing, and delirium with excitement. The temperature, however, never rose above 100° F., and, at the time of death, which occurred on the fourth day, the wound was fairly healed, except in the position of the drainage tubes. Although we frequently read of cases in which there has been an escape of large quantities of cerebro-spinal fluid without ill result, I confess that I am unable to bring myself to believe that such markedly changed conditions of intracranial pressure as such considerable losses must entail can be altogether unaccompanied by corresponding changes in nutrition, and so in the exercise of function of the brain cells. The case above cited, together with a case of drainage in hydrocephalus recently under my care, in which similar symptoms were observed, leads me to believe that the fatal characters of the cases are due to disturbance, especially of the respiratory and cardiac centres, in the medulla.

That such losses of fluid do not always occur when the dura is opened, and that such losses, when they do occur, are not by any means always fatal, is abundantly attested by numerous cases ending in recovery; so that the additional risk entailed by opening the dura forms no valid argument against the operation. I would, accordingly, repeat my conviction that operation should be performed in all cases in which the paraplegia could be determined to depend upon the pressure of a benign tumor; but I would urge the importance of leaving the membranes intact, if possible, of coapting them accurately by sutures, if they have been opened, and of endeavoring to get union of the whole wound by first intention without the use of any drainage tube.

## COCAINE IN SURGERY.

BY L. M. SWEETNAM, M.B.,

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**R**EGARDED by the Peruvians for centuries with superstitious veneration, sacrificed in the time of the Incas to the sun, used by the Mexicans before the arrival of the Spaniards as a substitute for money, few drugs have as remarkable and interesting a history as coca erythroxyton.

It is one of the few drugs in which the surgeon, rather than the physician, is interested.

The alkaloid cocaine was known for years before Koller, in 1884, immortalized himself by demonstrating, before the Ophthalmological Congress in session at Heidelberg, the value of cocaine in operations upon the eye, making the first practical application of the knowledge. For its application to the needs of the general surgeon, we are mainly indebted to Dr. J. L. Corning, of New York.

The enthusiasm with which the drug was at first received soon gave way to a wiser caution, aroused by frequent mishaps following its use, until to-day many good surgeons entertain the extreme view, which would condemn the use of cocaine at all. This, we think, should be deprecated, because the drug may be employed with both safety and satisfaction, if the precautions which we shall have occasion to mention be adopted.

In defending the employment of the drug, we feel under some obligation to preface that defence with a statement of the risks incurred.

First, we have that unknown quantity, idiosyncrasy, which must account for those rare fatalities, occurring in the practices of the cautious and experienced.

Children under ten years of age, and adults of neurotic temperament, are very intolerant of the drug.

When employed as an application, or injected in the tissues of the head or neck, small doses, comparatively, develop toxic symptoms. The same may be said of its action upon the genito-urinary tract.

In addition, we would suggest that one, or at the most two, per cent. solutions be used when injected, it being safer to inject two drams of a one per cent. solution than half a dram of a four per cent. solution.

While the amount of cocaine used must vary with the extent of surface to be anesthetized, the aggregate ought not to exceed one and three-quarter grains; if about the face, not more than one-third of a grain.

In injecting, the intradermic, rather than the hypodermic, method is to be chosen, the risk of injecting the cocaine directly into a vessel being in this way much lessened.

Organic disease of the heart and serious disease of the lungs are contraindications.

During injection, the patient should be in the recumbent position. In operations upon the throat or nose, the head should not be raised until complete anesthesia has been secured.

The solutions must be free from organisms.

If, despite the employment of these precautions, toxic symptoms develop, we may comfort ourselves with the thought that cocaine, like strychnia and belladonna, hangs her danger signals well up, and far out, usually giving distinct warning long before any serious danger is reached.

Remembering, then, that death under cocaine results from depression of the cardiac and respiratory centres, place the patient in the recumbent position, perfectly horizontal. Stimulate the branches of the fifth by slapping the face with a towel wet with cold water.

Practise artificial respiration.

In the presence of great pallor, administer amyl nitrite by inhalation.

If these means fail, and deglutition is impossible, inject (hypodermically) caffeine and sulphuric ether.

Tetanzation is met by chloroform inhalation.

Aim at moderating the reflex excitability of the nervous system.

Sustain the heart and re-establish the equilibrium of the blood pressure.

The treatment of acute cocaine intoxication is, above all, a case for arterial medication.

I have had good results from morphine hypodermically administered. This should only be given at the very outset, and only in sufficient quantity to secure the physiological effects.

Those who are distinctly nervous and apprehensive are protected by the administration of one-drop doses of the liq. trini trini, administered at intervals of ten minutes, until the physiological effect of the drug is secured. The nitro-glycerine acts almost as promptly as the amyl, and for a much longer time.

A few words with reference to the solution. This should be free from bacteria and pathogenic organisms.

Few alkaloidal solutions show the same tendency to develop bacteria; a solution, therefore, that is to be kept must contain some anti-bacterian.

Chloroform acts well, but is objectionable where the solution is to be

used in the eye. Pilcher dissolves the cocaine in a mixture of equal parts of sterilized water and saturated solution of salicylic acid. This amount of the acid is sufficiently protective without being objectionable. Carbolic acid, one in thirty, preserves the solution, increases the anesthetic action, and lessens the risk of intoxication.

Resorcin, too, enhances the anesthetic value of the cocaine, and lessens the risk of unpleasant symptoms. The resorcin combination is particularly valuable in using the stronger solutions for nasal work.

We sometimes hear the statement: "In all cases of plastic surgery where cocaine has been used, it has operated against immediate union, upon which the success of the operation so often depended." In the great majority of cases this difficulty may be overcome by using a thoroughly sterilized one or two per cent. solution, and by using a constrictor without the Esmarch bandage.

A one per cent. solution injected into tissue deprived of its blood and serum by means of the rubber bandage is equal in its local action to a three per cent. solution in tissues not rendered anemic in this way.

Another objection to the use of the Esmarch bandage, in addition to its interference with primary healing, is that after the removal of the constrictor we are apt to have a general oozing, the bleeding in some cases so free and continuous as to render the term "bloodless operation" quite *malapropos*.

The following is the technique of operations upon the extremities, where the circulation may be temporarily arrested, and as suggested by Wyeth: In operating upon a finger after injury or destructive osteitis, the hand is cleansed by immersion in a 1 in 2000 sublimate solution for half an hour. The anesthetic may be employed in two ways, viz., directly injected into the lines of incision, or indirectly injected above the nerve at the base of the finger.

Cocaine, directly injected, retards, to a slight degree, union and repair. It is, therefore, better to employ, when possible, the indirect method, although this requires a little longer time to secure the anesthesia, and usually more of the cocaine solution.

The syringe, including the needle, should be surgically clean, the latter of the smallest size, the quantity of cocaine measured accurately, and the screw, now adjusted to all the better syringes, screwed down to prevent the accidental injection of too large an amount.

For this method it is best not to Esmarch the finger, but to use constriction by means of a piece of rubber tubing around the digit, or its junction with the hand. Just before applying the rubber, every particle of air being forced out of the syringe, the point of the needle is thrust through the skin on the lateral aspect of the dorsum of the finger, about an inch from and on the distal side of the ligature.

About two minims of the solution are injected, the needle pushed about one-fourth of an inch further, two minims more forced out, and so on, until the point rests just beneath the skin upon the palmar aspect of the digit, when a large quantity is injected. In this way one-half of the finger is injected, and this operation is immediately repeated upon the other half, the entire procedure not occupying more than thirty seconds. The tourniquet is at once tightened, and the cocaine solution is thus held at a standstill for absorption.

The process may be hastened by massage over the injected area. In about two minutes insensibility should supervene. Should the anesthesia not be satisfactory, the injection may be repeated. I have usually found fifteen minims to be sufficient, but thirty may thus be employed without risk. The operation finished, the most important part of the technique presents itself, viz., the elimination of the cocaine.

If the constriction were suddenly and finally removed, the excess of solution would be swept at once into the circulation, and would endanger the comfort, and, perhaps, the life, of the patient. It should, therefore, be let in in small quantities. Loosening the band for a minute, the circulation is restored, and, under sublimate solution, the wound bleeds freely, thus giving escape to whatever of the solution the arterioles have absorbed. A certain proportion is carried into the general circulation. The rubber is again tightened for two or three minutes, and during this time the sutures are inserted, and the dressing applied. Alternate loosening and tightening the tourniquet, and the small quantity of the solution is admitted toward the heart and nerve centres, which are thus gradually accustomed to its presence, whereas they might have been overwhelmed if the entire excess had been at once swept into the circulation. In the direct method the solution is thrown exactly into the proposed line of incision.

The advantages are: (1) The rapidity of the anesthesia (practically instantaneous); (2) the small quantity of cocaine applied; (3) the escape of a good part of the solution injected.

I prefer this procedure in incising felons, removing ingrowing or diseased nails, foreign bodies, etc.

In case of incisions going deeply, as in the extirpation of tumors, it is advisable to penetrate into the deeper tissues, and surround them with a weak cocaine atmosphere. To obtain anesthesia in stretching the sphincter ani, place a tampon saturated with cocaine solution in the rectum, and, puncturing close to the mucous membrane, deep enough to be sure that the upper fibres will be reached, inject in six different places.

In genito-urinary surgery cocaine has been extremely useful; strictures, regardless of their location, may be divided without pain, two drams of a two per cent. solution being injected with the ordinary



urethral syringe. In searching for stone, catheterization cystoscopy, it has been of great value to both patient and operator. In circumcision in the adult, it answers perfectly. A rubber tube constricts the penis at the pubes; the parts having been cleansed, the prepuce is put on the stretch, and the needle passed in at the free border in the middle line. The point of the needle is passed back as far as the line of incision. From this one insertion of the needle, by withdrawing the needle slightly and passing the point forward to a different point in the line of the proposed incision, the incision can be made, absolutely without pain. The frenum usually requires a little special attention.

Tenotomy for wryneck and other deformities, operations for inflamed bursæ tapping, operations for small hemorrhoids, single and superficial fistulæ, fissure, and ulceration of anus and rectum are satisfactorily performed.

Among the larger operations reported as done under cocaine are amputation through the thigh, one per cent. solution being used in the skin, and a one-half per cent. solution in the deeper parts; only while the bone was being severed did the patient complain of pain.

T. H. Manley removed the entire breast for epithelioma painlessly with the aid of cocaine. The same writer says, in his work on hernia: "Cocaine is of priceless value in operations for strangulation." "In strangulated hernia, its use should wholly supplant pulmonary anesthetics."

"There are, many times, patients who require abdominal section, yet who are in such physical condition as to almost absolutely prohibit the administration of chloroform or ether, yet the operation may be done without hesitation under cocaine."

"Besides the fact that the primary depressant effect of the general anesthetic was avoided by the use of cocaine, there are two other points of much importance in this case—the absence of the vomiting that nearly always follows chloroform or ether, and the absence of shock—the last particularly important where one is called upon to operate for stab, gunshot, or other abdominal injury."

Dr. Lanphear, speaking of his experience with cocaine anesthetics in abdominal section, says:

"A typical operation, such as the removal of enlarged glands, operations for varicocele, external urethrotomy, cystotomy, hernia, other than strangulated, ought to be considered beyond the domain of cocaine surgery."

The effect of cocaine upon the eye is too well known to warrant any extended remarks here; but I will venture a brief reminder that cocaine powerfully influences the corneal nutrition, sometimes causing wrinkling and drying of its epithelium, and this in direct proportion to its strength, and that the corneal opacity which occasionally follows cataract extractions

and other operations, sometimes so great as to destroy the effects of the operation upon visual acuity, has been proven to be due to the fact that solutions of corrosive sublimate were used to cleanse the conjunctiva prior to the operation, the cornea having been anesthetized with cocaine.

A single reference to its use in connection with diseases of the ear. In pain from inflammation of the middle ear cocaine not only relieves the pain, but constitutes one of the successful forms of abortive treatment.

In using cocaine in the nares, either for its anesthetic effect, prior to some operative procedure, or to bring about a shrinking of swollen mucous membrane, that the cavities may be successfully examined, it is wise to apply the cocaine solution directly to the enlarged turbinated bones by means of a swab, as spraying of the usual cavities with a strong solution is almost certain to develop toxic symptoms. In bloodless operations, such as sphincter stretching, a smaller amount is tolerated than in an operation where free bleeding would favor the escape of a large amount of the cocaine injected.

From this imperfect retrospect, the important place occupied by cocaine as an anesthetic is apparent ; and we may reasonably expect that as the action of the drug is more generally understood, and the best means of meeting the toxic symptoms appreciated, death from cocaine employed as an anesthetic will become one of the rarest of accidents.

## TWO OBSCURE CASES IN ABDOMINAL SURGERY.\*

BY WM. OLDRIGHT, M.A., M.D.,

Professor of Hygiene in the University of Toronto; Surgeon to St. Michael's Hospital, Toronto.

CASE I. A. M. W., æt. 23, married, nullipara, consulted me on the 13th September, 1893, bringing a letter from Dr. Christoe, of Flesherton, the following extracts from which letter give a fair history of the case and the conflicting points in diagnosis :

"The patient is one of a family of many children, all healthy. She, several years ago, say five, came under observation with reference to the *catamenia*, and went under treatment, with no good results. A good deal of enlargement of the abdomen existed. She was pale and weak, and continued more or less so for a year or two, when an improvement took place. . . . About a year ago she married—a little less—and soon thereafter she noticed the abdomen enlarging; two months ago my attention was called to her, and I noticed the enlargement. . . . On Saturday last I again examined her; found, as I thought, the uterus elongated somewhat, with a much changed os, as though the tumor occupied the uterus, and was gradually obliterating the neck, as in pregnancy.

. . . Then, as to its being ovarian, it occupied the central portion of the abdomen, was soft in its nature, and distinct fluctuation was manifested in different positions; the tumor retained its shape and position, so that ascites was precluded. All these things put together is confusing."

I made an external examination of the abdomen, and found a tumor occupying the position of the gravid uterus, perfectly symmetrical, and extending upwards to the umbilicus. The absence of subjective and all other objective signs of pregnancy agreed with the history in excluding this condition. I directed the patient to secure free evacuation of the bowels by castor oil and enemata, called at her hotel on the following day and examined her more fully. The result of my examination I may sum up in my remark to Dr. Temple when arranging a further consultation with him, that "the tumor feels to me like an infantile uterus implanted on

\*A paper read before the Toronto Medical Society.

the posterior surface of an ovarian or par-ovarian cyst, bound down in a central position, but I cannot feel positive."

There was to be felt a pyriform body, in size and position resembling the os and neck of the normal uterus, but its upper border did not merge into the portion of the tumor above with quite the same feeling of a continuous, firm uterine wall. The tumor was tense and elastic, and a portion of it could be felt bulging into the anterior fossa, anterior to, and slightly below, the os uteri. The sound could only be introduced about  $1\frac{1}{2}$  inches, the direction being upward and slightly forward. In the subsequent consultation with Dr. Temple, the possibility of retained menses was considered, and it was thought that an explanation of the peculiarities above mentioned in the larger portion of the tumor, and its relations to the small pyriform body, might be found in the thinning and degeneration of the walls of the uterus. It will be remembered that enlargement, with fluctuating dimensions (slight decrease and increase), had existed for five years, and that the patient had never menstruated. Accordingly, it was decided, before resorting to other measures, to anesthetize her, and, under strict aseptic and antiseptic precautions, to dilate and further explore the cervical canal. This was done on her return to the city a few days later; but, after using as much force as we considered justifiable, we failed to liberate any fluid, and determined to resort to abdominal section. As the patient had taken chloroform badly, and was very weak, we decided to postpone the section for a few days, employing the usual antiseptic dressings in the meantime. Distressing and persistent vomiting occurred for a day or two, as the result of the administration of chloroform.

Six days later, the patient was placed under the influence of sulphuric ether, and I made an abdominal section in the median line, being assisted, as in the previous operation, by Drs. J. A. and Chas. Temple and Dr. H. H. Oldright. The peritoneum was much thickened, and, after dividing it, as we supposed, it was found to be adherent to the tumor beneath. I endeavored to pass my fingers down to the neck of the uterus, breaking down the adhesions before them. I succeeded in reaching a point which I ascertained, by bimanual examination, to be about  $1\frac{1}{2}$  inches from the outer edge of the neck. Having introduced a catheter into the bladder, I found its upper border was glued by adhesions so high up that I could not extend the abdominal incision, so as to exactly reach the margin of the neck with my finger; but, having got within  $1\frac{1}{2}$  inches, and still finding adhesions beyond, I felt that it would be safe to pass a good-sized aspirating needle per vaginam into the pendent portion of the tumor close to the neck; that there would be no danger of escape of fluid into the peritoneal cavity in so doing. The fluid which escaped was of a dirty straw color. I with-

drew enough only of the fluid to enable us to pinch up a portion of the wall of the cyst. This was thin and translucent, and had the appearance of an additional layer of thickened peritoneum. I opened cautiously, and found that the inner surface was that of a serous membrane, and that we had a case of encysted peritonitis. Having emptied the sac, I introduced a small electric lamp, and at the bottom of the cavity could be seen the anterior surface of a uterus about  $1\frac{1}{2}$  inches long, and two little ovaries about the size of small white beans. All the other viscera were shut off from the cyst. Hemorrhage having been controlled, and the cavity and interspace which I had formed by separating the two layers of peritoneum having been washed out with a weak bichloride solution, the usual toilet was made, a glass tube being left in the last-named interspace; there being no accumulation of fluid in the tube, this was withdrawn in two hours. The progress to recovery was uneventful, except that it is worthy of note that the patient suffered very little from nausea, in comparison with the persistent vomiting and prostration which followed the chloroform. Although persons are usually much more nauseated by ether than by chloroform, we occasionally find the reverse, and with persons who have so suffered after chloroform it is worth while, on a second occasion, to try ether. I may remind the president of a case of this kind in which he administered chloroform and ether for me in two successive operations on the same patient, the chloroform producing persistent vomiting, and the ether not doing so.

I should have stated that in all other respects, except those indicated, the patient was well developed (mammæ, etc.).

Diagnosis often seems easy when looking back upon it, but it is often so perplexing whilst arriving at it that I thought our difficulties might be of interest and service to some, at least; and I may add that, as an old student, I would be glad to profit by the difficulties and experiences of others. It seems to me a very strange coincidence that the other peculiarities of this case should have been complicated and obscured by an old peritonitis so subacute as not to have come under medical observation or report, and giving adhesions and effusion of such a character as to form a central and symmetrical tumor planted on an infantile uterus. I have met with and diagnosed infantile uterus before, but never with the peculiar combinations above reported.

The patient returned to see me a short time ago, and I find that the bladder is permanently glued, as it was then, to the abdominal wall within three or four inches of the umbilicus. The statement of this fact emphasizes the necessity of careful exploration of the abdominal viscera before performing paracentesis.

There has been no return of effusion, and the patient is in the enjoyment of good health and spirits.

CASE 2. Miss. D., æt. 58, spinster. This patient was under the successive care of Dr. McMahon and Dr. McKenna, at St. Michael's Hospital. She had occasionally vomited bile, was feeble and emaciated. I first saw her in consultation, at the request of Dr. McKenna, ten days before her death. On grasping the abdomen between the ribs and ilium on the right side, the fingers on the posterior abdominal wall, and the thumb shoved well over on the anterior wall, a tumor could be grasped; by carrying the lower abdominal wall well up, then grasping the tumor, and drawing the hand downwards, one could make the tumor slide upwards out of the grip of the hand. Above the tumor, and between it and the bulk of the liver, was a neck, or depression. I think the opinion of those of us who saw her was towards a distended gall bladder and biliary calculi with septic complication. As the symptoms pointed to formation of pus, and during the ensuing week the temperature chart showed the sharp fluctuations characteristic of that condition, an exploratory section was determined upon. On the day of the operation the temperature was 105° F., and the pulse rapid and feeble. Whilst the prognosis was very bad, it was felt that operation presented a possibility of improvement. It was done with the assistance of Drs. Nevitt, E. E. King, McKenna, and McKeown, Dr. Garratt administering the anesthetic. The section was made in the long axis of the gall bladder. This was opened at its fundus, and five medium-sized calculi and a dozen or more small ones were removed. Some of them I have with me. One calculus was impacted in the cystic duct. I broke it up, and passed the pieces on into the duodenum, following them by a probe with an extra large head to test the sufficient patency of the duct. This being satisfactory, and the bladder and ducts being searched in vain for any septic condition, the gall bladder was closed by Lembert sutures. Drs. Nevitt and King, as well as myself, passed our fingers over both surfaces of the liver, and in all directions in the vicinity, and could not find the pus. The patient died about twenty-four hours after the operation.

At the *post-mortem* examination made by Dr. Dwyer, three abscesses were found in the substance of the liver, high up in the right lobe, towards the upper, posterior portion of it.

I may add that, among the surmises before operation, Drs. Dwyer and McKeown suggested the possible co-existence of a floating kidney; and this co-existence was verified during the operation.

## A CONFUSED CASE OF ETHICS.

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BY EZRA H. STAFFORD, M.B.

TORONTO.

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THE history of Christian Science has been short, but it has been remarkable. Goldwin Smith had, for the moment, lost this movement from mind when he wrote: "It is in Quebec alone, on the western continent, that miracles are still performed. The shrine of Ste. Anne de Beaupré is thronged with pilgrims, and thickly hung with votive offerings, though her cures are confined to ailments of a certain class, chiefly nervous, and she has not restored a limb, or healed anybody of cancer."

The Christian Science doctors (C.S.D. is what they sign to their names) perform similar miracles, in cases of similar disease, by working upon the mind in a similar manner. Their methods are about the same as the saint's, but are adapted to a less grossly superstitious people than the French-Canadians. The principles of both are identical, and, in cases of semi-imaginary disease, or of those arising from a morbid state of the nervous system, or a mind disordered by idleness and the unwise reading of popular medical literature, there is no doubt but that the "laying on of hands" and "anointing with oil," and all the other stage effects of Christian Science, will prove efficacious to a marked degree.

Nor is this a narrow province either, but a field of disease so large that an independent school of healing might certainly find plenty of scope for their professional efforts in it alone, without going into other matters—to such a remarkable extent does medieval tradition still obtain in the popular mind. Unfortunately, however, they do not confine themselves to this specialty, nor even to medicine as a whole, but, banding themselves together into a religious sect, try to live up to certain vague rules, deduced from phrases which occur in the New Testament.

The great risk run by the patient who calls in a group of these transcendentalists to treat a case, where the chief desideratum is an ordinary knowledge of anatomy and a little of the common sense of antiseptic surgery, will, perhaps, be best shown in an account of a special case which came lately under the writer's notice; and the corollary drawn from a study of such a case will point, I think, to the exclusion of Christian Science from the treatment of distempers, where their particular methods will plainly be of no avail.

The case I refer to was one of obstetrics, and a burly nurse, accustomed to the wholesome routine of the physicians of the old school, was engaged for the patient at the time of her lying-in, no attention having been paid to the doctrines which were entertained by this estimable, strong-minded woman—an oversight afterwards probably regretted, for she proved a disturbing element in the subsequent plan of treatment adopted by the Christian Scientists, into whose line of thinking the patient, and, after her, her husband, had been only recently drawn.

With regard to parturition, there is an idea held by those who practise Christian Science that it is, when normal, a phenomenon unaccompanied by pain. The abnormal conditions which they generally endeavor to counteract are not physiological, but psychological ones. Practitioner and patient accomplish this end, jointly, by mentally asserting, with endless iteration, that there is no pain—or that there is no this, or that, or whatever manifests itself in the focus of the patient's field of sensation. Upon the hypothesis that subjective sensation is itself abnormal, when it is of a sort repugnant to the mind of the patient they endeavor, by magnetism and hard thinking, to expel all such sensations from the mind. When this treatment is successful, labor is painless.

In this particular case the Christian Scientists (some three or four in number, male and female, for they do not work singly) were doing very creditably, and had reached a laudable state of absolute certainty that the patient was quite free, as yet, from that absurd superstition, known in the earlier annals of moral evolution as pain.

The patient unluckily met with a lesser degree of success, and, though she admitted to herself that the bearing-down pains were only an illusion, she found it such an illusion as caused her to groan audibly.

Knowing nothing of such superfluous details as pelvic anatomy, or the physiology of labor, the medical attendants had probably never heard of breech presentation either. A rather facile way of getting over certain facts is to refuse to admit that they exist, and in this rhetorical accomplishment the school in question is pre-eminent.

The nurse did not, however, regard the appearance of a foot in the vulva from the illusory standpoint, and, after some hours, perceiving that the child would probably be stillborn, she became insubordinate, and broke in upon the council of laborious pensiveness for the third time, with the demand that something practical be done. Some further remarks of a personal nature, touching a "dry birth" which she had herself experienced early in life, and with which painful reminiscence she was wont to encourage those of her patients who became discouraged with their own trouble; indeed, all of them, whether they became discouraged or not, were, however, interrupted with curt inappreciation by her present listeners,



who cautioned her to remain calm, adding that if anything did go amiss she would certainly be to blame, owing to her disquieting influence, which served to agitate the undisciplined patient, who, they grieved to find, was prone to lay too much stress upon mere subjective shadows.

Enraged beyond expression at this, the honest nurse, continuing in her insubordination, sent out secretly, upon her own responsibility, and called in the nearest regular physician for revenge.

The cervix, being well dilated by the time I arrived, I had no very great difficulty in facilitating a delivery by forceps, the child being still-born from long pressure upon the cord, and hydrocephalic to a considerable degree.

The nurse, who ushered me into the house, had said nothing to me about the condition of things, and I could scarcely understand at the time the noises of a frightful dispute which was going on in the next room, where the highly-incensed Christian Scientists, having awakened the husband from sleep, were pushing him about from hand to hand, in an endeavor to work him up to the point of entering the lying-in chamber, where I was, and forcibly driving me out of the house.

At this time a faint smell of carboic acid reached their nostrils, and intoxicated them with anger at the thought of such heinous pollution. One spying in at the door also saw me administer some morphine hypodermically, and this further profanation still more heated the feeling against me.

But at this juncture the nurse, who had her natural enemies now somewhat at a disadvantage, picked up the sad cause of all the trouble, and going out among them with it limply in her hands, like a fetish, or a protest against them, produced a dampening effect upon them, which, perhaps, would not have been so marked had the child been born normal.

Observing these things, the blinking parent asked a few words with me; but, being much bewildered, both for lack of sleep and also from the violent concussion of innumerable words upon the yielding material of his brain, he faltered incoherently, and would speak of nothing but of a "V," about which he had a good deal to say.

Naturally thinking that he was dwelling with pathetic promptness upon the question of remuneration, I corrected the "V" idea, with a delicate "X" impression, bordering on vagueness. I was soon to learn, however, that, being a driver upon a regular route, going twice a day in a certain direction, and returning home at another angle, he really meant his delivery trip by the "V," and that he was asking my advice as to whether he should not informally inter the deceased, without the expense of the usual rites, and clandestinely, as it were, at the remote angle, which was in an unfrequented place. I corrected, as far as I could, so crude an idea of the sanctity of legal burial.

But when I was filling out the death certificate, and came to "Religious Denomination," he, being hard pressed, with the nurse and I upon one side, to whom he lacked strength to acknowledge himself a Christian Scientist, and with they themselves upon the other side, whom he did not dare to affront by calling himself anything else, he very adroitly answered, "Formerly Methodist."

This was an inspiration, but when the nurse, who appeared to be laboring under high pressure, observed this weakness upon his part, she made use of some very penetrating generalities, which displayed a genius (seldom possessed except by women) for that species of invective for which there is no answer. She was accordingly dismissed, with hysterical resentment, on the spot, and retired with a dignity even more impressive than that of the gentleman of the black rod who stands at the door of the House of Commons at Ottawa.

But, to cut short what proved at the time a rather amusing digression, I need not even hint at the utter helplessness of anything but scientific obstetrics in any case where complications arise.

Having observed how loath my colleagues were to use manipulation, I was next to learn, during the patient's puerperal state, that they had as decided objections to medication, deeming the theory of antiseptic treatment as a mere figment of the imagination; for, having given the usual orders, I ascertained, on the third day, when I observed a marked rise of temperature, that these directions had been either countermanded or wilfully neglected.

It was only by attending to these details with my own hands that I was successful in overcoming the alarming symptoms. Prayer, or some weird incantation of cognate significance, was resorted to by the Scientists at the same time, and, of course, the reduction of temperature which ensued was attributed to prayer, just as the rise of temperature had previously, with equal convenience, been attributed to my original use of ergot and the hypodermic injection.

The question remains, What is a conscientious practitioner to do in such an emergency—with a wish to abandon the case—unless the charlatans are dismissed, on one hand, and a feeling of humanity, and a religious belief in carbolic acid, on the other?

Their creed being to copy Christ until His recorded facility in healing is reached, the absurdity of their professional pretensions cannot well be assailed without risking the appearance of blasphemy, which would not be popular. In the meantime, so plausible is all their meaningless twaddle, tagged, as it is, with apt biblical catches, that the whole theory proves irresistible to the ignorant and to the hysterical.

## ACUTE INFLAMMATION OF THE MIDDLE EAR FOLLOWING INFLUENZA.\*

BY DR. BUTLER,  
LONDON.

**A**CUTE inflammation of the middle ear, following influenza, is, to some extent, similar to the same complaint due to other causes; but in some respects it is different.

(1) The onset is more abrupt and violent.

(2) An exudate is poured out more rapidly, and is greater in amount. This exudate, although serous at first, has a greater tendency to become purulent in character.

Scientific observers state that influenza depends upon the presence of a particular micro-organism, and that it has been isolated from the purulent discharge from the middle ear.

This germ is a pus-producer, and the mucous membranes, especially those of the nose, naso-pharynx, and bronchi, often bear the brunt. The roadway from the pharynx to the middle ear is both short and direct, and the lining membrane of the middle ear is a fertile soil for the germ. The left ear is most likely to be affected when the trouble is unilateral, but this holds good in acute cases from other causes. In the influenza cases I think the pain and constitutional disturbance are apt to be more marked, and, probably, perforation of the drumhead is more likely to occur, and also to arise earlier in the process.

*Symptoms.* It is not necessary to say much about the symptoms. A feeling of fullness in the ear is experienced in the mild cases, with almost intolerable pain in the severe ones, particularly where there is a pus formation, and where the mastoid cells are seriously implicated. The pain is not confined to the ear, but radiates over the side and back of the head, down the neck, and to the teeth, and is sometimes so severe as to prevent sleep, or may induce delirium, especially in the case of children.

The temperature is usually elevated, often to 101° or 102°, or even higher.

\* Read before the London Medical Society.

*Tinnitus.* As there is almost invariably a catarrh of the nasal and naso-pharyngeal mucous membranes, with a profuse secretion, and more or less obstruction in the Eustachian tube, the tinnitus in the congestive stage is likely due to retraction of the drumhead.

*Disturbed hearing.* This varies, but is not so great in the congestive stage as it is later, when there is an exudate filling the middle ear.

Upon examination with speculum and reflected light, the appearance varies according to the stage of the trouble. The tympanic membrane is red and congested-looking in the early stage, but later on has a gray and sodden appearance, and, if there is much fluid in the tympanum, will bulge outwards. The greater number of cases treated by me have been seen for the first time after perforation had already taken place. Very often the sodden, ashy-looking, and macerated condition of the parts may reasonably be attributed to the almost endless liquid applications to both the outside and inside of the ear. The ear is a very tempting and convenient hole to fill; so, as a rule, it is filled accordingly.

*Treatment.* If seen early, we should endeavor to prevent perforation of the tympanic membrane if possible; and this will fall to the lot of the general practitioner oftenest. I believe that this is possible in a vast majority of cases if the treatment instituted be proper and prompt.

Where perforation occurs we can never be certain that it will heal readily, or, in fact, will ever be healed.

The patient should be kept quiet, and, in severe cases, put to bed.

Open the bowels; possibly calomel is as suitable as anything. If there is much elevation of temperature, frequent doses of aconite. Politzer states that where there is much secretion in the naso-pharynx drop doses of tr. pulsatilla, alternating with the aconite, is very useful. I have had no experience with the latter.

*Local treatment.* I believe that during the congestive stage in the majority of cases the local abstraction of blood by the application of leeches, or, better still, the scarificator and cupping glass, is the very best treatment. These should be applied in front of the tragus, or should there be evidence of severe mastoid affection, as tenderness, swelling, etc., over this region, they should be applied in this locality.

Many of these patients are anemic, so that there may be some difference of opinion as to the efficacy of blood-letting in this manner.

Avoid poultices and blisters behind the ear. Counter-irritation may be good treatment later on, to assist in clearing up a lingering exudation; but I saw one case in which I believe that periostitis over the mastoid, with a fistulous opening externally, was caused by blistering.

*Pain.* This is what the patient and his friends are most concerned about, and if we cannot succeed in giving relief they will make it

painful for the doctor. In the milder cases the local application of heat to the ear, by means of a bunch of hot cotton, hot bags of salt, or bran will suffice. The middle ear should be rather gently inflated by the Politzer bag. Probably when only the ear is affected, the use of the Eustachian catheter is preferable; but as there is an irritable and inflamed condition of the nasal passages and naso-pharynx, the introduction of the catheter may be disagreeable to the patient. A cocaine spray will relieve this temporarily. In cases where the pain is very intense, it will be necessary to douche the auditory canal with hot water containing boric acid. Phenacetine, or acetanilide, will be useful internally, and in some cases morphia will be indicated. Alkaline sprays to the nasal and pharyngeal membranes are useful in all cases. Avoid quinine. Where the mastoid region is shown to be seriously implicated, some recommend the application of cold in the early stages, while the auditory canal is douched with hot water.

A four-grain solution of atropine, instilled into the auditory canal, is very useful in allaying the pain. A 4 per cent. solution of cocaine is recommended, but I have not found it to be of so much service as atropine.

If, in spite of treatment as already indicated, the exudate is not successfully worked off into the pharynx, through the Eustachian tube, and perforation of the drumhead is imminent, it is better to anticipate it, and make an opening with the knife, or it may be necessary to enlarge a spontaneous rupture, in order to secure proper drainage.

Then gentle inflation should still be kept up, with warm douches, if the discharge be profuse. As the discharge lessens and the pain subsides, the instillation of a simple boric lotion, with an occasional cleansing with warm water, should be substituted for the regular application of the hot douche. Gentle and soothing treatment is the key to the position.

Astringent applications may be required. When the discharge is slight, and, if perforation large, the dry treatment is better. After the perforation has healed, the middle ear should be inflated a few times.

It is important that the general health should be looked after, and many of these patients require tonics for some time. If these cases are seen early, and treatment be both prompt and proper, such disastrous results as mastoid trouble, requiring operative interference, will be rare.

## Selected Articles.

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### THE PROGRESS OF GYNECOLOGICAL SCIENCE IN ENGLAND.

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ADDRESS BY MR. ERNEST HART.

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I HIGHLY appreciate the honor and greatly value the courtesy which your society has extended to me. Although I have absolutely no personal gynecological experience, still I thought possibly some few recollections of the progress of gynecological science in England, with especial reference to the individuals who practise it and the influence on its progress of some of your great American gynecologists, some of whom, from time to time, have not only visited, but have settled in Europe, might be interesting.

I could not but remember, when I got your kind invitation, sir, that I have never, since I became a student of medicine, now exactly forty years ago, studied obstetric medicine, and as I entered surgery as a pure surgeon I have never felt called upon to study it. Such was the state of medical examinations in England that I was never examined in gynecology in any of its branches. The College of Surgeons of England at that day, presided over, as it was, by some of the greatest surgeons of the day—by Lawrence, by Brodie—thought so little of gynecology and obstetrics that it was not thought a necessary part of a surgeon's education. I not only had never delivered a woman, but had never seen an accouchement. That of itself indicates the immense progress which has been made within the course of a comparatively short lifetime. I suppose there is no college in the civilized world now that would think it possible to graduate any man without requiring him to have a knowledge of obstetrics and gynecology.

As I was thinking the matter over this morning, I recalled some interesting facts that have great bearing not only on gynecology, but on the practice of the surgeon. The school I entered was attached to St. George's Hospital, and the head of that school was Samuel Lane, who founded it. He was the first British surgeon to perform ovariectomy. He performed it on a relative, and under peculiar circumstances; that is to

say, at that time to perform an ovariectomy was as much as any man's reputation was worth, and only a very bold, a very daring, and a very conscientious surgeon would have dared to do it. Attached to the same hospital was a lecturer on obstetrics who has a great name in medicine—Robert Lee. He is known throughout the civilized world for his invaluable researches on the nerves of the uterus, and his is one of the greatest names in obstetric anatomy and surgery. Robert Lee was violently opposed to performing ovariectomy. Another surgeon had arisen since Lane's operation. Of course I do not forget that the first ovariectomy was performed by an American practitioner. But about the time Lane performed his first ovariectomy another gentleman began to practise ovariectomy pretty extensively and with extraordinary success, and he was remembered as the real founder of ovariectomy as a surgical procedure. That was Baker Brown, who, with Lane, founded what is known as the St. Mary's Hospital of London. Although Baker Brown performed many ovariectomies with success, so great was the hostility to the operation that I have heard Robert Lee more than once declare publicly that any surgeon who performed ovariectomy with fatal results to the patient, which he thought would inevitably follow, should be accounted an offender against the laws of his country, and that he would, if possible, have an inquest upon every case and endeavor to secure the punishment of the surgeon who performed the operation. That shows the remarkable change of opinion which has occurred in my lifetime. There are other interesting lessons which gynecologists ought also to take to heart. At the time Baker Brown signaled himself for his extraordinary daring, courage, and skill, so that he not only established this operation in his own country, but for the whole world, Nélaton, the great French surgeon, came over to England to learn ovariectomy from Baker Brown; for up to that date the operation had proved so fatal in Paris that not even Nélaton dared to perform it there. But at that time all French surgery was fatal, and even murderous, because it was unclean. This was explained by Virchow, in the Academy of Medicine, by declaring that there was something in French flesh which prevented ovariectomy from succeeding. Nélaton, however, who was very English in his sympathies, was led to think that probably there was something in the air of Paris which prevented its success, and the first ovariectomy Nélaton did after seeing Baker Brown operate was performed in a house outside of Paris that he took for the purpose.

Baker Brown, then, deserves to be remembered always as the real founder of ovariectomy. His is a very instructive case, because he was charged with reporting from time to time his favorable cases, but not reporting fully his unfavorable cases; at any rate, his reports came to be very much doubted. His career closed, as we know, under the most

painful cloud, and it is very doubtful whether that operation would ever have been established in England but that a surgeon of high character, great integrity, and extraordinary candor took up the operation, admitted all of its defects, published all of his difficulties, reported all of his failures, and by his transparent honesty, candor, and courage, not less, and perhaps even more, than by his great operative skill, established ovariectomy on a basis which has never since been shaken, and which is now universal throughout the world. I mean Spencer Wells. Spencer Wells and Keith, the two great English ovariectomists, have distinguished themselves by this, that they have invariably reported every one of their difficulties, every one of their failures, and that no one ever suspects them of any exaggeration or omission. And I want to emphasize, in passing, the extreme importance of that for all gynecological procedures.

I have also seen other interesting phases which might easily escape the memory, but one remembers the amount of progress of gynecology and the remarkable way in which it has influenced favorably the whole progress of surgery. I remember, when I began the study of medicine, Henry Bennett, who died only two years since, came fresh from the Paris schools and brought over the speculum, which had first been introduced at the Hôpital Saint-Lazar. And the same opposition was raised to the use of the speculum. It was denounced as an instrument unfit for use with modest and respectable women, and only suitable for that class of women who were found at the Hôpital Saint-Lazar. It was called a foul instrument, which no decent Englishman would permit himself to use, and to which no decent woman ought to subject herself. There, again, courage and character triumphed, and, by a rather interesting concordance of circumstances, it happened that they were accidentally placed in a position in which they could make a great impression. Henry Bennett, Tyler Smith, and Robert Barnes were all three in succession sub-editors on the staff of a great paper, and therefore they were able to carry on a very violent contest with great advantage; and the introduction of the speculum from that date has spread with great rapidity, and you know better than I can tell you how vital and of what primary importance it is in all of your procedures.

Then I remember when a great American gynecologist made his appearance in my country, and I had the happiness of offering him hospitality for several months. That was Marion Sims, who had to leave New York on account of his Southern proclivities, and he thought it well to go over to Europe until matters were settled. Marion Sims introduced new methods and a new and vastly improved form of speculum, a new method of dealing with vesico-vaginal fistula, and the wire suture,



the precursor of the antiseptic method. And again I recognize in Marion Sims a peculiar path-breaking obstetrician and gynecologist, who created a new path for himself and all who came after him, which has never been closed, and never can be. And why? Not because his skill was so great, but because every method Marion Sims introduced was characterized by the pure honesty of the man. He found that the operation for vesico-vaginal fistula had not succeeded because men had been fooling in the dark; they had not had the courage to bring the parts quite down to the light, and had never had the candor to acknowledge that they had not completed their operations thoroughly. His method was one which, when once known, any child might have invented. These are all historic men and instances, and I do not believe have ever been mentioned before. I remember when Sims went over to Paris. The great operator there on vesico-vaginal fistula was Elembro. Sims did not speak French, and Elembro did not speak English, so it was a matter of sight. Sims said: "I can't talk to him." I said: "No matter; get some one to ask him to show you his cured cases." He hunted for six weeks, but could not find one cured case. He was a great man. He described his method, did his operations, and I have no doubt made a certain number of cures, but he did not describe fully all the difficulties, the repetitions, the little failures; and there was where Sims made his immense success and broke a fresh path for gynecologists, and that, I think, will always remain to the honor of American gynecology.

Then I remember Sims making in my journal a suggestion which at that time seemed preposterous, but such has been the influence of gynecologists that laparotomists now do a hundred things which twenty years ago would have been thought criminal. But it was Marion Sims who first, in the *British Medical Journal*, suggested and described cystotomy for gallstones, which he did, and for the first time. The second suggestion was an operation which he had not done, but described and recommended: it was incision of the abdominal walls and searching out the intestines for gunshot wounds. I remember talking about this to a great surgeon, who said it was fantasy, a wild imagining. But that operation is now done throughout the world, and is one a great Chicago surgeon has done much to improve and complete.

Finally, I would mention another thing which the gynecologist has done for us in Great Britain. He has broken down the absurd barrier which existed until very lately, and in the minds of conservative physicians still exists, and which divides the practice of medicine from the practice of surgery. Any Fellow of the College of Physicians of London who would soil his hands with the knife would have committed a most serious offence against the dignity of the profession; the knife was for

the surgeon, and medicine for the physician. But the gynecologists rebelled, and Tyler Smith and Robert Barnes, both Fellows of the College of Physicians, insisted that, being obstetrical physicians, they had a right to practise the full range of gynecology, and they claimed and have won for physicians throughout England the use of the knife. American gynecologists and laparotomists have for many years taken the most advanced position in the ranks of the surgeons and physicians of the world, and we shall always look with the greatest interest on everything that comes from this side ; but still there remains the suspicion that men are too much disposed to describe the most favorable results of their operations, and do not enter into the public confessional sufficiently in respect to their failures and difficulties. This does not by any means apply only to the gynecologists of America, but certainly this suspicion exists in my own country and elsewhere.

I mention these things to show how much has been achieved by American and British gynecologists in surgery, and the enormous force of candor as well as capacity and of courage in self-confession as well as of courage in operating.—*American Journal of Obstetrics.*

## IODIDE OF LIME IN CROUP.

BY V. E. LAWRENCE, M.D.,

HALSTEAD, KANSAS.

FOR many years I have been a careful reader of the medical journals, and have obtained from them so many valuable suggestions, and have derived so much information from them not to be found in even the most voluminous text-books, that I feel indebted to them; so that whenever I come into possession of medical knowledge which is valuable to the medical practitioner, I regard it my duty to give the information through the medical journals.

Some months ago, through an article written by Dr. A. G. Beebe, of Chicago, on the use of iodide of lime in membranous croup, I became aware of the fact that probably in this drug had been discovered what I had for ten years sought, namely, a remedy which could be relied upon in the treatment of this most dreadful enemy of childhood.

I asked my wholesale house to send to me one ounce of the remedy, and received in return a white or yellowish salt, marked iodide of calcium, As the U.S. Dispensary makes no distinction between the iodide of calcium and the iodide of lime, I put the drug aside, thinking I had the article referred to by Dr. Beebe.

Soon after, a boy, eighteen months old, showing all the symptoms of membranous croup, fell into my hands. I prescribed the remedy, and after a hard fight for four or five nights he recovered. But his breathing was noisy and labored, and it was necessary to call to my assistance the steam bath, and to administer every three hours five-drop doses of the fluid extract of quebracho, a drug which possesses the unique power of enabling the red corpuscles to assimilate a larger quantity of oxygen from the same amount of air. By its use the dusky hue of the skin was changed to a more ruddy color, and the heart also strengthened. This is a most valuable remedy in all respiratory diseases, and is worthy of a larger recognition than it now enjoys.

I then wrote Dr. Beebe for additional information regarding his remedy, and, in reply, he informed me that he used a dark-colored drug called the

iodide of lime, and not the white or yellowish salt called iodide of calcium. He also gave me the address of the manufacturers, a well-known firm in Boston, Mass., to whom I immediately sent fifty cents, and received by mail one ounce of the iodide of lime, with instructions to protect it from the light.

I have used the drug in two cases since. In both an easy and speedy recovery took place, and without the hard fight had on the first case, in which the iodide of calcium was used.

Dr. Beebe advised that ten grains be dissolved in four ounces of water, and that one or two teaspoonfuls be given every fifteen, thirty, to sixty minutes, according to the severity of the symptoms, until the dry, croupy cough merges into the moist cough, and until all danger of its return at night has passed, when some other suitable remedy may be used. Dr. Beebe writes that he has used the remedy for twenty years in a pretty large city practice without the loss of a single patient, and he has come to look upon the disease as one to smile at, but not to be afraid of. I used the drug as suggested by Dr. Beebe, with the above happy and unusual results.

Some time ago I wrote an article regarding the remedy, and since its publication have received so many letters from physicians over all the United States, asking where the drug can be had, that I have concluded to reproduce the article, in the hope that it may be the means of removing from the homes of the people the terrible anguish experienced in seeing their little ones going down to the grave in the embrace of this unrelenting enemy of childhood.—*Brooklyn Medical Journal*.

# Clinical Notes.

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## RUPTURE OF THE HEART.\*

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BY F. P. DRAKE, M.D.,  
LONDON.

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I WISH, this evening, to give you a few notes on a case that presents to me considerable interest, and, while it may not be of much practical value to any one, it will, I think, at least serve to demonstrate a few exceptional points as to the exact diagnosis of all forms of heart lesions, and may serve to put us on our guard when asked to give a decided opinion upon this particular organ.

This patient, aged thirty-five years, had a good family history, free from any local or constitutional disease, either hereditary or acquired, of exceptionally fine physique, 5 feet 11 inches in height, and weighed, on an average, 185 pounds; never had any severe illness or injury of any description, and had always given a great amount of time to physical training, and was exceptionally fond of outdoor exercises and sports.

On the 10th day of August last he was playing in a game of cricket at Toronto, feeling in the best of health. The day being warm, and he having to do a great amount of running between wickets—being in when over 100 runs were being made, and some of these forced runs—when, after one of the latter, he complained, as he said, “of a slight pain in his chest,” which proved of only short duration. He finished his game, felt well afterwards, and rested well that night. On the following day, while playing in another match, bowling most effectually and hard, the ground being wet from the morning’s rain, he again felt a return of this pain, only more severe. He bowled one or two more balls, and, when it again came his turn to bowl, felt weak and asked for whiskey, and before bowling each ball took a drink from the flask, and, on the completion of his over, gave up, feeling very much distressed, the pain extending over the chest, and more severe. He laid down on the damp ground for a few minutes,

\* Read before the London Medical Society.

when he was persuaded to go to his hotel, where he was seen by two physicians. His pulse was rapid and weak, the heart's action labored, prostration great, and the pain now extending over the chest and down the arms. Digitalis and brandy were freely given. He was removed from his bed to a train by a cab, and on reaching London the pain in localities named was most excessive, but the pulse and breathing became more regular and natural. He walked from the cab into his house, and, after a hypodermic injection of morphine, passed a very fair night. On the morning of the 12th the pain was slight, not localized, but extending over the chest, down both arms, and between the shoulders; pulse better, no dyspnea, no irregular pyrexia. Remained comfortable for several days, during which time physical examination of the heart was negative. The sounds were clear, not associated with murmurs; no friction sound.

This was followed in several days by paroxysms of pain, extending, and more severe, down both arms, after a comfortable night, and up to three or four o'clock p.m.; then followed by pains lasting from half an hour to two or three hours, usually relieved by heat and hypodermic injections of morphia. In addition, there were pains in the hips, abdominal muscles, and right gluteal region, of an intense character. About the tenth day all pain ceased, leaving him comfortable, though weak. He said he felt much better, and, to all appearances, on a good road to recovery, when, without any premonitory symptoms, phlebitis in both legs developed, abscess threatened in the calf of the left leg, also indications of the same complication in both arms. This unfortunate condition lasted about five weeks, during which time very little constitutional disturbance showed itself. There were no symptoms of thoracic trouble during this complication; the pulse remained good, and he made a good recovery.

He went to his office for the following four weeks, then took a trip through New York State, combining light business with pleasure, being absent about six weeks. When at his office, and while away from the city, he was not able to take active exercise, on account of soreness in his legs, and was cautioned not to do so, or to lift or strain himself in any way, as from the beginning, aneurism of aorta or some of the large vessels was feared, but after a careful examination by four physicians no definite symptoms presented themselves to warrant such a diagnosis.

During his absence from the city he felt well and looked well up to last week, when he took an attack of influenza, with severe bronchial symptoms—cough was violent—from which he recovered perfectly.

On Sunday, five weeks before the time of his death, he went to dine at his brother's, feeling well, as he said, in every way. While there he was compelled to lift his brother, who weighs about 200 lbs., from his bath, he (his brother) being found insensible in the bath. The lifting of a limp

person of this weight, slippery from the water, during the consequent excitement, you can easily imagine, meant a great strain, although, when seen an hour after, he made no complaint. He had no precordial pain, nor did he, at any time during his last illness, complain again, except during the week previous to his death. On the Tuesday following the lifting, he had a slight attack of vomiting, following the taking of a quantity of ice-cold, badly-cooked gelatine, and did not feel so well during the day, and in the evening he had a chill, unaccompanied by any coldness of the extremities or any premonitions of a chill. Pulse full and regular; no pain. The vomiting continued almost uninterruptedly for four days, a great amount of mucus coming up, the vomiting being associated with these peculiar nervous rigors or chills at intervals from three to six hours; afterwards vomiting and chills at intervals of from eight to ten hours, then by degrees, from four to five days apart; rarely followed by any elevation of temperature, and only on one occasion was it at all high, namely,  $102^{\circ}$ . The vomiting was diagnosed as catarrh of the stomach, the chills, which sometimes lasted for an hour, much resembling the nervous disturbance one so often sees at the bedside after a case of confinement. Between attacks of vomiting he felt well, and ate all bland and easily assimilated articles of diet. Much improved during last week, but gained strength slowly, when suddenly the old pain in chest, down the arms, and between the shoulders showed itself, not lasting over an hour, nor excessive at any time; pulse became gradually more rapid, some loss of volume, but not more than could be expected from one passing through this amount of sickness; heart sounds, natural; tongue, clean; urine, normal. On the morning of January 2nd, five months, less seven days, from time of injury, felt well, pulse no weaker than during previous week, no dyspnea, but towards middle of day noticed severe pain on right side of neck. At about 4 p.m., a severe chill, with substernal pain. At 7 p.m., pain continuing, and sense of anguish and suffocation, countenance anxious, face pale, heart sounds regular, but muffled and weak, complained of eructations of gas. Bismuth and soda were given, with rapid stimulation. Patient perfectly rational; took fairly good nourishment at 6 p.m., and enjoyed it; at 9.30 suddenly gasped, and expired.

The *post mortem* revealed a ruptured heart—the lower anterior surface of the left ventricle close to apex. The pericardium contained a large clot. Over anterior surface of this organ the pericardium was adherent, the adhesions extending from over the point of rupture to two-thirds up the anterior surface of the organ, although when pericardium was opened only traces of broken adhesions over seat of rupture presented themselves, no doubt being torn away at some subsequent period. Heart, somewhat larger than natural, but not fatty. Valves, normal and healthy. The larger

vessels leading from and surrounding the heart, normal. The lungs almost abnormally small, although healthy. The liver very much enlarged, but not diseased. The kidneys and abdominal viscera, normal.

Such is the beginning and end of a case, the small details of which I hope have not been wearisome to you. To what cause this rare and interesting pathological condition owes its origin, it is very hard to determine. In this case an almost perfectly modelled man is the victim. Spontaneous ruptures, in contradistinction to rupture from external injuries, are nearly always the result of a strain, or of pressure acting from within upon the muscular walls, and we know that such lesions take place usually under one of the following conditions, viz., fatty degeneration of the muscles, and softening in consequence of embolism of the coronary arteries, suppurative myocarditis and gummatous growths ; and Fagge mentions several instances in which no such changes have been detected.

A microscopic examination fails to reveal anything except small cell infiltration as a result of subacute inflammation set up ; and inspection shows, no doubt, an internal incomplete rupture where the muscular fibres have been torn apart, layer by layer successively.

Nature came to the rescue almost immediately ; the walls of the pericardium, being glued over the seat of the rupture, served to thicken and strengthen this part, and in this case to prolong life for a most remarkable length of time. Osler quotes a case as living eleven days ; Fagge, one of nine days ; but I have not been able to find any authority where life has been prolonged from the onset of the symptoms, as this case, I think, clearly shows, viz., one hundred and forty-five days ; and had it not been for the unfortunate lifting and excitement at the time which I have mentioned, three weeks previous to death, I think I am within the bounds of possibility in expecting life to have been prolonged to a still greater number of days. The influence of age in relation to rupture of the heart can be distinctly traced. In one hundred cases, as quoted by Quain, two-thirds of the patients were over sixty years, and only three between thirty and forty years. The age of this patient was thirty-five. In the hundred cases noted, fatty degeneration was the cause of rupture in seventy-seven. In seventy-six out of the hundred to which I have alluded, the left ventricle was the seat of rupture, and in forty-three of these the lesion was in the anterior wall. The right ventricle was found ruptured thirteen times ; the right auricle, seven times ; the left auricle, twice ; and a rupture was found in the septum four times. These results correspond remarkably with those of other writers on the subject. In the case which I have mentioned to-night, the lesion was in the anterior wall of the left ventricle.

The almost complete absence of symptoms of endocardial or myocardial disturbance during the first stage of the injury is also a rarity, but, I



think, only strengthens the theory of a gradual rupture. A subacute inflammatory action must have been going on. Dr. Moore, who watched the case most carefully, found little or no elevation of temperature during the first few weeks, no presence of a murmur at one or other of the cardiac areas, the beats not accelerated, the sounds not weak or muffled. Fortunately, Mr. Chairman, these cases are rare, and, while we can carry away no points of great practical value from the details of such a case, probably the rarity of such cases, and the unusual time in which life was ingeniously prolonged, I hope may be of some interest to all, and I think it also seems to demonstrate the great advantage gained by *post-mortem* examinations—a something we are usually too loath to press for. I believe it is a duty every physician owes to himself. An active practitioner usually cannot afford the time, when the opportunity might present itself, but I believe the time so employed will be more profitable to him than the pursuit of his profession in any other channel.

DISCUSSION. Dr. Campbell thought it a very excellent paper. Fortunately, such cases were rare. He considered that if the patient had not undergone the strain of lifting he might have lived a much longer time.

Dr. Ferguson was much impressed with the wonderful restorative powers of nature, and thought we should resort more to rest, especially in obscure cases.

Dr. McCallum suggested that the case was one of aneurism of the ventricle, with subsequent rupture.

Dr. Hodge inclined to the belief that it was an aneurism, which had subsequently ruptured. He urged the necessity of *post-mortem* examinations, and the benefits of keeping accurate histories of cases.

Dr. Gardiner complained of the difficulty of getting consent to a *post-mortem* examination in many cases. This case illustrated how futile we are in many cases, even with all our modern instruments, to assist in diagnosis.

Dr. Gardiner found in all his cases, except one, that the ear affected was the right one.

Dr. Butler, replying, thought the left ear was the one principally affected, on account of the blood supply being in a more direct line from the heart. Perforation, he thought, could be prevented by supporting the drum by means of a plug of cotton passed in against it, and the making of a puncture when the proper time came. He objected to poultices, as they were liable to set up an eczema of the auricle.

Dr. Hodge agreed as to the suddenness and virulence of the onset. The abstraction of blood from over the mastoid cells gave marked relief.

Dr. Campbell had employed similar treatment in quite a number of cases during the last epidemic of influenza. Some cases went on to sup-

puration, in spite of the treatment. He gave morphia for the pain, but had never abstracted blood for its relief.

Dr. Ferguson mentioned a case where the administration of quinine had markedly increased the patient's discomfort. In his cases, in all except one the left ear was affected. The reason he could not detect.

## RECENT EXPERIENCES WITH AXIS TRACTION FORCEPS.\*

BY WILMER BRINTON, M.D.,

BALTIMORE.

**L**OUISA JACKSON, colored, was admitted to the Maryland Lying-in Hospital, June 8th, 1893. She was pregnant with her first child; æt. 19 years. She made the statement that the "first day of her last sickness" was October 5th, 1892. Within two weeks after she entered the hospital, in the presence of a class of students, I measured her pelvis, using for this purpose a Schultze pelvimeter, and my hand. I found the transverse diameter normal, but that there existed a marked contraction of the antero-posterior diameter of the superior strait, being three and a half inches (Monies). At this time, and in the presence of students, I stated that, from the measurements, I was sure that the woman would have a difficult labor, but that, if nature did not do the work, forceps would deliver her, without the necessity of other operative measures on mother or child. Labor pains began a few minutes past midnight, July 20th, 1893. An examination then made by my assistant found the child presenting vertex, with the occiput to the mother's front and left (Occipito-Leva Anterior). From this time on the pains continued, with more or less severity. At 3.30 p.m., some fifteen hours from the beginning of true labor, the membranes ruptured spontaneously. At 5.30 p.m. a hypodermic injection of one-quarter of a grain of morphia was given. She then slept "off and on" until eight o'clock, when her pains began again, and were of a severe character. I first saw this woman at midnight, after she had been in labor twenty-four hours. I found her in a good condition, pulse being about one hundred, but she complained of feeling thoroughly exhausted. An examination per vaginam found the cervix about half dilated; the child's head above the superior strait, and movable; the heart sounds of the child, which were heard to the mother's left side, indicated that the child was in no immediate danger. Under the existing condition, we determined to postpone operative measures until early next morning. Hydrate of chloral, grs. xv., was now given every twenty min-

\*Read at a meeting of the Maryland Clinical Society, February 2nd, 1894.

utes until a drachm was taken, and from 3.30 o'clock in the morning until I saw her at six o'clock she had hot vaginal douches every thirty minutes. When my colleague, Dr. Crouch, and myself examined this patient at this hour, we found no material change from the examination made at midnight, with the exception of the cervix being more dilated and dilatable. The head was still movable, the mother was in quite an exhausted condition and we determined on operative measures in the interest of both mother and child. What should it be? Version or high forceps? With some predilection is for version in this class of cases, yet we determined on high forceps. The woman was thoroughly chloroformed, and Lusk's modification of Tarnier's forceps were applied. After considerable traction, lasting "off and on" for about forty minutes, we succeeded in delivering her of a living female child. A tear of the perineum was immediately repaired. A brief history of the case, as taken from the hospital record book, is as follows: First stage of labor, twenty-nine hours; second stage, fifty minutes; third stage, ten minutes; presentation, vertex position, O.L.A.; child, female; weighed six and a half pounds; length, eighteen inches. The child was nursed by its mother, who left hospital August 3rd, 1893, after an uneventful lying-in period.

CASE 2. At 2 a.m., January 22nd, 1894, my associate, Dr. J. F. Crouch, was called to see Mrs. T., a native of Ireland, æt. twenty-four years. He found her in labor for the second time. She had had true labor pains for two days before the doctor was called. The membranes had ruptured spontaneously forty hours before. From an enquiry made at this visit, it was ascertained that her first labor must have been a very difficult one. She had been under the care of a midwife for nearly two days, when, finally, a doctor was sent for, and, after great exertion upon his part, she was delivered of her child, which lived only a few minutes. An interval of two years elapsed, when she conceived again, and, as stated, after having been in labor for nearly two days, Dr. Crouch was then sent for. He found the child presenting vertex, head high up, and movable; fetal heart heard distinctly to the mother's left. The "os" was found dilated to the "size of a half dollar." The pains continued all day Monday without progress. I first saw this woman at five o'clock in the afternoon, some fourteen hours after Dr. Crouch first saw her, and nearly three days from the time she first went into labor. I found the patient in an exhausted condition, pulse 128, and bad. She was extremely restless, rolling from one side of the bed to the other. A vaginal examination found the parts hot and dry, the cervix dilated to the size of a silver dollar, but rigid and edematous, the presenting part, in my opinion, being a brow. While examining, I pushed up the presenting part, and, in the light of subsequent events, I believe, I

caused enough flexion to transpose what was, undoubtedly, a partial brow into a vertex presentation. While thus engaged in pushing up the presenting part, I had no trouble in making out with my fingers a marked deformity. The promontory of the sacrum projected to such an extent that the antero-posterior diameter of the superior strait was estimated to be less than three and a half inches. We revisited our patient at eight o'clock p.m., found no progress, pulse more rapid, exhaustion very decided, the cervix more edematous, the head still movable above the brim of the pelvis. We decided to delay no longer. Chloroform was given to full anesthesia. Neal's axis traction forceps were applied, and, after considerable traction, a medium-sized male child was delivered. The child was asphyxiated, but was soon restored to animation by the usual methods. The placenta was delivered by Crede's method fifteen minutes later. The uterus contracted and retracted well, but considerable blood was lost; but the hemorrhage was soon under control by kneading the uterus—hand in uterus—and uterine injections of hot water. The patient has had no trouble during her lying-in period, and now, on her eleventh day, is going about her room. The child still shows evidence of pressure about the cranium, but is prospering, and will do well. As we never saw the woman until we were called to see her after being in labor two days, we did not have the opportunity of measuring her pelvis. We hope to do this accurately within a fortnight, and we shall report the results later. In this case the deformity was of such character as to lead one to indulge in thoughts of the fashionable "fad"—the now popular operation, Symphysiotomy. But, even with this operation, could our results have been better?

## OYSTER POISONING.

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BY J. H. HOWELL, M.D.,

WELLAND, ONT.

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ON the evening of December 6th, 1893, Mr. Z., æt. twenty, and his sister, a few years older, partook of stewed oysters at supper. About eight o'clock I was sent for, and on arriving found both complaining of severe pain in the epigastric regions, a sense of oppression in the precordia, with a feeling of suffocation. The pulse was rapid and feeble, the conjunctivæ injected, the face swollen, and the entire body covered with an urticarial eruption, which gave rise to intense burning and itching. On inquiry, I learned that three young lady boarders had taken some of the broth, but had not eaten any of the oysters. One of them experienced a little nausea, but no other symptoms. As all had eaten of the other articles of food provided for supper, and Mr. Z. and his sister were the only ones who had eaten of the oysters, I at once concluded that they were the cause of the trouble. Mr. Z. had vomited freely, which had given him some relief from pain. I gave Miss Z. a hypodermic of apomorphia, and had her take a copious draught of tepid water, which soon produced a free emesis, followed by much relief from the pain. I had a carbolic lotion applied to the skin, which soon relieved the burning and itching. Under the use of stimulants they soon became quite comfortable, but depressed. As both had frequently eaten oysters before—in fact, were very fond of them—I concluded that the oysters must have been somewhat spoiled, and that the poisonous effects were caused by some toxic principle which had developed. They stated that there was nothing noticeable in the taste of them, and that the quantity eaten was not excessive.

On the evening of December 28th I was again summoned, and found Mr. Z. and his sister with the same symptoms as before. They stated that they had procured some fresh oysters, and had eaten only a small quantity, with the result that in about half an hour they both became very sick. Another sister had eaten heartily of them without any bad results. I therefore concluded that they were cases of oyster idiosyncrasy. Miss Z. was just recovering from an attack of la grippe, and I did not care to give

apomorphia; but after trying a variety of emetics without success, I gave her a small hypodermic, with the result that she soon vomited freely. In other respects the treatment was the same as before, but they both felt very sick all night, and were quite miserable for a day or two.

These cases present some very peculiar and interesting features. Poisoning from eating certain kinds of shellfish, especially the mussel, is well known; but, as far as I can learn, oyster poisoning is somewhat rare, and, when we consider the large consumption of them, the cases certainly seem worth recording. On making inquiry, I learned of several persons, including the members of my own family, that they had eaten on the same and following days of oysters procured from the dealer who had supplied them on the first occasion, and, as he had only one keg on hand at that time, must necessarily have eaten of the same kind. The dealer admitted having kept them for several days of mild weather, but said they were packed in ice. If the cause of the trouble was some toxic principle, it seems strange that others should not have suffered as well. The fact that on the second occasion one sister ate heartily of them without a single bad symptom makes it evident that, in some way, oysters had become a poison to these two individuals.

The peculiar and, to me, mysterious features of the case are that two persons out of a number who ate the oysters should have developed this idiosyncrasy, when oysters had always agreed with them previously.

# Progress of Medicine.

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## MEDICINE

IN CHARGE OF

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### TREATMENT OF CHOREA AND ENURESIS BY INJECTIONS OF TESTICULAR EXTRACT.

Deydier (*Lyon Medical*, 1893, No. 16, p. 548) publishes five observations of chorea and three of nocturnal incontinence of urine in children treated by this method. In one case of chorea the improvement was almost instantaneous, and cure was complete after seven injections. In three other cases improvement was observed after the third injection, but cure was not attained until after three weeks or a month of treatment. The fifth case was absolutely rebellious to treatment.

In the cases of enuresis, with one child each injection prevented the incontinence during the night following the injection, but on that night only. In another case, a child of five years was radically cured by one injection and the dread of a second. Finally, a third child was seized shortly after the injection with alarming nervous symptoms (fainting, abdominal pains, vomiting), and the operation was not repeated. The child remained eight days without wetting the bed, and then recommenced it. In all the cases of incontinence suggestion or fear appeared to play an important part.

Except in the single instance mentioned, all the patients bore the injections well. The dose was one-half a cubic centimetre. Only a little pain and inflammation at the point of puncture was noted.—*American Journal of the Medical Sciences*.

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### THE PATHOLOGY OF ACUTE PERFORATING ULCER OF THE STOMACH IN YOUNG ADULTS.

Only passing reference is made in this article to simple chronic ulcers, and the multiple ulcers of the stomach which are apt to occur in acute specific fevers, such as typhoid, pyemia, and erysipelas. The acute ulcers referred to have the following characteristics: They generally occur in young adults, mostly females, between sixteen and twenty-five years of age; they are almost always solitary, two being rarely found; occupy exclusively



the pyloric region, generally on or near the lesser curvature ; are seldom larger than sixpence ; edges slightly raised, but not thickened or indurated ; funnel shape, with apex towards peritoneum ; no signs of inflammation around ; their onset is rapid, with acute pain after food, relieved by vomiting ; local tenderness over pyloric region ; hematemesis ; recovery often speedy under proper treatment. This variety of acute ulceration is evidently a distinct entity, and the author maintains that the ordinary theories of the pathogenesis of gastric ulcer are wholly inapplicable to this variety. The causes of gastric ulcer generally given are then discussed.

(1) *Embolism.* Pavy, Cohnheim, and others have proved that any sudden obstruction to a gastric artery is followed by death of the mucosa supplied and ultimate formation of a perforating ulcer. The experimental facts are beyond dispute, but the theory is quite inadequate to explain the disease as it occurs in man ; for (a) emboli are never found *post mortem*, and no possible site for their manufacture has yet been discovered in all the cases examined. (b) Even in ulcerative endocarditis, the stomach always escapes embolism. Of one hundred and twelve autopsies on cases of ulcerative endocarditis, sixty-two per cent. had embolism of various viscera, but in not a single case was the stomach affected. (c) The ulcers following *artificial* embolism of the stomach are not found in the pyloric region, where acute perforating ulcer occurs. As this is an important point, the author spent considerable time in determining the course usually followed by various emboli, such as tobacco seeds, powdered wax, and silver sand, when injected into the circulation. The injections were made both in living and recently killed animals, including rabbits, guinea-pigs, and dogs. In only three to five per cent. did the emboli reach the stomach, and in no instance was the pyloric region alone affected. Similar experiments on the human body after death gave the same results : less than two per cent. of the emboli reached the stomach, and these lodged almost invariably in the vessels of the cardiac end. In like manner, embolism resulting from disease of the vessels in the vicinity of the stomach generally affects the large arterial trunks at the fundus. Thus in a case of aneurism of the celiac axis, though numerous gastric ulcers from emboli were found, there were comparatively few at the pyloric end. (d) Experimental ulcers from embolism are accompanied by intense congestion and extravasation into the mucosa, and the edges or base show signs of hemorrhagic origin ; but in the idiopathic disease the author has never detected signs of hemorrhage or inflammation in the surrounding tissue.

(2) *Arterial thrombosis* from atheroma, etc., is next discussed. It is common in the stomach, and probably the most frequent cause of chronic ulcer in elderly people, or in phthisis, with lardaceous disease, and such

ulcers occur in the pyloric region. But, in the first place, they are chronic; next, they are often multiple, oval, or irregular, with a smooth, shallow base, and indurated, sloping edges, with rather a tendency to spread superficially than to perforate, thus exhibiting a picture which bears but little resemblance to the crater-like acute form. Moreover, the author has never found in acute perforating ulcer any signs of primary arterial degeneration, nor any account of such in the literature of the subject.

(3) *Venous obstruction.* Ligature of the portal vein has been shown by Müller to cause ulceration of the stomach; but the author tries to prove that obstruction to venous flow cannot be a constant factor in acute perforating ulcer. Experiments of tying a small gastric vein in rabbits and cats resulted in neither congestion nor ulceration, which is readily explained by the fact that gastric veins so freely anastomose, and are devoid of valves. Ligature of the portal vein in rabbits which were killed after various intervals caused numerous hemorrhages and ulcers almost entirely confined to the cardiac and middle thirds of the stomach. In gradual obliteration of the portal vein, gastric ulcer is not only uncommon, but is always chronic when it does occur.

(4) *F:inctiform hemorrhage* in gastric mucosa may be caused by injuries to the cerebro-spinal nerve system, or by introducing certain albumoses into the blood, or by artificial hemoglobinemia, and it is certain that acute ulceration and even perforation may result; but from the author's experiments with pyrogallic acid and toluylendiamine he concludes that the ulcers thus produced are generally multiple, show signs of their hemorrhagic origin, and are not commonly in the pyloric region, thus sharply distinguishing them from the idiopathic variety.

(5) *Vascular spasm* in the stomach is advocated by Klebs as a cause of gastric ulcer, and Talma has shown that if the left vagus is faradized for several hours, and then the animal be killed, pyloric ulcers are found. This is explained by the spasm of the pylorus compressing the blood-vessels, and the mucosa thus rendered anemic is readily eroded by the gastric juice. Talma then infers that pyloric spasms play an important part in producing acute perforating ulcer, and he quotes three cases where intense abdominal spasm was followed by hematemesis. But of five hundred cases of gastric ulcer treated in London Hospital, no history of abdominal spasm is found, and the author regards this explanation as unproved, and certainly not a common cause of gastric ulcer.

(6) Although it has frequently been suggested that the solitary glands of the stomach might be the source of some form of ulcer, no general attention has been given to this subject. These glands consist of numerous collections of lymphoid tissue round the deep ends of the secreting tubules,

largest and most numerous in the pyloric region near the lesser curvature. They are very numerous in childhood, while in adults they are almost absent, except a few in the pyloric region. They have often been found enlarged in inflammatory diseases of the stomach, especially in typhoid, acute tuberculosis, and diphtheria, when they often undergo rapid necrosis, and form circular funnel-shaped ulcers. The cause of the funnel shape is probably owing to the contraction of the muscular coat under the irritation of the gastric juice, and as the muscle is most abundant near the pylorus it is especially there that we find funnel-shaped ulcers. Moreover, as soon as the gastric juice has removed the necrotic gland, the ulcer, which is left, no longer shows any signs of its lymphatic origin. Thus in this respect, and in the funnel shape and position near pylorus, acute perforating ulcer may well be explained as arising from the solitary glands. The fact that in typhoid, diphtheria, etc., the ulcers thus arising are multiple is explained because these are general systematic diseases. It is acknowledged that no artificial anemia ever causes enlargement of these glands, and the fact that acute perforating ulcer is single certainly points to a local cause. Now, slight erosions of gastric mucosa are probably extremely common, and small ulcers may arise from consequent lymphatic involvement; if at the same time anemia be present, or the gastric juice be hyper-acid, the ulcer may enlarge and perforation occur. Thus the author argues that the solitary glands may readily be the source of acute perforating ulcer. Definite proof is, of course, not possible as yet; but the author's researches certainly warrant us in regarding the solitary glands as a probable and, perhaps, the commonest source of acute perforating ulcer of young adults. —W. Pollard Fenwick, in the *Journal of Pathology*, Vol. 1, No. 4, June, 1893.

# THERAPEUTICS

IN CHARGE OF

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• AND

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## PYROGALLOL IN LUPUS.

Hofrath D. Veiel (*Berliner Klinische Wochenschrift*, No. 39) describes the manner in which he uses pyrogallol for the treatment of lupus vulgaris. The first treatment consists in the destruction of such lupoid tissue as is visible and can be felt. For this he chooses his method according to the locality and variety of the lupus, sometimes a mechanical treatment (scarification, scraping off), sometimes a chemical one (caustic potash, or nitrate-of-silver pencil, or pyrogallol vaseline, ten per cent.), sometimes a thermic treatment (thermo-cautery, galvano-cautery). When the pyrogallol cannot be used alone from the first, he uses a bandage of ten per cent. pyrogallol vaseline salve spread on lint. The first bandage is left for two days; from the third day on the same dressing is renewed once a day. In this manner he seeks fully to destroy any lupus particles which may have escaped the first treatment. This is quickly accomplished. It is advisable to protect the surrounding healthy skin by a plaster (for example, of zinc benzol salve on mull) from the action of the pyrogallol, which produces a very painful irritation.

On the fourth or fifth day the application of the strong pyrogallol is usually exceedingly painful, so that in many cases morphine injections become necessary. An addition of cocaine to the salve did not prevent the pain. The pain is most severe upon the entrance of air when the bandage is moved or opened. The change of bandage should be made as quickly as possible, and very carefully applied. When this pain occurs, it is time to leave off the strong salve and take another course. Formerly the healing was obtained under vaseline or iodoform, but Veiel now uses a weaker pyrogallol salve, which does destroy the lupoid tissue, but does not prevent the formation of healthy granulations. The two per cent.

salve usually fulfils these conditions. If this is too strong, a one per cent. may be used, or even a .5 or .2 per cent. may be used as soon as the granulated surface is formed.

The healing is usually very slow by this method, but the scars are smoother and prettier than by any other method of treatment. Therefore he uses the pyrogallol when the face or any part is affected, where a pretty scar is desirable. When this is no object, he uses transplantation after Thiersch's method, as soon as the smooth granulated surface is formed.

The urine must be constantly watched during the treatment, and the use of pyrogallol at once stopped if albuminuria or hematuria occurs. Veiel has never, in all the cases treated, seen any permanent action upon the kidneys or general health, no doubt because the pyrogallol is used on comparatively small surfaces.

The good results in tuberculosis of the skin led him to try the pyrogallol also for that of the bones. In tuberculosis of the hollow bones it was without result, but cured four cases of caries of the tarsal bone. They were treated during two weeks with the ten per cent., and then, until cured, with two per cent. salve. The cure took from eight to thirteen weeks.

He used a .5 per cent. watery solution of pyrogallol for a girl who had lupus of the conjunctiva, dropping it in the eye daily. She has now been well for a year.—*Therapeutic Gazette.*

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#### SALOL AS AN INTESTINAL ANTISEPTIC.

IN *The Practitioner*, Sympson publishes a useful paper on salol as an intestinal antiseptic. He recalls the well-known fact that, after having been swallowed and passed through the stomach unchanged, it is split up in the duodenum by the pancreatic juice into its constituents, salicylic acid and carbolic acid. Their action will be alluded to more in detail later on, but it may here be said that they are thrown out of the body partly by the kidneys (the urine not infrequently being blackened by the carbolic acid) and partly by the intestinal tract in the feces. From experiments on dogs whose pancreases have been extirpated, there seems to be reason to think that salol can be absorbed from the intestine without the intervention of the pancreatic juice. As to its action on digestion, there are different opinions, some authorities saying that it unsettles the digestive processes, and that it actually sets up gastric trouble. These statements refer to its action in typhoid fever, which will be mentioned presently; other observers have, however, noted directly the contrary results. Sympson has personally taken salol in 5-grain doses three or four times a day, both before and after meals, when he has been perfectly well, without experiencing the slightest interference with digestion or appetite.

Before finishing this brief account of salol, it may be said that it has been accused of producing herpes, and of increasing the delirium which frequently occurs in the course of typhoid fever. Sympson has not noticed this latter himself in either complaint, or when he used salol in cystitis.

The stomach undoubtedly is responsible for some cases of dyspepsia where the chyme is passed on to the intestines in an imperfectly-prepared manner, which produces duodenal disorder. But in the following class of cases there is evidence that occasionally the secretions poured into the intestine are at fault. The patient is probably of a "bilious" temperament; he may have a clean tongue, with great loss of appetite, and consequent loss of flesh; no pain during a meal, but coming on about two and a half to three hours after. Very likely he is constipated, and when his bowels are relaxed the motion is grayish white. As a rule, he will not suffer from nausea, only a little retching sometimes, and instead of the gas being acid, as it so often is, it may be quite alkaline and "soapy," as a patient once told me. The seat of pain is the lower part of the abdomen, and is relieved by passing wind. There will, perhaps, be a slight yellowness, hardly amounting to actual jaundice. These cases belong to the same class as those described by Dr. Allchin in his lectures on duodenal indigestion. So, latterly, the writer has been in the habit of beginning with four or five grains of calomel, and following it in an hour or two's time with ten-grain doses of salol every four hours. This, to use the language of a somewhat enthusiastic patient, "acts like a charm" when taken about one and a half hours after meals. The pain ceases, the swelling of the abdomen does not appear, the appetite improves, and, more important still, the wasting—probably due to the non-digestion of a large part of the food—departs.

Salol has also been found exceedingly useful in a form of infective diarrhea. In cases of ordinary diarrhea, too, there are few remedies which more speedily check the flow and the pain than ten-grain doses of salol. Some years ago, in the *Lancet*, Sympson advocated giving glycerin of borax in the diarrhea of infants, believing that undue fermentation in the intestines was the *fons et origo mali*. It does answer well, but salol is to be preferred in the severer cases, in doses proportionate to the age, as it is a little more certain, more antiseptic, and almost as agreeable to take.

Lastly, he has been using salol exclusively in typhoid fever, not so much on the idea of combating the specific poison, but of cleaning and keeping clean the intestinal tract, and so subduing the irritation of the glands of Peyer's patches and other ulcers there, and that caused by the secretion from these ulcers in the intestine. Salol also prevents the excessive formation of wind, which is sometimes so vexatious a trouble to the

patient. Salol brings the temperature down generally one or two degrees, causes abundant perspiration (this can be readily combated by giving oxide of zinc, tincture of belladonna, and some quinine in a mixture), reduces the number of stools from twelve to fourteen in the twenty-four hours to three or four, and, when they are offensive, deprives them of any odor whatever. No bad effects were noticed with regard to its action in producing delirium. Its use was continued in typhoid fever for about a week after the disappearance of diarrhea. It was always given in ten-grain doses, suspended by means of compound tragacanth powder, at first (in typhoid fever and other complaints) every four hours, then every six, and, for the last week, three times a day. It was always given after food.—*Therapeutic Gazette*.

#### BORACIC ACID IN TYPHOID FEVER.

I. Tortchinsky (*Bolnitchnaia Gazeta Botkina*) has tried boracic acid in 240 consecutive cases of enteric fever during an epidemic. The results were excellent; only nine patients died, every one of whom succumbed during the stage of convalescence, in consequence of getting up too soon, or of dietetic error. The remaining 231 made a speedy and complete recovery. In all the cases the patient was first given from two drams to half an ounce (according to age) of castor oil, with from five to twenty drops of turpentine oil. Immediately after these drugs had acted the administration of boracic acid was commenced, the remedy being given internally, either in powder or in solution, in from ten to fifteen grains to adults, in from three to ten to children, three or four times a day. When bronchitis was present, the drug was combined with expectorants and hydrochloric acid. As a rule, within from three to five days fever and diarrhea markedly decreased, tympanites disappeared, the stools lost their offensive odor and became natural in appearance, the urine became abundant and normal in all respects, the tongue and skin moist, the subjective state good, etc. As soon as the general improvement set in, the acid was discontinued, and tonics were given. Under the treatment the disease ran a very mixed course, its duration was considerably shortened, and complications were very rare. The most striking effects of the acid were obtained in cases which came under treatment in the initial periods of the affection. It was further found that the beneficial action of the remedy could be intensified by combining it with small doses (from two to five grains) of antifebrin, quinine, naphthalin, or salol. The combination with quinine proved especially useful in late stages of typhoid, with tremor, delirium, and other cerebral symptoms, as well as in the case of relapses. No untoward accessory effects from boracic acid were ever observed. The writer arrives at the conclusion that the method is the cheapest, simplest, most harmless, and most efficacious of all yet known. He also obtained equally satisfactory results from the acid in the summer diarrhea of children.—*British Medical Journal*.

# OBSTETRICS

IN CHARGE OF

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## THE VAGINAL AND INTRA-UTERINE DOUCHE.

Dr. Boxall, of London, in his lectures on antiseptics in midwifery, gives the following directions respecting the administration of vaginal and intra-uterine douches. In employing the douche, especially during puerpery, care should be exercised to wash, first, the parts about the vulva and the external genitals; then to douche the vagina, and only after this has been done should the tube be carried (and then only when there is some special reason for it) into the uterus itself. By following out this method of procedure, the risk of carrying septic matter from the vulva or vagina into the uterine cavity is reduced to a minimum. Keeping the patient meanwhile in a supine or semi-supine position, the uterus, with one hand placed like a cap over the fundus, may be supervised, and, by now and again compressing and depressing the womb by pressure through the abdominal wall, any fluid which (even when the uterine tube is not used) may have found its way into the uterus will be expelled, and clot or retained membrane will be washed out with the gush of water as it escapes from the vagina.

Dr. Boxall prefers the forcible stream of the continuous douche on account of its obvious mechanical advantage. This may be obtained not only by means of the usual hydrostatic apparatus, which is barely portable, but by requisitioning an ordinary ewer (pitcher), and of a length of elastic tubing an apparatus may be improvised which is capable of meeting all the requirements. The tubing can be converted into a siphon by filling the tubing with air without the aid of a small glass funnel, or by fixing the tubing to an ordinary elastic enema syringe and working the apparatus till the stream begins to flow a continuous siphon douche may be produced. According to the height of the reservoir above the patient, the force of the current can be varied at will. Be careful to fill the apparatus, that the air may be expelled, and to let a sufficient quantity of the solution run



through it to warm the tube before inserting the nozzle. Owing to the readiness with which it may be cleansed and kept clean, a nozzle made of glass or celluloid is advisable, and for intra-uterine irrigation a double channelled tube is preferable.

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#### MILK SECRETION.

It is said that antipyrine, 10-20 grains nightly for three or four nights, has successfully arrested milk secretion.

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#### A NEW FORM OF ABDOMINAL BANDAGE FOR USE AFTER DELIVERY.

A part of the necessary attention to a delivered woman consists in the long-use sanctioned and, in many cases, undoubtedly useful abdominal bandage.

It was invented with the view of supporting the relaxed abdominal parietes after a childbirth, and it was found not only to do this, but also, when properly applied, to exercise a beneficial pressure on the puerperal womb during the first week of its involution, stimulating it to keep up or increase its contraction.

These are uncontested advantages in an abdominal bandage properly applied and held in place; its theory is absolutely correct; but in practice, as any observer with even a limited field of work must admit, it generally falls short of these aims for various reasons, and has on that account been almost discarded by some physicians.

The material used for these bandages up to the present time, as we all know, has been bleached or unbleached muslin, applied either complete or partially cut on each side as a tail bandage. The application itself is made as soon as possible after the removal of the placenta, and with this begin the difficulties of the present bandage. The semi-exhausted woman, whose pelvis and back are in a condition compatible only with completest rest, must elevate her pelvis, or have it elevated—which is still worse—so that the bandage may be slipped under. This done, we pass to another difficulty—the proper fastening of the bandage in front. Our purpose is to apply an even pressure over all the abdomen, and this with the most common, complete bandage is well-nigh impossible; with the tail bandage it is much easier, yet not even here is the matter so simple as it would appear.

Having succeeded in applying our bandage perfectly, the first thing we see at our next visit to the patient is that it has slipped off, forming a mass of distressing wrinkles under the back, and having all its pressure relaxed; or, if we applied the bandage low enough to avoid this, we find it soiled so much that we ourselves must unfasten and take it off. And

the second application causes more inconvenience, as a rule, than the first.

Having all these difficulties in view, I have tried to replace the old bandage by something that, possessing the same or probably greater advantages, would not have these drawbacks, and I think I can safely say, though the extent of my experience hardly warrants it, I have succeeded.

I have had a case of oblique presentation in which, after delivery, the uterus retained an oblique position, the fundus lying entirely on the right ilium; there was a history of an injury affecting the region of the left broad ligament in the first part of gestation. I was able to reduce the uterus to the normal position manually, but as soon as my hand was withdrawn it returned, giving rise to local pains and distress. I ineffectually tried a compress and the usual bandage, and on my third visit resorted to a compress held in place by strips of adhesive plaster, and this worked to my perfect satisfaction, suggesting to me at the same time the entire replacement of bandage by adhesive plaster.

Trying it in practice since then, I have found it work admirably; it overcomes one and all of the disadvantages of bandages, and effects more than the best of them.

Six two-inch strips of plaster usually suffice. They are cut of a sufficient length to pass over the abdomen from one to the other of the quadrati lumborum muscles. Over the surface of the abdomen a thin layer of cotton is laid, leaving about four inches on each side for the plaster to adhere, and if advisable in uterine atony, or required from some other reasons, a suitable pad is put on the cotton, and then the strips are applied over it, beginning with one over the compress. The woman is spared the slightest motion. There is no soiling, no possible infection as from unsterilized muslin, the plaster adheres perfectly, and serves its purpose better than the most carefully applied bandages could do, and it can be removed or reapplied with the greatest ease, not interfering in the least with abdominal examination.

I hope my little invention will attract the notice of my professional brethren. I do not know but some one may have employed the same before me; in that case, I would join my humble voice with his, and recommend the adhesive-plaster bandage heartily.—A. Hrdlicka, in *New York Medical Journal*.

# SURGERY

IN CHARGE OF

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AND

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## GANGLION.

Dr. H. M. Jordan (*Lancet*; *Medical Chronicle*), in a paper on this subject, reports twenty-five cases treated by injection with Morton's fluid. After enumerating the explanations of various authorities of the causation of the lesion, the author supports the view that it arises from a hernial protrusion of the synovial membrane through a slit or rent in the fibrous sheath, the neck being compressed by the tightness of the rent in the sheath; a plastic inflammation is set up, obliterating the neck, and the sac is thus shut off from the rest of the synovial cavity. His reasons for this view are: (1) The frequency of the affection in persons who occasionally have hard manual work to perform, such as charwomen who have "wringing" to do; (2) the sudden and painful onset succeeding some exceptionally hard work, as noticed in the cases quoted; (3) the results of careful dissection, showing that the fibrous capsule of the sac is of new formation from areolar tissue, and not a mere expansion of the fibrous sheath.

The various methods hitherto adopted for treatment are mentioned at some length, namely: (1) Rupture by pressure of thumbs, or by sharp blow; (2) electrolysis; (3) puncture and scarification, a valvular opening being made into the cyst, the contents squeezed out, and the interior thoroughly scarified, followed by the use of splints and gentle pressure; (4) seton; carbolized silk, gut, or horsehair being used; (5) incision into cyst, and then allowing it to granulate up from the bottom; (6) excision, by carefully dissecting out the unopened cyst, and then cutting it away from the sheath.

These methods are objected to for various reasons—recurrence, supuration in sheath, matting of tendons together, unsightly scars.

It is by a combined method of aspiration and injection that the author has treated his cases. The object aimed at is to cause inflammation of the synovial tunic, which becomes covered with layers of plastic lymph, and this lymph, subsequently organizing, the synovial membrane as a secreting surface is destroyed, and by keeping the walls of sac in apposition the cavity is obliterated.

The operation is thus described : The part being scrupulously cleansed, a large hypodermic syringe, with a wide-bored needle, which is screwed on, after being carefully aseptized, was thrust into the ganglion, and the contents withdrawn. Often there was considerable difficulty in getting these to flow through the needle, in which event firm pressure on the tumor synchronous with the aspiration overcame the difficulty. The syringe being unscrewed, with the needle left in position, a piece of lint wrung out of a five per cent. carbolic acid solution was placed at once over the needle. The syringe, emptied and then filled with Morton's fluid, was rescrewed on to the needle, and the sac partly filled. On withdrawing the needle, the "tumor" was freely manipulated to insure the fluid reaching every part of the interior. A splint reaching to the finger tips was applied, and a thick, tightly-folded pad of lint firmly strapped over the tumor, and the arm suspended in a sling.—*Atlanta Medical and Surgical Journal*.

[We can indorse the injection treatment of ganglion, but would substitute for the Morton fluid (which is, iodi., grs. x. ; pot. iodide, grs. xxx.; glycerine,  $\bar{3}$ i.) a solution composed of spts. vini. rect., ac. carbolic, glycerini, equal parts. The latter solution, employed with the technique given above, answers admirably in inflammation of the prepatellar bursa (housemaid's knee).—L.M.S.]

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#### ACTION OF THYROID SECTION.

Professor Greenfield deals with this important subject in the Bradshaw lecture on "Diseases of the Thyroid Gland," published in *The Lancet*. Its bearing on the question of surgical interference with the thyroid is obvious.

Whatever other functions may be subserved by the thyroid gland in the animal economy, whether in blood formation, proteid metabolism, or as supplementing the action of other organs, we cannot now doubt that all its more important functions are due to a secretion which can be separated, though not, as yet, in a pure state. This is abundantly shown by the fact that the symptoms and deleterious results of atrophy, congenital deficiency, or removal, can be averted or cured by a substance chemically separated, and introduced by the stomach. This fact, if it threw no other

light on the physiology of the thyroid gland, serves to abolish all the theories grounded on the view that it acts by the removal of a poisonous substance from the blood, or by transforming mucin into "colloid" *within* the gland. True, it does not prove that no such action is exerted by the substance within the blood or tissues, but it minimizes the previous observations as to the accumulation of mucin, etc., in the blood as explaining any part of the pathology of myxedema. And if, as seems probable, the essential constituent of the secretion should prove to be of the nature of a ferment, the usefulness of the colloid material, unless to dilute, and delay the activity of the secretion, will also be negatived. I have recently made numerous observations on the nature of the substances contained in thyroid extracts; but, since others more competent are engaged in the work, I need only refer you to such papers as that of Mr. Edmund White.\* No one can, after such observations, question that the amount of the active ingredient forms a very minute proportion of the extract from the gland.

The physiological action of the secretion on healthy animals, and in various diseases, also urgently demands further investigation.

Both from the changes found in myxedema, and from experiment, there can be little doubt that the thyroid secretion has an especial action on the skin. It appears especially to affect the sweat glands, stimulating their activity, and probably also promoting the nutrition and activity of the other structures of the skin. It is possible that this action is exercised through the sympathetic nervous system, either by vascular control or otherwise; but some considerations suggest a direct action on the vessels, or on the glands themselves. What effect it has on the central nervous system, and in what manner this is exerted, are subjects for further experiment. It is possible that it may act partly through the vascular supply, partly, in a direct manner, on the nervous tissue. One point of especial interest is whether, under normal conditions, its activity is limited to the cervical sympathetic ganglia and some of the medullary centres.

The observations of the action of thyroid extract in myxedema can, of course, only be accepted with some deductions. Where only a moderate dose has been employed, the effects of restoration of the normal conditions as to temperature, skin excretion, action of the kidneys, restoration of the general nutrition and of the cerebral functions, are well known. Valuable evidence is also given by the effects of overdoses, where the rise of temperature beyond the normal, the acceleration of pulse and its characters, and the production of sweating, diarrhea, etc., correspond in many respects with the phenomena of Graves' disease. A few observations are also recorded by medical men on themselves. Such are those of Dr. Alexander Haig, who found that relaxation of the arterioles, diuresis, etc.,

\* "The Pharmacy of the Thyroid Gland," *Pharmaceutical Journal*, Sept. 2nd, 1893.

were produced by it. The only satisfactory observation I have made on a healthy subject was one in which dried tabloids were given, the effect being a slight irregular rise of temperature and tachycardia. It was noted that the tachycardia and ready excitability persisted for some days after the drug was stopped. The glycerine extract had proved inert in this and other cases.

We cannot but be impressed by the fact that the partial arrest of several functions in athyrea is removed by thyroid secretion, and that their activity may be exaggerated by an overdose; one is, indeed, inclined to think that the evidence in this respect is conclusive as to the physiological effects of the secretion. At the same time, one cannot but see that there are flaws in the argument from a strictly scientific point of view, and that it does not serve as conclusive proof that a mere excess of the secretion is an essential factor in Graves' disease. Nor does it seem to me that experiments on the healthy human subject can rightly be made to afford conclusive evidence; for, if the disease were due simply to exaggerated activity of the thyroid, we must, in order to produce all the phenomena of Graves' disease, push the administration to a degree which would be dangerous, and which might lead to permanent damage to the nervous centres and to the heart. For this reason experiments on animals are essential. In them the doses might be of such amount and duration as to cause changes in the central nervous system which could be studied microscopically, and might reveal similar changes to those which I have described.

There is one point of especial importance in respect to experiments on healthy animals. In relation to all active secretions there are means by which either the production is controlled or the excess removed. In prolonged athyrea the control is removed; and probably, as in all functional abeyance, the controlling mechanism becomes defective, and its agents atrophied. Hence we should expect that the effects of artificially introduced secretion would be more intense than in healthy animals. After partial recovery the control is probably regained; but in healthy animals, unless this control system is paralyzed, the effects cannot be expected to be so great. We do not know, and can only infer, wherein this control lies, and, in the human subject, we might find that unexpectedly serious results might follow if disease of the necessary organs existed. It seems probable that the skin especially, the mucous membrane of the alimentary canal, and possibly the kidneys, are the chief sites of excretion.

# PEDIATRICS AND ORTHOPEDICS

IN CHARGE OF

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## ACUTE MENINGITIS TREATED BY DRAINAGE OF THE SPINAL CORD.

In the *Lancet*, 1893, ii., 873, Stephen Paget reports a case of acute tubercular meningitis in a boy aged eight years, in which drainage of the cord was resorted to. The arches of the fourth and fifth cervical vertebræ were removed, and the dura punctured. The operation gave relief for a day, and he died four days later.

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## ACUTE SUPPURATION OF THE TYMPANUM AFTER OPERATION.

In *Archives of Pediatrics* for February, 1894, Dr. J. O. Tansley reports a case in which suppuration occurred in the tympanum following removal of adenoid growth of the pharyngeal vault. On the second day there was a slight perforation of the drum, and moderate discharge of pus. On the following day the temperature was  $104^{\circ}$ ; pulse, 120; contracted pupils and severe headache, chiefly at the vertex and frontal region. There was considerable pain in the ear, and great restlessness. Upon examination, it was found that the perforation was discharging pus, and that the upper and posterior portion of the drum was inflamed. The diagnosis was acute inflammation of the attic, superimposed upon the previous inflammation of the tympanum proper. The serious symptoms were probably caused by a very thin, bony—probably none—separation of the attic from the cerebral cavity. It was thought wise, in order to prevent extension to the membranes, to make a liberal opening into the attic. On the following day, the symptoms continuing as before, the operation was done. By reflected light, a Graefe's cataract knife was made to pierce the drum membrane just behind and upon a level with the short process of the malleus, and, upon piercing the drum, it was carried forcibly directly upwards and outwards for certainly half an inch, passing directly over

rough bone in the incision. There was free bleeding. The ear was washed out and closed with borated cotton. The operation was done at 1 p.m., and at 6 p.m. temperature was  $101^{\circ}$ ; pulse, 100; patient much easier. At 12 p.m., temperature,  $100.2^{\circ}$ ; pulse, 93. Improvement continued, and three days after operation temperature was normal; no further trouble. The incision healed readily, and breathing was perfect.

The author believes that energetic treatment in this way will, as a rule, prevent development of cerebral or mastoid difficulty, and that it is folly to dally with leeches and hot water.

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#### ANAL FISSURE AND PAINFUL EROSIONS OF THIS REGION IN INFANTS AND YOUNG CHILDREN.

Anal fissure and painful erosions occurred often in young children. The history frequently showed that up to a certain time the bowels acted regularly; then constipation became the rule, and when the bowels moved there was pain. The fear of pain caused the child to put off nature's demand as long as possible.

Anal fissures may be above or below the ring. On exposing the parts the fissures would be seen filled with feces, the area around often denuded. It was the writer's conviction, however, that more frequently there was erosion alone, which was situated above the ring, and could only be seen after surgical dilatation under anesthesia.

Where there was persistent constipation which failed to yield to dietetic regulation, which was accompanied by painful stools, the diagnosis of fissure or painful erosions was justified, and called for treatment which would not only cure the lesion, but also the constipation. The treatment advised was first inducing chloroform anesthesia, then stretching the anus and applying the Paquelin cautery to the eroded surface. A tampon of cotton was introduced, and after twenty-four hours removed. Five cases had been treated in this way with signal success, curing both the constipation and pain.

In the treatment of mild constipation a good fluid extract of cascara sagrada was the most useful unnoxious drug.—Henry Koplik, *Archives of Pediatrics*, February, 1894.

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#### INTUSSUSCEPTION IN CHILDREN.

In the *British Medical Journal*, February 17th, 1893, Mr. Arthur Barker records seven cases of acute intussusception in young children. All were infants under eighteen months except one boy of four years and one of twelve years of age. One was healed by repeated injection and inflation alone, with apparent reduction each time, until gangrene and collapse



came on, with speedy death. Six were treated by laparotomy after injection had failed completely. Of these, three recovered perfectly, one aged four years, one five months, and the last seven months. The author points out that, out of the six operated on, three at least could not possibly have been reduced by inflation or injection. For in one the intussusception was high up in the small intestine, and in the other two several inches of ileum were prolapsed through the ileo-cecal valve. In all the seven it might be said, then, that injection failed, and in three it must have failed. In spite of this, laparotomy saved three out of the six operated on. Examination of the fatal cases proved that the result was not due to the operation, but rather to the fact that the operation was too long delayed. From a study of these seven cases, together with eighteen cases with ten recoveries, taken from University college records—in all, twenty-five cases—the author arrives at the following conclusions :

(1) That in all cases of intussusception in children injection of water or manipulation should be at once resorted to if the patient is seen within a few hours of the onset of the strangulation.

(2) That if these means fail after a fair trial, not too much prolonged, laparotomy should be at once done as the safest treatment.

(3) That there is a certain proportion of cases, among all the varieties of intussusception, which no amount of injection will relieve, or in which injection would be dangerous, and these can only be dealt with by opening the abdomen.

# PATHOLOGY

IN CHARGE OF

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## THE LOCAL LESION OF SCARLET FEVER.

The Manchester *Medical Chronicle* for January of this year contains a twenty-page article by W. Dowson, late senior medical officer to the Bristol Dispensary, of which the above is the title. The object of the writer is to show that scarlet fever should be considered as primarily a disease of the throat, the tonsils being first affected, and that constitutional symptoms are due to secondary absorption. We propose to give but a very short résumé of the paper, but would call the attention of our readers to it. The question is one of extreme interest, not only from the pathologist's standpoint, but also to the therapist.

The writer starts out by calling attention to the fact that, contrary to the generally accepted opinion, man has a marked natural immunity against scarlatina. His own experience as medical officer in the Bristol Dispensary enables him to speak with authority on this point, and he quotes, in addition, Whitelegge's statistics. Dowson's own observations show that under five per cent. of the population in large centres suffer from the disease. The result of investigation of liability at different ages, also, is very striking. Ninety-six per cent. of the cases occur during the age period 0-15 years. The greater portion of the remainder occurs before thirty years of age. Knowing what we do of the susceptibility of children to scarlatina, we must conclude that there is an acquired immunity after the age of fifteen years, which is not due to a previous attack of the disease.

As a result of his investigations directed to the discovery of the cause of this immunity, Dr. Dowson concludes that:

- (1) The primary lesion of ordinary scarlet fever is in the tonsils.
- (2) This disease is a local disease of these parts, and associated lymph glands, the general symptoms being caused by the absorption of toxins produced by the microbic growth at the local lesion.

(3) The incidence of the disease and the subsequent immunity are related to the structure and life history of the tonsils.

In support of the above conclusions these reasons are advanced :

In young infants, the tonsils are little, if at all, developed ; in the same class scarlatina is rare.

In scarlatina the tonsils are almost always affected ; they are not affected in the very cases in which there is a probability of local infection having occurred at some unusual point, as in surgical or puerperal scarlatina.

In cases having suffered from tonsillitis in scarlet fever, the tonsils are almost invariably found to have been much damaged ; in cases where the tonsils are found normal, scarlatina has rarely occurred.

Tonsillitis is the first sign apparent to both patient and observer ; it recurs in relapses ; its severity is directly proportional to the severity of the other associated features of the disease.

The tonsils atrophy markedly after thirty years of age, and scarlatina is found with extreme rarity after that age.

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#### CRENATED BLOOD CORPUSCLES.

According to Holbrook (*American Monthly Journal of Microscopy*, June, 1893), crenated corpuscles are more numerous, and crenation occurs more rapidly, the more vigorous the individual from whom the blood is taken, and the better its color. Several hours pass before crenation occurs in the blood of a chlorotic, and then the corpuscles affected are comparatively few. It is a mistake to suppose that the phenomenon is seen especially in the blood of drinkers. If a layer of blood be protected against evaporation, crenation will disappear in seventy-two hours. Crenation is probably due to contraction of the network contained by the corpuscles ; and, although hematoblasts do not crenate, still their borders become irregular.

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#### PERNICIOUS ANEMIA.

Fischel and Adler found streptococci in a case of anemia which answered both morphologically and histologically to streptococcus pyogenes. The patient had been wounded in the foot, and the wound had healed. A fever came on, which resembled more that of sepsis than pernicious anemia. The red blood corpuscles were greatly diminished. Sterilized cultures of the streptococcus were injected into rabbits, with the result that the red corpuscles diminished from 6,000,000 before the injection to 1,300,000 before death. Iron was found in the liver. The conclusion is that the products of the streptococcus induce a pernicious anemia.—*Zeitschr. für Heilkunde*, Bd. xiv., Hft. iv.

## ALBUMINURIA IN HEALTH.

Flensburg examined the urine of fifty-three soldiers from eighteen to twenty-two years of age ; he found transient albuminuria in more than one-half of them. It was more frequent in the middle of the day than in the morning, and much more common just after a cold bath.—*Rev. Int. de Bib. Med.*, etc., Dec. 10th, 1893, p. 430.

## JONES (E.L.) ON THE CAUSES OF CHLOROSIS.

Until the age of about fifteen, the specific gravity of blood is about the same in both sexes ; after that, the specific gravity in the female falls, while it rises in the male. In the healthy female there is, between the ages of sixteen and twenty-two, a marked fall of the lower limit of variation at a time when the mean also becomes lower. Typical cases of chlorosis all occur between the ages of fourteen and twenty-six. The lowest specific gravity observed was 1,032 in a girl aged twenty-four ; but the blood had a specific gravity below 1,037 in sixteen out of eighty-seven cases. These specific gravities are among the lowest which Jones has met with in any disease. There is no other common condition in which the specific gravity of the blood undergoes such profound alteration, and this is almost entirely due to a reduction in the amount of hemoglobin. There is a tendency to an increase of the specific gravity of the serum of the blood in the female after puberty. No such change takes place in the male. The specific gravity of the plasma is not necessarily altered in chlorosis, and the blood is not necessarily hydremic.

The writer is convinced that the chlorosis is an exaggeration of a change which normally takes place in the blood of a female at puberty, a change which, like the chlorotic condition, does not affect the blood of the male.

From the results of experiments on animals, the writer believes that there is a relation, as yet unexplained, between chlorosis and disturbances of innervation in the direction of dilatation of the gastro-intestinal vessels.

The writer then outlines his theory of the manner in which chlorosis is probably produced. In the healthy female the amount of hemoglobin is always reduced after puberty—reduced in order, perhaps, to lessen katabolism, and to lead to a storing up of tissue food, some of which is stored as fat beneath the skin, etc., and some as proteid, existing partly in the blood plasma, which, consequently, has a higher specific gravity than it had before puberty, and a higher specific gravity than is found in the male.

In the normal female there is, at each menstrual period, a dilatation of the vessels of the pelvic viscera, which does not extend to the gastro-intestinal vessels, and the blood is little altered by this condition of things.

In some females, however, the dilatation of the gastro-intestinal vessels results from shock, chill, or any of the well-known exciting causes of chlorosis. This is sometimes evidenced by disturbances of digestion, by gastric pain, vomiting, hematemesis, or melena, and it is accompanied by and may in some way be the cause of, the blood changes occurring in chlorosis.

The cases of hematemesis in which there is no actual ulceration have been sometimes regarded as instances of vicarious menstruation. If an increase of the blood quantity takes place during the inter-menstrual periods, one can readily understand why it should escape from any congested surface.

Chlorosis does not occur in males, both by reason of the fact that in males the amount of hemoglobin in the blood constantly increases after puberty, and also by reason of the fact that there is a more stable nervous system—with less tendency to these local flushings—and also because of the absence of the menstrual stimulus.—*British Medical Journal*, September 23, 1893.

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#### THE BACTERIUM COLI COMMUNE A CAUSE OF APPENDICITIS.

G. Ekehorn makes the following summary of his investigations. The primary changes in appendicitis—the catarrh and subsequent thickening of the mucous membrane and of the walls of the appendix—are the same in degree and frequency, whether fecal matter be present or not; they are not, therefore, dependent upon the latter, and we cannot with reason infer that the presence or absence of fecal matter has any causal relation with them from our present knowledge. If we admit that virulent bacteria may, after gaining entrance within the processus vermiformis, induce these primary changes and cause a catarrhal inflammation with intense swelling, edema, and infiltration of the appendical wall, it is strictly in accordance with our experience of their behavior in other parts of the human organism. The correctness of this supposition, which may in the near future be verified by experimental evidence, has not as yet been proven.

In an appendix thus pathologically affected fecal matter may, through its presence, acquire grave secondary importance as touching the course of the appendicitis, partly through its pressure upon the edematous, infiltrated wall, in this way becoming a secondary cause of ulceration, gangrene, and perforation, and partly through diminishing the lumen of the appendix. In consequence of such swelling of the appendical wall, a narrowing is produced at each transverse flexure of the appendix. The stenosis obtains a secondary significance, analogous to that of the fecal matter.

The author seldom found pathogenic bacteria, in great numbers, in the colon. The processus vermiformis may be regarded as predisposed to

infection. The bacteria easily find in it an appropriate medium for their development, and for the exercise of their pathogenic functions.

As the various pathogenic bacteria differ as to their effects, the appendicitis will present itself under different forms. It is evident that tuberculosis and actinomycosis of the appendix, not infrequently observed, differ entirely from ordinary appendicitis.

The pathogenic bacterium most frequently found in the colon is the most common cause of appendicitis. This is the bacterium coli commune (Escherich). This bacterium may be pathogenic for man, and become virulent to a high degree; it is pathogenic for guinea-pigs and other animals used for experimental purposes.

The bacterium coli commune was present in pure culture in the contents of the processus vermiformis, in a chronic catarrhal appendicitis which was in the intermediate stage of calm, in an exacerbation of a chronic catarrhal appendicitis, and in an acute gangrenous appendicitis. It was observed, always in pure culture, in the peritoneal exudation after perforating appendicitis, and in the pus from an intraperitoneal pelvic abscess after perforating appendicitis.

The bacteria of the colon from a chronic catarrhal appendicitis, that was, for the time being, in a state of calm, appeared to be less virulent than the bacteria from a developing or an acute appendicitis, although they were very highly virulent for guinea-pigs, which is analogous to that which has been found true in regard to the bacterium coli in normal feces, on the one hand, and the alvine discharges of diarrhea and enteritis, on the other.

This, to the author, seems to prove, with the highest probability, that it has had an important rôle to act, and has not been present as a passive element.

According to the author, it may be presumed, almost to a certainty, that bacteria are the principal disturbing factors in the acute stage of appendicitis, the fecal matter of the dilatation through retarded secretions being only subordinate factors. In all probability, the primary changes in appendicitis (catarrh and the thickening of the wall) are induced by the bacteria.—*Lakareforenings förhandlingar*, Vol. xxviii. Nos. 2, 3, pp. 113-150, Upsala, 1893.

# HYGIENE AND PUBLIC HEALTH

IN CHARGE OF

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## REPORT ON TUBERCULOSIS.

Dr. Herman M. Briggs, chief inspector of the division of pathology and bacteriology of the New York Health Department, has presented a report to the Board of Health recommending the adoption of measures for the prevention of consumption, which he officially declares to be a contagious disease. Among other things, he recommends that the Department of Public Charities and Correction be requested to set apart one of the hospitals under its charge, to be known as the Consumptive Hospital, to be used for the exclusive treatment of this disease, and that, so far as practicable, all inmates of the institutions under its care suffering from tuberculosis be transferred to this hospital.

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## TUBERCULOSIS AND BOARDS OF HEALTH.

At the eighty-eighth annual meeting of the Medical Society of the State of New York, held in Albany, February 7th, 1894, a resolution was adopted earnestly urging local boards of health to place tuberculosis on the list of infectious diseases, and approving the efforts of the State Board to control this disease.

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## PROVINCIAL BOARD OF HEALTH.

The Provincial Board of Health met in the Parliament Buildings on February 15th, Dr. Cassidy in the chair, and the following members present: Drs. Bryce, Covernton, MacDonald, Kitchen, Rae, and Vaux.

The chairman, Dr. Cassidy, delivered an address, in which he outlined the progress of sanitation in Ontario during the past year. He considered it a subject of congratulation that there were so few cases of smallpox in Ontario during the past year, considering the prevalence of this disease in England and the United States.

Dr. Montizambert, Superintendent of the Dominion Quarantine Station at Grosse Isle, who was present, was invited to address the board, and mentioned some of the methods pursued at his station for the prevention of the spread of smallpox and other contagious diseases.

Dr. Rae moved the following resolution, which was seconded by Dr. Kitchen, and carried by the board :

*Resolved*, that in view of the prevalence of smallpox in Europe, and the consequent danger of its introduction into Canada, as seen in the number of ships arriving in quarantine during the past season with the disease on board, and recognizing the desirability of removing this danger by vaccination or re-vaccination of crews or passengers, the board would draw the attention of the Dominion Minister of Agriculture and the Superintendent of the Dominion Quarantine to the matter of having vaccination at the port of departure made compulsory in all cases.

The secretary, Dr. P. H. Bryce, read a number of communications on questions of sanitation in various localities, which occupied the attention of the board for some time, after which Dr. Bryce read his report on "Tuberculosis in Ontario." This important subject was dealt with in the report in a very exhaustive and comprehensive manner, both as to the cause and prevention of this disease in man and animals. The report, with some slight amendments, was adopted, and was ordered to be printed. Those who are interested in the repression of tuberculosis should procure a copy of this report, as it is one of the best of recent papers on this subject.

Regulations to prevent the spread of scarlet fever were also adopted by the board.



# Editorials.

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## BACTERIOLOGICAL LABORATORY.

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**A**MONG the recent advances in scientific medicine, some of the most important are connected with the subject of bacteriology. While we are doing something in connection with that subject in Ontario, we are certainly not keeping abreast of the times. We learn from the *British Medical Journal* that the Hungarian Government has established a bacteriological institute at Buda-Pesth, for the purpose of giving facilities for the study of infectious diseases from the scientific point of view; for the employment of bacteriological methods for the combating of such diseases; for general bacteriological researches; and for supplying information on bacteriological questions to public authorities and private inquirers.

The Government of our province is wealthy, and boasts of having a handsome surplus on hand. It is to be hoped that it will soon spend a portion of its wealth in building a large and completely equipped pathological laboratory. It would seem most unfortunate if any jealousy or rivalry between the medical schools should prevent an undertaking of such vast importance. Such an institute would certainly benefit the state. Medical students would have a chance to learn many valuable lessons in it; but, as far as they are concerned, the work would be mostly post-graduate in character. In any event, it should be open to all. We are not without hope that something of the kind will be established in the near future.

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## THE ABUSE OF THE HOSPITAL SYSTEM IN GREAT BRITAIN.

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**T**HE question of the "gigantic abuse" of hospitals in Great Britain has lately been freely discussed in both the medical and lay press of that country. It is said by many that the hospital system, in both cities and towns, is grossly abused, and that, as a consequence, the public are seriously demoralized, while the hard-working doctors are proportionately robbed.

The prevailing views appear to be that such abuses should be remedied by the establishment of provident dispensaries where fixed charges shall

be paid for services rendered. In fact, such dispensaries do now exist in certain localities. The proposed or actual charges are somewhat as follows: sixpence for a consultation; one shilling for a day visit; five shillings for a night visit; midwifery fee, fifteen shillings, etc.

They are now wrestling with the vexed question in Birmingham. The scheme under consideration is somewhat as follows: Two dispensaries are to be established in connection with the two hospitals in the city—the General and Queen's Hospitals—the staff of these dispensaries being entirely stipendiary. Admission to these dispensaries is to be obtained by means of tickets, to be sold at a certain rate to subscribers, who may give them to persons whom they recommend, or use them themselves if they are poor. Admission to the out-patient department of the regular hospitals is only to be obtained through these dispensaries, except in the case of accident.

The whole question appears to be surrounded by almost insurmountable difficulties. The remedies proposed appear to us to be eminently unsatisfactory. Sixpenny and twelve-penny work seems rather undignified for members of a so-called noble profession, whether it be earned in provident dispensaries, or in private practice. Our Canadian lodge practice seems to us to be bad enough; but the British dispensary business is, if anything, one degree worse

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### GROSS CLEANLINESS IN OBSTETRICS.

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IN our last issue we referred to the reports of the Registrar-General of Great Britain, which showed that the mortality rates from puerperal septicemia are still very high in the United Kingdom. We also quoted Dr. Boxall's views to the effect that the use of antiseptics in recent years has greatly improved the condition of matters in maternity hospitals, but that in general practice the mortality has been but little reduced as a rule, and not at all in some districts.

The *New York Medical Journal*, referring to this subject in an article entitled "Gross Cleanliness in Obstetrics," suggests the possibility that our bacteriologists and teachers of obstetrics have "overshot the mark," and have thus got above the heads of their medical students. The writer thinks it might be well, in our medical schools, to have two courses of lectures on obstetrics: the one thoroughly scientific, and the other eminently practical. In the one course, as we understand him, the students would get lessons in "microscopical cleanliness," while in the other they would receive instructions in "gross cleanliness." It is also suggested that the microscopic variety should be maintained in hospitals, or in

private cases when infection is feared, while the gross cleanliness would answer in ordinary cases in routine obstetric work.

We do not think that the terms, gross and microscopic, are exactly suitable ; but we quite agree with the idea that our schools should impart instruction in asepticism and antisepticism in both a scientific and practical way. We sincerely trust that they are endeavoring to do so now. Most, if not all, pretend that they are, and we venture to hope that they are meeting with a fair amount of success.

The subject is one of vast importance. Preventable deaths are occurring in large numbers from year to year. We hope the numbers in Canada are diminishing, but the general results are still far from satisfactory. Women die from puerperal fever, notwithstanding the supposed excellent teaching in our schools and hospitals, and the numerous and wise discussions in our medical societies. Let us continue to preach and teach ; let us work diligently in season and out of season ; let us ever press forward toward the goal of perfect cleanliness, which, after all, is the most potent barrier against septicism. Germicides are useful in a way, as adjuncts, but that is all. He who thinks that antiseptics will counteract the evil influences of dirty fingers, dirty instruments, or dirty surroundings, and acts accordingly, is a dangerous person. Yet many such there are, and much evil do they accomplish.

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### SHOULD PHYSICIANS CHARGE EACH OTHER FOR MEDICAL SERVICES ?

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THE question of payment for services to the families of brother physicians has recently been discussed by certain American medical journals. It is said that a few physicians and surgeons have adopted the custom of rendering accounts in the ordinary way at tariff prices, while others charge half the regular fees. This is in accordance with the old saying, so frequently repeated, that "business is business," which, being translated, generally means that the particular "business" referred to includes something small, or mean, or probably both. We trust that the numbers of physicians who deal with their brethren in distress on so-called business principles are exceedingly small in the United States ; we hope they are *nil* in Canada.

The old custom of helping each other in sickness and in distress is one of the most praiseworthy that has ever been known to the profession of medicine. If there be any good in us, the observance of this sort of

kindly reciprocity is likely to bring it to the surface. We believe that physicians, as a rule, give their assistance perfectly freely and ungrudgingly under such circumstances. If we are wrong in our views on this subject, we sincerely hope that no friend or enemy will ever enlighten us. But we are not wrong ; we are right. The good that is in the action has come down to us from the grandest and noblest of physicians through all ages. Let us treasure it as a sacred trust ! Let the few creatures who treat their brother physicians on strictly commercial principles be simply and silently ignored. Let us remember only the habit of the great mass of our profession, including all who are really high-minded.

## Book Reviews.

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**THE PHYSICIAN'S WIFE ; AND THE THINGS THAT PERTAIN TO HER LIFE.**  
By Ellen M. Firebaugh. With portrait of author, and forty-four photo-engravings of original sketches. In one crown octavo volume of two hundred pages. Extra cloth, \$1.25 net. Special limited edition, first five hundred copies, numbered, and printed in photogravure ink on extra fine enamelled paper ; bound in half-leather and vellum cloth, \$3.00 net. Philadelphia : The F. A. Davis Co., Publishers, 1914 and 1916 Cherry Street.

The writer of this work was invited in 1892 to read a paper before the Æsculapian Society of the Wabash Valley, the subject assigned being "The Physician's Wife." The address was very highly appreciated by the members of the society, and was published in pamphlet form for distribution. On the advice of a number of friends, the authoress decided on enlarging her paper, and, as a result, we have this very readable and interesting book, the contents of which relate especially to the wives of country doctors.

**THE ART OF LIVING IN AUSTRALIA :** Together with three hundred Australian cookery recipes and accessory kitchen information by Mrs. H. Wickens, lecturer on cookery to the Technical College, Sydney. By Philip E. Muskett, late surgeon to the Sydney Hospital, formerly surgeon superintendent to the New South Wales Government ; medical superintendent, Quarantine Station, Sydney ; a senior resident medical officer, Sydney Hospital. Eyre & Spottiswoode : London, Edinburgh, Glasgow, Melbourne, Sydney, and New York.

This is an interesting book, particularly from a sanitarian point of view. It gives a minute description of the climate of Australia, especially in reference to its semi-tropical character. He then goes on to discuss what he calls the "alphabetical pentagon of health," containing the five essentials, namely, ablution, bedroom ventilation, clothing, diet, and exercise, devoting a separate chapter to each. He then describes the various kinds of food, recommending those which he considers most conducive to health, and, in conclusion, gives a large number of Australian cookery recipes and accessory kitchen information.

**TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.** Volume VI., for the year 1893. Philadelphia : Wm. J. Dornan, Printer, 1894.

We have received a copy of the Transactions of the last meeting of this association which was held in Detroit in June, 1893, under the presidency of Dr. L. S. McMurtry, of Louisville, Ky. The attendance was somewhat smaller

than the average, as was usually with most meetings of medical societies last summer, probably from the counter-attractions of the Chicago Fair and the Pan-American Medical Congress. Several admirable papers, however, were read, and ably discussed, and altogether the meeting appears to have been a very profitable one. We are told by those who were present that it was an exceedingly pleasant one, largely on account of the kind hospitality shown by the profession of Detroit.

Drs. Howitt, of Guelph, and Ross, of Toronto, were the only Canadian Fellows present. As we have before announced, the association decided to hold its next meeting in Toronto, in September, 1894.

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ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by Charles E. Sajous, and seventy associate editors. Volume V. The following subjects are treated in this volume: General Therapeutics; Experimental Therapeutics; Electro-Therapeutics; Gynecological Therapeutics; Climatology; Balneology and Hydropathy; Hygiene and Epidemiology; Anomalies and Monstrosities; Anatomy and Physiology.

It is impossible to review at length the work which has been done in connection with this volume. The "Annual" is now acknowledged to be a mine of wealth in the information presented regarding the literature of medicine and allied sciences. The present volume is quite up to the standard of its predecessors, and, in some respects, surpasses former publications. A very interesting section is presented on Anomalies and Monstrosities, and a complete summary of the more important contributions to the subject which have been made during the year is detailed. In Anatomy and Physiology the review is also full, and we find here short abstracts of many important papers. We have, for instance, reference to the advances which have been made in the investigation of the anatomy of the central nervous system; a field of research which has been so prolific of late since the introduction of new and important methods of studying the minute structure of nerve tissue. We find in Physiology reference made to papers on that much-vexed question—the structure of striated muscle; and, again, an extended series of abstracts from papers dealing with the localization of nerve centres.

This volume contains the general index, which is arranged in a very elaborate fashion, and must have involved a prodigious amount of labor on the part of the compiler.

We have nothing but commendation for this work, which is singularly complete in every detail.

## Medical Items.

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DR. WALTER P. THOMPSON is practising in Orillia.

DR. A. H. PERFECT has taken the place of Dr. Gillespie in West Toronto Junction.

DR. W. R. GILLESPIE, of West Toronto Junction, has gone to Penetanguishene, and formed a partnership with his brother in that town.

REV. JAMES JOHNSTON, M.D., Jamaica, spent a part of February in Toronto. He delivered some interesting lectures on his experiences in his recent journey through Central Africa.

AS we mentioned in our last issue, Drs. O'Reilly and Burns, of Toronto, are away in quest of health. They remained in Atlantic City until the 24th of February, when they went to New York. After spending a few days there, they sailed for Savannah, Georgia, March 3rd.

CIGARS AND INFECTION.—Cigars smokers will probably be pleased to hear from Dr. Kerez, of Rome, that there is no danger of becoming infected with tuberculosis from smoking cigars manufactured by people who suffer from that disease. Even should such cigars become contaminated in the worst possible degree, they will not contain any infective property for a period exceeding ten days.

DR. THEODORE BILLROTH, of Vienna, died February 5th, from heart disease, and his funeral, on February 10th, was attended by immense numbers, including all sections of Vienna society. Farewell speeches were delivered at the graveside by Prof. Gussenbauer, for his pupils; by Prof. Chrosak, for the Vienna Medical Society; by Prof. Vogel, for the Professorial College; and by Freiherr Von Mundy.

MEDICAL TITLES.—In an article entitled "The Unqualified Assumption of Medical Titles," in the *British Medical Journal*, Feb. 17th, the writer says: "We have before us at the moment a circular purporting to be issued by a person with the following designations after his name: M.A., M.D. (Bc.) Eng.; M.D., LL.D., U.S.A.; Gold Medallist in Sciences, Eng.; Member of the Magnetic and Botanic College of Safe Medicine, London; late of Trinity Medical College and General Hospital, Toronto, etc." Further particulars reserved.

THE International Sanitary Conference, at Paris, has formulated a series of measures to prevent the Mecca pilgrims from spreading the cholera.—*Boston Medical and Surgical Journal*.