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TEMPERATURE IN THE PUERPERAL PERIOD.*

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We are living in an age of great scientific activity and progress—hosts of workers in the laboratory and at the bedside, with microscope test-tube and instruments of precision, are testing, trying and proving. Old doctrines and beliefs venerable with the traditions and authority of ages are being rudely overthrown, old methods revised, and everything brought to the crucial test of observation and experiment; meanwhile the general professional mind is kept in a state of unrest, sometimes even of positive bewilderment. It is well, therefore, once in a while, to cry a halt and review the field, count up our gains and losses, note what is being done in other departments, see how it tallies with our own results, correlate the new knowledge with the old, and estimate its influence upon our beliefs and practice. Believing that an attempt to review the whole field of obstetrics in the short time at my disposal would be unsatisfactory as well as unprofitable, I have selected as the subject matter of this address the temperature of the puerperal period. I have chosen this subject partly because it is suggestive, and partly because general notions respecting it are often hazy if not erroneous, and the practice founded thereon is sometimes uncertain timorous and procrastinating, at other times rash and injudicious. Before

*The address in Obstetrics delivered before the Canadian Medical Association, at Toronto, 10th September, 1890.

we can understand the abnormal and pathological, we must have clear ideas respecting the normal and physiological.

During *gestation*, the temperature is usually the same as in the healthy non-pregnant state. Although Lehman and others have stated that there is elevation of temperature during the last four months of pregnancy, later observations show that such elevations are the rare exception, not the rule. This question has been recently pretty thoroughly worked out in the Budapest University Klinik.* In healthy pregnant women, the average temperature during the last four months was found to be—

3 A.M., . . .	97.02°	}	Average 98.47°
8 A.M., . . .	98.78°		
12 . . .	98.64°		
6 P.M. . . .	98.71°		

At the *beginning of labor* the temperature is normal, but rises as labor progresses. It rises higher in *primiparæ* than *multi-paræ*, higher in *difficult and protracted* than in *short and easy* labors, higher when the *second stage* is difficult and prolonged. The Budapest observations give the following :

In labors of less than 12 hours, . . .	98.8°		
“ “ more “ “ . . .	99.0°		
“ when 2nd stage lasted 1'-15',	98.76°		
“ “ “ 15'-60',	98.98°		
“ “ “ over 60',	99.03°		
<i>Regular</i> labor {	Primiparæ, 98.89°	Aver. {	Primiparæ, 99.07°
} Multiparæ, 98.73°			
<i>Irregular</i> labor {	Primiparæ, 99.56°		
} Multiparæ, 99.12°			

Temperature of 1st day.—As we have just seen, the temperature rises during labor and reaches a point more or less high, according to the length and severity of the labor. After the conclusion of labor, it rises steadily, then falls. Broadly speaking, it may be said that there is

- { 1—A rise during the first 12 hours.
- { 2—A fall “ second “

It rises higher in *primiparæ* than *multi-paræ*, higher after irregu-

* Archiv fur Gynäkologie. Band xxxii, Heft 3.

lar than after regular labors, and the higher it rises the longer it takes to fall to the minimum.

In multiparæ it reaches its maximum in 6–7 hours after the birth of the child, then falls uninterruptedly for 10–12 hours, so that

{	<i>Max.</i> is reached in 6–7 hours after birth,
	<i>Min.</i> “ “ 16–19 “ “ “

This rise and fall of temperature after labor is modified by the usual *diurnal* rise and fall (*i.e.*, rise during the day and fall during the night), so that the actual temperature of any given case is really the resultant of these two temperature curves. It is evident therefore that the temperature of the first day hinges upon the time of day when labor terminated. If the twelve-hour rise which follows labor coincides in point of time with the normal daily rise, the temperature may run up to 100° or even 101° , but if it is met and counterbalanced, so to speak, by the daily physiological ebb, there may be little or no observable elevation of temperature. This may be tabulated as follows :

In births from 5 a.m. to 2 p.m. the rise is most marked. The temperature usually runs up 1° – 2° and reaches its *max.* about 5 P.M., when it begins to fall and reaches its *min.* about midnight. Births at 2 P.M. show the highest temperature,— 101.4° has been observed by 5 P.M., the *min.* not being reached till the next morning.

In births from 2 p.m. to 6 p.m. the rise is growing less marked.

In births from 6 p.m. to 4 a.m. the ebb is encountered and the rise is very slight.

In a general way it may be said that [rise.

{	Births during the night are generally followed by little or no
	“ “ “ day are generally followed by marked rise.

During the first day the normal limits may be set down as 98.5° to 100.5° .

From the 2nd to 8th day, the temperature follows the ordinary physiological course, the average temperature from day to day varying only $.11^{\circ}$ – $.56^{\circ}$ F. It is important, however, to remember the diurnal variation when estimating the significance of any given temperature. There is a daily variation between the

maximum and minimum of 1.2° – 1.4° F. The course of the daily temperature is as follows: it rises from 4 A.M. to 10 A.M., remains tolerably constant (with slight rise after meals) till 6 P.M., then falls steadily till midnight, and remains at the minimum till 4 A.M., when it begins to rise once more.

Max. temperature = 10 A.M.

Min. " = 12 midnight.

Average " = 6 A.M. and 8 P.M.

To get the average temperature of the day it should be taken at 6 A.M. and 8 P.M., or if taken at other times allowance must be made. If great accuracy is required and four observations can be taken, they should be made at

$$\begin{array}{rcc} 2 \text{ A.M.} & 8 \text{ A.M.} + 10 \text{ P.M.} & 2 \text{ A.M.} + 2 \text{ P.M.} \\ 8 \text{ A.M.} & \hline 2 \text{ P.M.} & 2 & \hline 10 \text{ P.M.} & & 2 \end{array}$$

The chief points respecting the normal temperature may be summarized as follows:—

1. The temperature of a healthy pregnant woman is the same as in the healthy non-pregnant state.

2. Labor raises the temperature, the amount of rise depending upon the length and severity of the labor, and particularly of the second stage. The rise is greater in primiparæ than multiparæ—greater in irregular than in regular labors.

3. In the first day, the temperature rises for twelve hours after the birth till it reaches the maximum, then falls for twelve hours till it reaches the minimum. The height to which it attains depends chiefly upon the time of day when labor terminates. The rise is greatest in labors which conclude during the day, least in those which conclude during the night.

4. From the 2nd–8th day there is a variation of less than $\frac{1}{2}^{\circ}$ in the average temperature from day to day; but each day there is a difference of 1.2° to 1.4° between the maximum and minimum of that day. The average temperature is observed at 6 A.M. and 8 P.M., the maximum at 10 A.M., the minimum at midnight.

Pulse.—Although scarcely in the limits of my subject, it may

be of interest to state briefly the course of the pulse during the puerperal period. While the temperature begins to rise immediately after labor, the pulse begins to fall, and keeps falling steadily for eight days, at the end of which time it is 9–10 beats per minute slower than at the conclusion of labor. Beginning at 61 it falls to 50–51. This slowing down is equally well marked in multiparæ and primiparæ. Like the temperature, there is a diurnal variation in pulse curve, which is on the average 17.

Pulse is slowest at midnight, when temperature is lowest.

“ quickest at 8 A.M. Like the temperature it rises after meals.

From the observation of 2,000 consecutive cases in the Marburg klinik, Ahlfeld found that 68.8 per cent. recovered without rise of temperature beyond the normal limits. In private practice the proportion of non-febrile cases should be at least 80 per cent. We have no exact data by which we can determine what the rate of morbidity in private practice really is, but it is far higher than it should be. Few practitioners use the thermometer as a routine practice in their obstetric work, and without systematic thermometric observations, statements respecting the presence or absence of fever after confinement have no scientific value. Some men never have perineal tears in their practice, and some never have fever in their puerperal patients; but in both cases the explanation is simple—they never really look for such things.

Causes of Fever.—When febrile symptoms do occur, to what are they attributable? Some men find an all-sufficient cause in the so-called milk-fever—for do not the laity accept milk-fever as a good and sufficient reason for almost anything from a cracked nipple up to a phlebitis or septic peritonitis—and have not the old nurses many a blood-curdling tale to tell of the dire effects of milk when it goes to the legs, the womb, or the brain. In well-regulated hospitals where exactness of observation is possible and the surroundings and treatment of patients are under thorough control, it has been proved over and over again that lactation is a physiological process whose establishment is unattended with fever. Occasionally in nervous, high-strung

women a rapidly-filling breast becomes engorged and tender, and there is a sudden rise of temperature; but in such cases the rise is only temporary and yields at once to appropriate treatment. In hospital practice, since we have learned to seek the cause of mastitis in the absorption of septic matter through abraded nipples, or in irregular, inefficient or imprudent nursing, and have adopted preventive measures accordingly, swelled inflamed breasts with fever are becoming far more uncommon.

A rational treatment of fever must be based upon clear ideas regarding its etiology. We must do away with venerable old myths and grasp the fundamental fact that the normal temperature curve during the puerperal period differs very little from that of health,—that lactation is a physiological process which should not be attended with fever, and that when febrile symptoms do occur, their explanation must be sought in some pathological condition, not in the establishment of a physiological function.

What, then, are the causes which produce fever in the puerperal period? For convenience of consideration, we may divide all febrile conditions of the puerperium into

INFECTIOUS AND NON-INFECTIOUS.

Infectious.—In the great majority of cases, fever is the result of wound infection. Living ferments are introduced from without through abrasions or lacerations in the genital tract. The action of the microbes may be direct (destruction of tissue or mechanical obstruction) or indirect (producing leucomaines, the absorption of which is followed by rapid and powerful toxic effects). It is an error, very prevalent and very injurious in its influence upon practice, to look upon slight febrile movements as only *ephemeral* fever of no special significance or consequence, and to think of septic absorption only when dangerous constitutional symptoms are present. We should try to realise that septic wound-infection may be either benign or malignant, and may cause symptoms either mild or severe. In two cases, one mild the other severe, the morbid agent may be the same, but the difference in the course and severity of the attack lies in the

amount or intensity of the poison absorbed, and the resisting power of the organism. Experience proves that smallpox, diphtheria or scarlatina may be sometimes so mild as to be scarcely recognisable, at other times so malignant as to destroy life in a few hours. Yet the nature of the poison is the same in both cases, and the mild case may spread the disease in a malignant form to others. So in like manner cases of septic wound-infection may vary greatly in intensity, though produced by the same poison, developing and propagating the same poison, and the danger of infection may be as great from the mild as from the severe. If we continue to regard all mild febrile disturbances as ephemeral fever, or milk fever, and only the severe cases as septic wound-infection, we can not expect to work out a rational treatment founded on a scientific basis. How often we notice in scarlatina epidemics that the first couple of cases in a ward or family are slight—the first mutterings of the storm—and then suddenly a child is stricken down with the malignant form. The infective agent, mild at first, seems to concentrate and gain intensity and power as it spreads. So in hospital practice we find that several cases of moderate fever, with, perhaps, a little parametritis, usually precede the general outbreak. If the true state of affairs is realised and the warning heeded, prompt measures may avert disaster. I believe the same thing holds good in private practice; careful observation would show that there have been moderate febrile symptoms among the patients attended by certain physicians or nurses before the onset of more general trouble in their practice.

How, then, does septic wound-infection occur? Through the numerous traumatismis in the genital tract which result from labor, micro-organisms, chiefly streptococci and staphylococci, either enter the system directly or else lodge in clots, shreds of membrane, fragments of adherent placental tissue; they multiply rapidly, generating poisonous matters which are readily absorbed and produce severe constitutional symptoms. The microbes are brought in contact with the open surfaces by the air or by means of the physician's and nurse's hands, foul instruments, utensils, clothing, sponges, dressings, etc. Traumatismis, shreds,

clots, placental fragments, may all exist in the genital tract without danger to the patient unless and until the infective microbes gain entrance. In a case recently reported, the placenta remained in utero for twenty-five days after an abortion without undergoing decomposition or causing systemic infection. For septic wound-infection the presence of infective microbes is essential. But such micro-organisms do not exist normally in the uterus and upper portion of the vagina, nor are they found in the normal lochial discharge; they must be introduced from without. I have said that they may be carried in the air; but in such a case the air must be in close communication with a foul closet or some such focus from which it derives its infective power. Infective microbes do not appear to be propagated through the ordinary atmosphere. At any rate we cannot excuse ourselves by throwing the blame on the air. It is as much our duty to see that infected air is excluded from the genitals as to see that hands, instruments and utensils are properly disinfected.* There is much useless wordy warfare going on about *auto-infection*. The confusion arises mainly from different writers attaching different meanings to this term. Without going into the question, we may safely say that if *auto-infection* means *spontaneous infection*, there is no such thing. We cannot shirk our responsibilities by playing upon words. Puerperal women do not generate septicæmia spontaneously, nor do they get it from the normal atmosphere. They are infected from without, and it is our duty to guard against such infection.

Time will permit only a hurried glance at the commonest varieties of septic fever.†

* The secret of success in obstetrical as well as gynæcological or general surgical operations lies in the care with which the operator and assistants cleanse themselves. Dr. Parkes of Chicago has just reported (*Amer. Journal Med. Sciences*, Sept. 1890) a series of thirty abdominal sections with a mortality of only four. These sections were done in the public clinic-room before several hundred students. Great attention was paid to the immediate surroundings of the patient, and Dr. Parkes says: "My own belief, which I have put in force so far as these thirty cases are concerned, is that it is what is put into the abdomen which causes trouble, and also that it is the preparation of the operator and his assistants and of everything that touches the patient about the wound from which safety comes."

† A number of charts were exhibited and explained, illustrating the temperature curve in the various conditions hereafter mentioned. These charts are too numerous to reproduce.

Vulvitis and Vaginitis—the diphtheritic form being the most serious. The first symptom is a rise of temperature, sometimes preceded by a rigor. It usually begins about the 2nd or 3rd day, sometimes on the 1st, and rarely as late as the 6th–7th. Generally the temperature rises gradually, but sometimes it jumps at once to 103–104°. It has no typical course, but is usually higher in the evening. The pulse is rapid and weak, the respiration quickened. The uterus is generally involved, the lochia scanty and offensive. Diphtheritic patches may appear on the 3rd–7th day of the puerperium.

Endometritis and Metritis—may be simple or diphtheritic. The degree of fever depends upon the severity of the infection and the promptness of treatment. If the inflammation spreads to the tubes and ovaries, salpingitis and oöphoritis occur.

Cellulitis (parametritis) and adenitis, ushered in by a chill, followed by rise of temperature. At the same time pulse and respiration accelerate. The height and duration of the fever depend upon the severity of the attack. Locally there is swelling of one broad ligament, and if the inflammation spreads the uterus soon becomes fixed. Resolution or suppuration.

Lymphangitis—may arise from either the vulva or uterus. If *vulvar*, infection has taken place through a sore in the vulva or lower fourth of the vagina, and the superficial inguinal glands swell. There is fever, rapid pulse, with general and local symptoms. If *uterine*, there is pain in the lower abdomen and the uterus is tender, especially at the cornua. The inflammation is not dangerous as long as it is limited to the uterus, but it is very apt to spread to the peritoneum and cellular tissue. The height and duration of fever depend upon the extent and severity of the inflammation.

Peritonitis—may be *local* or *general*. There is a *chill*,—a sudden rise of temperature to 103–104°,—severe constitutional symptoms set in. The symptoms of general peritonitis are graver than those of the local variety. This is one of the most dangerous of puerperal diseases. The pulse may run 120–160, respirations 26–56, tympanitis, etc. The inflammatory action is liable to involve other serous surfaces, and pleuritis, pericarditis may appear, or pneumonia, endocarditis, phlebitis or arthritis.

Acute Septicæmia—Common in old times, in epidemic form, in lying-in hospitals. Soon after delivery there is an acute rigor, temperature runs up rapidly and either remains very high or sinks below normal, the pulse is rapid and feeble, the face anxious and pinched, tongue dry and brown. Death in a day or two, or within a week.

Thus, in the group of febrile affections due to infection by microbes or their products, we have more or less rapid rise of temperature, a more or less continuous duration of the same, with rapid pulse, quickened respiration, and other constitutional symptoms. Occasionally there is subnormal temperature, but then there are signs of profound prostration. Sometimes chills followed by fever recur every two or three days, indicating fresh periods of absorption.

Besides septic wound infection, many other causes may elevate the temperature. During the puerperal period pre-existing febrile conditions are aggravated and dormant tendencies roused into activity.

Lung Affections.—*Phthisis* may advance rapidly after labor and give rise to symptoms which might be readily mistaken for septic mischief.

Pneumonia, pleurisy or bronchitis may underlie the fever, and for a time avoid detection.

The *exanthemata, diphtheria, erysipelas, malaria, rheumatism* may precede, complicate or follow labor. They may have been incubating at the time of labor and only manifest themselves during the puerperium; in fact such diseases are apt to precipitate labor. The effect of labor upon febrile cases is generally more or less disastrous,—the pain, violent muscular effort, interference with respiration and circulation, and the loss of blood are apt to produce a condition not unlike surgical shock. The temperature falls below normal, the pulse becomes quick, irregular and feeble, there is cold, clammy sweat, and great exhaustion. There has been great difference of opinion as to the effect of the exanthemata, diphtheria and erysipelas upon puerperal women. Some maintain that *scarlatina*, for instance, is always the classical scarlatina with its typical rash and sore throat, modified, perhaps, but still quite easily recognisable as scarlatina. Others

hold that the scarlatinal poison produces a malignant form of puerperal fever undistinguishable from septic wound-infection and quite different from ordinary scarlatina. As a matter of fact both appear to be right, and a study of clinical facts reconciles conflicting opinions. If the specific poison enters by the ordinary channels (scarlatina and diphtheria through throat and lungs, erysipelas through the skin), the symptoms and course of the subsequent disease will differ but slightly from its usual type in the non-puerperal. But if the poison enters through wounds in the genital tract, a totally different train of symptoms will be observed, resembling septic wound fever of great intensity. The manner of invasion seems to modify profoundly the course of infective fevers.

Non-Infectious Fevers.—*Emotional* disturbances may undoubtedly produce elevation of temperature; the rise is generally rapid and unexpected, sometimes extreme, and the fall is usually as sudden as the rise. Whatever may be the exact explanation of its *modus operandi*, it is certain that profound psychical impressions such as grief, anger or fear clinically cause elevations of temperature. If the cause is transient, the fever will be transient; if recurrent, the fever will be recurrent; if persistent, the fever will be persistent. In hospital patients, where the irritability of organism and impairment of mental control usual to the puerperal state are intensified by the miseries inseparable from illegitimate maternity, such emotional temperatures are frequently to be seen. Anxiety about the future, the non-receipt of a letter, may run the temperature up to 104° or 105° .

Exposure to cold.—The diminished vascular tension after labor promotes perspiration and a general relaxed condition, in which chilling of the surface readily occurs. Exposure to the draught from an open window, falling asleep with neck and shoulders uncovered or with the child at the breast, or imprudently getting out of bed insufficiently clad, may cause a severe febrile attack.

Reflex irritation.—In primiparæ of sensitive, nervous organisation, high fever may follow the engorgement and distension of the breast without suppuration.

Digestive disturbances may perhaps be included in the same category. Food improper in quality or quantity, constipation, acute indigestion, may all cause temporary rise of temperature.

From what I have said, it is evident that there are a great many causes which may produce fever in the puerperal period. The proper differentiation of these causes, so as to arrive at a just diagnosis and rational treatment, is sometimes by no means easy. A high temperature may mean a great deal or it may mean nothing; a thermometric diagnosis is impossible. As septic infection is our great bugbear in obstetric practice, it is perhaps natural that we should immediately think of septicæmia when we are confronted with a febrile temperature. But we should be very careful to exclude all other possible causes before we declare finally for septicæmia and begin radical intrauterine treatment. And how many practitioners now-a-days go to one extreme or the other, either pooh-pooh sepsis and antiseptic treatment altogether, or else (ever haunted by Banquo's ghost) see sepsis lurking behind every rise of temperature. The one extreme begets passive expectancy—the other restless, fussy meddlesomeness. With clearer ideas and broader views our attitude should be calm and confident, our treatment rational.

Of the practical lessons which may be drawn from this subject, the first and most important is *the absolute necessity of rigid antiseptics as a routine practice* if we would secure the best results. If a man is to derive the full benefit from antiseptic theory and practice he must believe in it, he must use it in all cases—in the beginning as well as at the end. To be careless and slovenly while all goes well and then fly to stringent antiseptic measures when things begin to go badly, will not secure the best results. The more a man practises according to antiseptic principles, the more skilful will he become in its details and the greater will be his success. Antiseptic measures often fail because they are ignorantly or unskilfully employed. Here, as elsewhere, practice makes perfect. What are the most important details of prophylactic antiseptic practice which a man should use in his daily practice?

1. Prepare for a case of labor as you would for a major sur-

gical operation. You would not imperil an operation by uncleanness of person, instruments or appliances. Why should you take greater risks in a case of labor?

2. Prepare the field of operation. A general bath is advisable, but in private practice is not absolutely necessary. Whenever possible the vulva, perineum and lower abdomen should be thoroughly scrubbed with soap and water and then bathed with sublimate solution 1×1000 . Streptococci are not unfrequently found plentifully in the folds and about the hair of the genitals. During the second stage of labor give a prophylactic sublimate douche 1×2000 , to clear away microbes which may be in the vagina. The prophylactic douche is not necessary in private practice unless there has been leucorrhœa or irritating vaginal discharges, or suspicion of gonorrhœa.

3. Thoroughly disinfect hands, instruments, etc., which are brought in contact with the parturient canal, and see that no sponges or old syringes, bed-pans or utensils are used about the patient.

4. Vaginal examinations should be made as seldom as possible and last as short a time as possible. Lubricants are unnecessary and apt to do injury. The finger should not be carried into the uterus unless for some special purpose. Diagnosis of position is far better and more safely made by external palpation. In hospitals where vaginal examinations have been almost wholly suppressed, febrile disturbances are rare. The pernicious practice of keeping the finger in the vagina during the second stage, manipulating the os and stretching the perineum, cannot be too severely condemned. A douche should immediately follow the vaginal examination.

5. After the completion of the third stage, a careful examination should be made of the vulva, vagina and perineum in a direct light. If lacerations exist about the perineum vestibule or lateral vaginal wall, they should be brought together with stitches. Large abraded surfaces may be cleansed and dusted with iodoform, or brushed over with iodine. In maternity hospitals where minute care has been taken to close tears of the vaginal walls and cauterise abrasions, metritis, endometritis and parametritis have almost entirely disappeared.

6. Thorough cleanliness and the use of the antiseptic dressings throughout the whole puerperal period. Routine douching throughout the puerperium is unnecessary and inadvisable if proper care has been taken during and immediately after labor. Corrosive sublimate seems to be the most efficient agent for disinfecting the hands and douching the vagina. Dr. Boxall has recently made a valuable communication to the London Obstetrical Society giving the results of seven years' practice in the General Lying-in Hospital, London. He finds a great improvement in results since the introduction of antiseptics, but remarked that febrile cases increased whenever sublimate was given up for carbolic acid, Condy, creolin, or salufer, and decreased again when the routine use of sublimate was re-established. He found also that when weak solutions of sublimate were in use fever increased, but declined once more when they returned to the 1×1000 for external and 1×2000 for internal application.

If a man carries out antiseptic measures in his midwifery practice as a routine, he need seldom feel alarm when febrile symptoms appear during the puerperium, for he will generally discover the cause to be other than septic wound infection. But if he does not adopt such measures, he will always be in a state of uncertainty and doubt when fever appears. Let me urge upon the Association the advisability of more careful observation of their cases after confinement. The thermometer may be the first and at times the only external evidence of inflammatory mischief internally. A slight parametritis which would disappear after a few days longer rest in bed, may be lighted into fresh activity by getting up too soon; the thermometer would probably call attention to the existence of such a parametritis. In a word, we should treat our obstetric cases in a more scientific manner and upon surgical principles. The wounds are hidden and the ill-effects of slovenliness and inattention may not be for the moment as apparent, but they are none the less real. Gynæcologists tell us a sad tale of the miseries and sufferings of women from neglected inflammatory troubles traceable to confinement, miseries and sufferings which are quite preventable. Such a

record is not creditable to us. We should not merely be content that our patients recover, we should be seriously concerned as to *how* they recover. And surely if a little timely care and attention will secure them comparative immunity from distressing ailments which render life a burden, it is our bounden duty as humane men and intelligent physicians to realise our responsibilities and adopt every reasonable precaution.

APPENDICITIS.*

BY GEORGE E. ARMSTRONG, M.D., MONTREAL.

MR. CHAIRMAN AND GENTLEMEN,—During the past few years the attention of the profession has been directed to that morbid condition which for a long time has been designated by the term typhlitis, with one or two prefixes suggested by Musser. Able original articles have appeared from the pens of Treves, Fitz, Weir, McBurney, Senn, Bull, and others, which have thrown much light on its pathology, morbid anatomy, and etiology. Numerous cases have also been reported by practitioners in different parts of the country. Notwithstanding, there is still a considerable difference of opinion among representative surgeons in regard to several points in connection, chiefly, with the diagnosis and treatment, especially on that all-important question, the time to operate. And among general practitioners I fear there exists still more vagueness which might with profit to doctor and patient be cleared up. When so important a subject as appendicitis and its sequelæ occupies this doubtful position—a condition which calls for the most acute medical and surgical skill, and one that needs to be approached in the most prompt and decided manner—I think it proper that all those having any experience in it should bring it forward and pool it, so to speak, that all the evidence from all possible sources bearing on this malady may be analysed, sifted and arranged until more certain and definite data and guides are established, to enable us all to meet these cases and bring a larger proportion of them than at present to a successful issue.

* Read before the Canadian Medical Association, at Toronto, September, 1890.

I think the following oft-reiterated and generally accepted statements may be accepted as true :

I. That the cæcum and appendix, as first pointed out by Bardeleben in 1849, are entirely surrounded by serous membranes and are therefore intra-peritoneal.

II. Primary infiltration of cellular tissue in right iliac fossa is unknown. (*Treves.*)

III. There is no evidence of the existence of an infiltration of walls of cæcum other than that caused by a catarrhal infiltration or ulceration of its mucous membrane, the most common forms of ulcer being the stercoral, typhoid, tubercular, and perhaps syphilitic.

IV. The symptoms of a catarrhal infiltration of mucous membrane of cæcum are those of a colitis rather than typhlitis, and ulceration of cæcum does not give rise to symptoms of typhlitis unless the peritoneal covering becomes involved.

I have tried to get from the Department of Agriculture at Ottawa definite information as to the number of deaths in the principal cities of the Dominion during the year 1889, but although the mortuary tables contain all through the year space for the mention of deaths from worms, the term peritonitis was not mentioned.

The first and perhaps one of the greatest difficulties in treating this disease at the bedside is the mildness, obscurity, and often misleading character of the symptoms, rendering a positive and precise diagnosis difficult and too often uncertain. The onset is sudden; colicky pain in abdomen, often diffuse, with more or less sensation of chilliness, are usually the first symptoms. Vomiting may be present or not. Generally not more than the usual degree of constipation. Probably a loose condition of intestinal contents would favour the entrance into the appendix of any small body, as seeds.

In a certain number of cases nothing more serious than the foregoing occurs, and in a few days the patient is well again. But oftener, I think, it will be found that on the second day of the attack the colicky pain will have become more severe, tenderness on pressure increased, and becoming greater in the

region of the appendix than elsewhere. This general and diffuse pain and tenderness so often present in the early stage is one of the misleading characters. In fact, in one case occurring in Montreal the pain was all referred to the left side, although due to disease of the appendix. Why this should be so I cannot tell, but it certainly is the case in a great many instances that neither pain or tenderness are localized during the first twenty-four or thirty-six hours of the attack, and this fact should be borne well in mind. Neither is the temperature to be much relied upon. As a rule there is elevation of temperature; it may reach 100 or 102°F., but cases are on record of a normal temperature co-existent with a considerable collection of pus around appendix. In fact, as stated by Gill Wylie, a little pain and tenderness on pressure in right iliac region may be the only symptom present to indicate the presence of a pint of stinking pus ready to break into the general peritoneal cavity, there to set up a septic peritonitis that may prove fatal in twenty-four or forty-eight hours. As an example of the mildness and misleading character of the signs in some cases, I will very briefly give you an outline of one occurring in my practice a short time ago.

Miss T., aged 21½ years, a medium-sized, well-nourished girl, unmarried. Saw her on the 5th June, 1890. She complained of abdominal soreness. It was her time to menstruate. She suffered severely from dysmenorrhœa. Told me that the day before she had had a good deal of pelvic and abdominal soreness, but not more than she usually felt during her menstrual period. The day before had been wet and very cool, and clad in very light summer clothing she had spent the day on St. Helen's Island. On her return home in the evening, wet and chilled, she found herself unwell, but in a few hours the flow ceased and she had suffered from pain and vomiting during the most of the night. At the time of my visit she was feeling less pain, which was referred to umbilical region. There was no localized tenderness on pressure to be made out either in right iliac region or elsewhere, although carefully looked for. Temperature in axilla 100.5°, and pulse 100. No menstrual flow. During the next three days there was no augmentation of any of the symptoms.

In fact, so far as physical signs and subjective symptoms indicated, my patient was improving and suffering less each day than she had the day previous. On the 8th she was particularly comfortable and cheerful; bowels moved freely; only a little soreness remained in right iliac region. On the 9th I was astonished to find great increase of pain and tenderness, marked tympanitis, bilious regurgitation from stomach, a pinched expression of face, temperature 104° , and pulse 140. I lost no time in getting assistants and instruments, and opened the abdomen by a median incision. I then found general septic peritonitis, peritoneum red and in some places dark and lustreless, lymph and pus in quantity, and on reaching the appendix found it perforated, the opening being occupied with a fæcal concretion the size of a large bean, a similar one having escaped into the general peritoneal cavity, and two others remained in the appendix. Although I washed thoroughly and secured free drainage, death followed in a few hours after she was returned to bed. During the inflammation of the appendix the pain and tenderness had not been confined or at all referred by the patient to the region of the cæcum, and neither objective nor subjective symptoms had indicated the existence of a severe disease. No attempt, judging by the condition found at the operation, had been made to shut off the inflamed part, and when rupture occurred the fæces escaped at once directly into the peritoneal cavity.

In this case, on the fifth day, the temperature was normal; pulse 76, soft and compressible. No pain when lying quietly, and very little tenderness on pressure, bowels moving freely. Expression good and everything apparently progressing favourably, although only twenty-four hours elapsed between this condition of comfort and my finding a most intense form of septic peritonitis, a black, almost gangrenous condition of intestine, with the peritoneum peeling off that portion of ilium nearest the cæcum. This case shows stronger than words the importance of the early recognition of the clinical significance of colicky abdominal pain and tenderness and the disastrous results that may follow a failure to appreciate their meaning, for there can be scarcely a doubt that had I operated on this girl twenty-four hours sooner she would be alive and well to-day.

I certainly believe that if, until we know better, we called all cases of colicky abdominal pain with tenderness and a little elevation of temperature, without other apparent cause, cases of appendicitis, and treated them accordingly, our patients would be gainers.

In another group of cases, the local peritonitis so completely surrounds and firmly encloses the inflamed appendix that the results of further changes in the tissue are prevented from contaminating the general peritoneum, at least for a time. In these cases a fullness can usually be made out with some degree of certainty either by external manipulation or per rectum, or both combined. Occasionally a suggestive oedematous condition of skin appears. It is in these cases more particularly that the exploring needle has been recommended and used. I have no experience with it except in one case, and would be afraid to use it, because a sharp point is thrust into the dark and might wound veins or intestine or ureter, and although a healthy gut may be, perhaps, pierced with impunity, I am positive that a gut distended for a time and its walls paralyzed from over stimulation of the plexus of Auerbach, as shown by Malcolm, cannot be pierced with impunity, because I have seen passing out of these punctures first gas and then liquid contents. Another objection to the use of the exploring needle here is that, if you find nothing, you have proved nothing. Even that accomplished surgeon Bull failed, in one instance, to find pus with the needle, but on cutting down immediately after came upon an abscess containing four ounces of pus.

I have tried in the foregoing to emphasize the disproportion between the symptoms present in some of these cases, sometimes almost an absence of symptoms, and the grave pathological condition which bears an etiological relation to them.

At the outset it is proper to try medical treatment. Rest in bed, local abstraction of blood by leeches, or strong counter-irritation, followed by hot fomentations, with the smallest quantity of opium that will ensure a fair degree of comfort to the patient, avoiding the administration of a quantity large enough to mask the symptoms and conceal from attendant and friends

the true condition. Avoid purgatives; the notion that the cæcum is a common seat of faecal impaction has been shown to be an error, and, unless for good reasons, a mild, unirritating enema of warm water, repeated if necessary, is all that can safely be used.

Under this treatment the temperature may get lower and soon become normal, the pulse improve in quality, pain and tenderness lessen and finally disappear, and resolution takes place. In these cases generally a catarrhal appendicitis only has been present. The patient may have recovered perfectly, or, with apparent recovery, a damaged appendix may remain and be a constant menace of danger to the patient, exposing him to the danger of a recurrence at any time, and even to the danger of sudden perforation with its terrible results.

Apparent recovery in these cases, even the entire disappearance of pain and soreness and return to active duties of life, cannot be taken as a certain indication that the appendix is whole.

Mr. H., aged 31, married. First attack of catarrhal appendicitis, lasting fifteen days and ending in resolution, occurred in May 1888. During the two months immediately succeeding his recovery he suffered from pain in region of cæcum, recurring every week, beginning, as a rule, in the night and passing off the following morning. Gradually the intervals increased, but in the same ratio the pain became more severe and of longer duration. Then two or three months would elapse without pain. From February '89 to January '90 he only felt the pain once—viz., in April '89. On Sunday evening, in January last, he retired in apparently perfect health, and was awakened about 1 A.M. by pain in the abdomen of a most violent character. His sufferings were so intense that the nearest doctor was called. I did not see him until the Tuesday following. I found him lying in bed on his back, knees drawn up, abdomen tender and slightly tympanic. An ill-defined mass could be indistinctly outlined as occupying a position in lower abdominal region between umbilicus and cæcum. Some vomiting. No motion from bowels since the previous Sunday. When at rest was comparatively

free from pain. Pupils contracted. I stopped opium and gave him salines. The temperature was 102; pulse 116. The following morning symptoms indicated the presence of some grave intra-peritoneal lesion. Bowels had not moved; vomiting increased; pulse rapid and weak; temperature 103.5°; features pinched, a haggard expression; no pain but considerable tenderness; moderate tympanitis. I decided that it was time to ascertain what I had to deal with, and being confirmed in my opinion by Drs. Perrigo and Spendlove, whom I asked to see the case with me, I at once opened abdomen by a median incision. At first sight only a little redness of peritoneum and distended condition of the intestines was noticeable, but on approaching the caecal neighborhood ever so carefully I pushed aside some coils of gut when a free flow of stinking pus covered everything. Proceeding cautiously, sponging and washing away the matter, I finally found the ragged stump of an appendix, which had sloughed completely off. In the abscess cavity, the walls of which were formed by lymph binding together knuckles of intestine, I found a faecal concretion of considerable size, having for a nucleus what resembled raspberry seeds. The opening between appendix and caecum was completely closed, the stump very broad and short, and I left it as I found it. Thoroughly washed out peritoneal cavity and closed incision, providing free drainage by means of two glass tubes. In twenty-four hours temperature fell to normal, and recovery was rapid and uninterrupted. He is now well and doing full work as a groom.

This case shows very clearly that recovery from an appendicitis is not synonymous with the restoration to a sound condition of the appendix. After a period of eleven months of almost perfect freedom from pain a perforation may take place and a septic peritonitis be lighted up almost in a moment and without the slightest warning. It shows also the necessity of surgical interference, and the very reasonable hope of a probable recovery that may be held out to patient and friends.

Mr. Mc—, aged 28, single, medium height, well nourished. While at work as a millwright on the Saguenay, in 1883, he was suddenly seized during the night with severe abdominal pain,

having its greatest intensity in the neighborhood of the cæcum. After suffering a week with little, if any, amelioration of symptoms, he came home to Montreal, where I attended him for what I diagnosed as a perityphlitis. He recovered in about ten days. Six months after this first he had another attack, lasting two or three days. For about two years after this he had attacks of recurring pains in right side of abdomen, lasting two or three days each time. The intervals gradually became shorter until latterly his pains returned with wonderful regularity every three weeks, and this in spite of the most careful dieting and regular living, supplemented by such medical treatment as two or three of my confrères as well as myself could suggest. His condition was a serious one, not only because of the suffering which it entailed, but also because he found it difficult to retain any very desirable business position, being compelled to absent himself about four days out of every three weeks, and, again, because I could give him no guarantee that his recovery would continue to be as prompt and complete, for between his attacks he was apparently perfectly well. For the above reasons he consented to submit to an operation. On the 5th March last, four days after last attack, I cut down upon the appendix by the lateral incision and found a thickened appendix curled up and adherent to the postero-lateral wall of cæcum, the tissues in the immediate neighbourhood being thickened considerably and matted together. Removed appendix, washed out the field of operation carefully, inserted two glass drainage tubes, and closed incision. Immediate recovery perfect, and up to date, six months since operation, he has remained perfectly well, having had no recurrence of pain whatever.

By the operation he has gained, so far, freedom from interruption in his business life, freedom from a pretty severe attack of pain and vomiting every three weeks, and *perhaps* escaped a more serious and possible dangerous illness.

I think I use the term appendicitis with reason, because in 257 cases of perforative appendicitis and 209 cases of typhlitis collected by Fitz, the cæcum was only perforated three times—once by a fish bone, once by a pin, and once from strangulation

of the bowel. In a series of 100 cases of perityphlitic abscess taken by Weir from the *Index Medicus*, the appendix was perforated eighty-four times, and inflamed and not perforated three times. And Treves states that in 25 cases of fatal typhlitis occurring in the London Hospital during the last few years the appendix was involved in all of them.

If, now, instead of resolution taking place, the inflammatory action spreads to the adjacent tissues, a localized peritonitis develops, and suppuration may follow or a perforation of the appendix, more rarely the cæcum, may ensue, after which the prognosis will depend upon a variety of conditions, most of which are not determinable during life. First, the completeness with which the infected area is shut off from the general peritoneal cavity. Secondly, the direction the pus takes. It must always be borne distinctly in mind that the whole trouble is primarily intra-peritoneal, and only secondarily extra-peritoneal, and the thickness or strength of the dividing wall cannot be diagnosed, so far as I know, during life.

If the abscess walls are dense, the contained pus may there remain, infecting the patient and producing pyæmia until death ensues. I am loth to confess that this occurred in two cases under my care, a number of years ago, before I knew or dared to carry out a line of treatment that would have given them a chance. I was not alone in the care of them either. One died on the 74th day and the other on the 29th day. An abscess behind the cæcum was found at the post-mortem in each case. In still another case I operated on the 24th day of illness, assisted by the late Dr. Howard and Dr. Perrigo, by lateral incision. Got readily down upon the sac and found it filled with bloody pus. I inserted a drainage tube through a comparatively small opening. After twenty-four hours the pus was free from bloody tinge. Patient died on the sixth day after operation.

Professor William Osler, then of Montreal, very kindly made the autopsy for me. He found an abscess behind and to the right of the cæcum. The veins had opened into the sac, and pus was traced through them to the portal vein and into the substance of the liver. The mesenteric glands were involved. No mention is made in the report of the condition of the appendix.

But in probably a larger number of cases the pus makes for itself an exit at some point, discharging externally, a fortunate termination, or into some hollow viscus, or too often, unfortunately, into the general peritoneal cavity, to be followed by immediate fatal collapse, or by an intense septic peritonitis which proves fatal in from three to five days. Of 67 cases collected by Bull, 8 burst into the peritoneal cavity, and the same occurred in 6 out of 12 cases collected by With. Of 8 cases occurring in my own practice, 4 ruptured into the general peritoneal cavity.

One of the most perplexing questions to attendant and friends is the time most propitious for operating. The public generally have a horror of the knife, and especially of opening the abdomen, and an erroneous and exaggerated idea of its danger, an idea well ground into them by our profession for many years.

In cases of recurrent appendicitis authorities are pretty well agreed that Treves' rule of operating a few days after the subsidence of the acute symptoms.

No such unanimity of opinion exists or seems possible at the present time as to the most opportune moment to interfere in severe acute cases. To select the third day as suggested by Fitz, or the fifth day of Treves, or to make an attempt to strike an average between extremes, is not at present feasible, and would, in individual cases, work mischief. Bull's dictum that the more rapid the development of the symptoms the earlier should the surgeon interfere is at least deserving of attention. Greig Smith, wisely I think, would make it imperative upon the surgeon to interfere as soon as the patient is palpably drifting into a condition in which the chances of recovery after operation are markedly diminishing; and he adds that consecutive evening temperatures for four or five days rising over 102° would seem to justify operation.

In all of my cases of primary appendicitis there has occurred generally about the third or fourth day a marked remission of all the symptoms, the temperature falling to normal or nearly so, with a corresponding improvement in pulse and other symptoms, but persistence of pain and tenderness, only to be followed by rapid redevelopment in twenty-four or forty-eight hours. If this remission is found to obtain as a general rule or in a large

percentage of cases, it might be made a rule to operate the moment acute symptoms began to show themselves after such a remission. If to the persistence of symptoms of local peritonitis for a day or two, or three or more, chilliness, profuse sweats, regurgitation from the stomach are added, operation should be undertaken without delay.

If a moderately well-defined local fullness can be felt externally or per rectum, it would call for operative treatment.

If there are present symptoms of acute septic peritonitis, and tubercle, traumatism and the puerperal state can be excluded as etiological factors, they may safely be counted due to the rupture of some hollow viscus or abscess, or other sac containing ichorous matter, and unless relieved promptly by surgical methods before shock is present the patient will almost certainly die. Delay in these cases is extremely hazardous, and too often in the past has the surgeon been called in when the patient was beyond the stage when operative treatment could be undertaken with any reasonable hope of success. And there is no reason for such procrastination. The operation itself at any stage of the case, if performed by a competent surgeon according to modern surgical principles, can scarcely do harm.

In regard to the operation itself I can testify to the ease with which one gets down upon the appendix by the lateral incision. If a tumour is distinctly felt, an incision a little to the inner side of it answers well. In some instances the operation is completed without entering the general peritoneal cavity. If it is opened it should be protected by large flat sponges. If pus enters, and it is desired, or if the case is one of general suppurative peritonitis, a median incision can be made primarily or after the lateral incision. If anywhere the rule that what is worth doing at all is worth doing well applies, it is here all puddles of pus should be thoroughly removed, and, so far as possible, the abdominal cavity made scrupulously clean and freely drained. In extreme cases continuous irrigation, as carried out by Penrose of Philadelphia, and favourably reported on by Greig Smith and Wylie, would seem to increase the chances of success.

Except in one case where it had sloughed off, leaving a broad

short base, I have always removed the appendix after putting a stout silk ligature around its base. I feel safer when it is away, although recurrence is said not to be common in cases where it is left behind, the inflammation seeming to effect the closure of its canal.

ON THE PRINCIPLES OF THE TREATMENT OF DIABETES MELLITUS.*

By F. W. PAVY, M.D., LL.D., F.R.S.

The first point to be considered in discussing the treatment of diabetes is the *rationale* upon which it should be conducted. A certain deviation from health resulting in the escape of sugar with the urine constitutes the condition that has to be combated, and something requires to be said regarding the nature of the deviation before we are in a position to approach the question of how it should be treated.

The observable phenomena are that, whilst in the healthy subject the food ingested is disposed of in such a manner within the system as not to lead to the exit of sugar from it, in the diabetic subject the food fails to be similarly disposed of, but in part passes out as unconsumed and wasted material with the urinary excretion. It is with the carbohydrate principles that the faulty action lies. These, instead of passing in the direction that results in their consumption and utilization and thus disappearance within the system, as occurs in health, do not follow such a course, but remain in the state of carbohydrate, and are eliminated as such. The chemistry of the body with regard to these principles is at fault. The proper changes do not take place to lead to their being employed as they ought to be, and thereby lost sight of. Represented in other words, through defective assimilative action these principles do not pass on, it may be said, to their proper destination.

Thus much is learnt by simply looking at the matter through the light of ingress and egress.

There is no theoretical consideration involved in stating that the carbohydrates in the system of the diabetic fail to undergo

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those right chemical changes which, in health, lead to their disappearance, and that consequently, whether ingested from without, or formed from the splitting up of nitrogenous matter within, they become disposed of by egress with the urine.

It may further, I consider, be stated that, as a result of the faulty action, the carbohydrate, in the form of sugar, reaches the general circulation in a manner it ought not. No one with any ground of support can contend that the sugar eliminated is formed by the kidney. Whatever appears in the urine has previously existed in the blood flowing to the organ, and osmosis suffices to account for the escape that takes place. I am of opinion it has satisfactorily been made out that healthy urine contains a certain small amount of sugar, and this stands in accord with what is observed as regards the condition of the blood under natural circumstances.

With regard to the presence of sugar in ordinary urine, I conducted a series of observations some years ago in which I precipitated the sugar by means of lead acetate and ammonia, after previous separation of the uric acid by lead acetate alone. The compound of sugar and lead oxide was then decomposed by sulphuretted hydrogen and the sugar estimated gravimetrically by boiling with the copper test liquid, collecting the precipitated cuprous oxide, and subsequently by the aid of a galvanic current depositing the copper upon a weighed platinum cylinder. The amount found varied from $\cdot 096$ to $\cdot 533$ parts of sugar per 1,000 parts of urine.

The condition of the blood, as regards sugar, can be with precision defined by the application of the satisfactory analytical procedure which exists at our command. There is no difficulty, with the exercise of proper attention, in securing the full extraction of whatever sugar is present in a given specimen of blood, and afterwards expressing its amount. From a large number of observations I may state that the quantity of sugar in blood taken under natural conditions does not amount to more than from about $\cdot 5$ to about $\cdot 8$ per 1,000. Under deviations from the natural state the quantity may be quickly made to rise higher, and this, it may be said, should be borne in mind in looking at

results where larger quantities are mentioned by investigators as having been found. I have made analyses of the blood obtained from persons suffering from diabetes, and have a record of seven instances. A general agreement is distinctly recognizable between the amount of sugar escaping with the urine and that found in the blood. Taking one instance where 751 grammes of sugar were eliminated with the urine in the twenty-four hours, the blood contained 5.763 per 1,000; whilst in another with 27 grammes in the urine for the twenty-four hours, the amount in the blood was 1.543 per 1,000. These are the examples giving respectively the highest and lowest figures of the series, both for urine and blood. It is correct to state that the condition of the urine as regards sugar affords an index of that of the blood. This is only what might be expected, seeing that sugar is a diffusible substance, and that therefore in proportion to its presence in the blood so may it be looked for in the urine. As its presence to more than an exceedingly minute extent is abnormal to the urine, so the same may be said of the blood, and its presence in the blood to the extent occurring in diabetes means the existence of an unnatural state of this fluid, which induces a deviation from healthy action throughout the system. In proportion to the extent of this deviation from the healthy state—that is in proportion to the amount of sugar reaching the general circulation and thence passing out through the kidney—so will stand the measure of severity of the symptoms of diabetes. Looked at broadly it may certainly be stated that the larger the amount of sugar eliminated with the urine, the worse in every direction is the condition of the patient suffering from diabetes.

We thus trace the symptomatic phenomena of the disease to the abnormal condition occasioned by the presence to an undue extent of sugar in the general circulation.

Whence, it may be next asked, arises this abnormality? I must not enter too far into the discussion of this matter, but the question has a distinct bearing upon the basis of treatment, and therefore requires to be touched upon to a certain extent.

I doubt not it will be conceded by all that the object to be attained by treatment is to diminish the deviation from health as

far as practicable. It is only a rational procedure to endeavour to establish and maintain as close an approximation to the healthy standard as our knowledge enables us to effect. Observation shows that the amount of error as regards sugar in the blood, and, following upon this, sugar to be discharged with the urine, is in proportion to the amount of carbohydrate principles, of whatever kind, ingested. It may be said in general terms, without, as I have already stated, asserting anything outside the region of fact, that the nature of the error to be dealt with consists in a failure of the power in the system to dispose of the carbohydrates in a manner to lead to their utilization and disappearance. But now arises the question, To what kind of faulty action is this failure to be attributed. Two points of view present themselves for consideration. We start with the fact that sugar is present in the blood to an extent that is unnatural. Is this due to sugar reaching the general circulation in a manner that it ought not? Or is it to be regarded as natural that all the sugar eliminated in diabetes should reach the general circulation, the error consisting of its not undergoing subsequent destruction, thus leading to accumulation?

It would be out of place to discuss these propositions here. The view to be taken rests on physiological considerations. It is known that I have over a long space of time given close attention to the matter, and my experimental enquiries lead me decidedly to affirm that I consider the source of the sugar encountered in the blood and eliminated in diabetes to be attributed to its being permitted to enter the general circulation in a manner that it ought not. This view harmonises fully with the phenomena observed in diabetes. In health I would say the opportunity is not afforded for the ingested carbohydrates to appear in the urine for the reason that they are not permitted to pass through the liver and reach the general circulation. In diabetes, on the other hand, we know that they do reach the general circulation in the form of sugar, and from the amount of this principle to be found in the urine it can be stated that they must do so in proportion to the amount ingested. I would therefore say that we have here to deal with a failure of power—

assimilative, or whatever else it may be called—to arrest the passage of carbohydrates through the liver. Being thus permitted to reach the general circulation they are placed in a position to be discharged with the urine, and hence according to the amount of carbohydrate principles ingested so is the amount of sugar eliminated. With such a state of things existing, elimination necessarily follows upon, and is proportionate to ingestion, and leads to the production of a result which is found to stand in harmony with observation.

I have spoken of ingested carbohydrate being checked by the liver from entering the general circulation as constituting what occurs under conditions of health, and I do not make this statement unsupported by the information afforded by experiment. I have conducted a large number of experiments upon the point, and can say from them that when the requisite precautions are observed, to obtain a representation of the natural condition of the blood of the systemic or general and of the portal circulation, a large preponderance of sugar is encountered in the blood of the portal vein, if the observation be made at a period of digestion and after the ingestion of food freely containing carbohydrate matter. But it is necessary to bear in mind, if the estimation of the sugar be effected, as is the common practice, with the copper test, that a fallacy may arise from the following circumstance, unless measures are taken to guard against it. With the transformation of starch in the alimentary canal, preparatory to absorption, it is not, certainly to any noteworthy extent, carried higher than maltose, which, as is known, has a cupric oxide reducing capacity of 61, as compared with glucose at 100, and much of it is only carried into a dextrin with a lower cupric oxide reducing power still. Hence the form of carbohydrate, derived from starch, which reaches the portal system does not possess the cupric oxide reducing capacity of glucose, but something more or less considerably below it. As an actual fact I have a recorded instance in which the product contained in the portal blood after the ingestion of starchy food possessed a cupric oxide reducing power standing as low as 21, as compared with glucose at 100. In this instance, if reliance had been placed

upon the ordinarily conducted method of estimation, the amount of carbohydrate present would have been expressed at only about one-fifth of what it really was. With a form of carbohydrate other than glucose existing, it is necessary to bring it into glucose by boiling with dilute sulphuric acid, to permit of the true amount being determined, and this has been the plan of procedure of late years adopted in the researches I have conducted.

I have considered it necessary to enter into these preliminary details. They display the nature of the faulty condition that has to be dealt with by treatment. Sugar reaches the general circulation in a manner that it ought not, and to its presence in the system are due the various symptoms belonging to diabetes. Through reaching the general circulation it becomes eliminated by the kidney and is lost. The disease thus involves a sacrifice of material which ought by rights to be turned to account, but this is a point that has but little bearing on the production of the phenomena that are observed in connection with the disease. If it were only a question of waste of the carbohydrate principles of food, there would be no reason against there being taken and allowed to run off. Provided a sufficient amount of other alimentary principles were consumed to meet the requirements of life, no particular harm need arise from the sacrifice of the material occurring. What, it may be said, in reality inflicts the harm is the altered constitution of the blood, occasioned by the presence in it of the sugar which passes through the system to the urine. In proportion to the largeness of the amount of sugar thus traversing the system in the blood, so will be the extent of deviation from the natural state, and so in correspondence the impairment of health that will be found to exist.

The class of case to which these remarks apply is that in which the discharge of sugar is susceptible of control by treatment, and the class embraces the majority of the cases in which the disease sets in after the middle period of life.

In such instances, starting with the ingestion of carbohydrate, there follows, briefly summarized, as a consequence of the want of proper transformative or assimilative power within the system, an accumulation of sugar in the blood attended with its discharge

by the urine. Accumulation of sugar in the blood leads to the production of symptoms proportionate in severity to the deviation from the natural state. The plain object before us is to reduce this deviation as far as is found to be possible.

We cannot be wrong in endeavouring to attain as close an approach to natural conditions as circumstances permit. If the chemistry could be set right, and sugar be prevented reaching the general circulation, the disease would be removed; but it may not be possible to restore the transformative or assimilative power which has become impaired or lost, and then the only way of arriving at what is wanted is to withhold from introduction into the system the alimentary principles which, owing to failure of power to properly dispose of them, cannot be of service, and which, by leading to the passage of sugar through the system, establish an unnatural condition and thereby inflict positive harm.

As long as the passage of sugar through the system is prevented no harm takes place. In the course of all my experience in diabetes I have never known anything serious to arise as a part of the disease so long as the urine has been kept free from sugar. There is nothing in fact to form the source of trouble, seeing that there is not the abnormal presence of sugar in the circulation to occasion deviation from the health state. On the other hand, when sugar is passing through the system, and the remark applies in proportion to the amount passing through, not only are there to be observed the symptoms ordinarily consequent thereon, but a constant state of insecurity exists, from the danger of the supervention of the serious issues known to follow upon the disease. Moreover, with the unnatural state occasioned by the presence of sugar, nutritive action is not carried on in such a manner as to properly maintain the general strength. As a consequence, the general power becomes sapped or prematurely exhausted, and the system weakened and rendered less able to resist the effect of pernicious influences. Such is not the position when sugar is not similarly traversing the system. Indeed there is nothing to render the state essentially different from that ordinarily existing.

The contrast between the two conditions—that is, where sugar

is allowed to abnormally exist in the system, and where it is prevented from doing so—is well shown in cases where the disease has run on for some time without being recognized, and is subsequently controlled by dietetic treatment. What will be observed in such instances will be a gradually advancing impairment of health and increasing severity of the symptoms of the disease, and it is right to assume that progress in the same direction would run on, and the patient grow worse and worse, if the condition continued to be left to itself. Whilst matters are thus proceeding it happens, say, that the existence of the disease becomes recognized, and, if the case be such that the sugar is susceptible of being removed from the urine by the exclusion of the carbohydrate principles from the food, and this exclusion be carried out, this alone will suffice, not only to check the downward progress occurring, but to bring back health and strength to the patient.

The first consideration, therefore, in the treatment is to control by dietetic measures the passage of sugar through the system. The real point, however, to be aimed at is to restore the assimilative power over the carbohydrate elements of food, and until this has been accomplished it cannot be said that a cure has been effected, but only that the disease is held in subjection and prevented, as long as the condition can be maintained, from leading on to an unfavourable issue. What most conduces to this desired restoration of assimilative power is the maintenance of a normal state of the system by keeping it free from the passage of sugar through it, and in this way bringing a healthy condition of body to bear in helping to promote a removal of the faulty state.

According to my own experience, opium and its derivatives codeine and morphine are the medicinal agents which, more than any others that I know of, assist in the actual cure of the disease, by which I mean a restoration of the assimilative power which has been impaired-

The influence of these agents may be witnessed in cases where the sugar has been brought down by diet to a certain point, but is unsusceptible of entire removal from the system by dietetic treatment alone. The complete removal may then be

sometimes observed to follow the subsequent administration of the drug, showing that the medicinal agent has acted in the direction of exerting a restraining influence over the abnormal production and elimination of sugar.

When cases of a favourable nature—that is, cases occurring above the middle period of life—are treated by these combined measures, and the treatment is steadily carried on for some time, it is a matter of common observation that the system of the patient becomes able to tolerate a certain amount of carbohydrate food, without its leading to the elimination of sugar. Often, with strict observance of the required treatment, the assimilative power is found to become so far re-established that a fair amount of the carbohydrate principles, or even an ordinary diet, may be taken without leading to the elimination of sugar. When this is the case, carbohydrate principles, according to the extent found to be tolerated, may be taken without occasioning harm; but the object is to keep below the point at which the escape of sugar takes place, and when this is done actual benefit, instead of injury, is derived therefrom.

Here I may refer to the aid afforded by the quantitative testing of the urine. It is absolutely essential, I consider, in the management of a case, to possess the knowledge thus supplied, not only for the purpose of regulating the treatment according to the progress made, but also for keeping a check upon the manner in which the directions given are carried out. When in a case it is found to happen that the assimilative power has been restored, it is permissible to consider that an actual cure has been effected; but it is always requisite to bear in mind that a weak point has existed, and that it is advisable to avoid unduly taxing a power which has previously given evidence of being at fault.

GYNÆCOLOGICAL REPORT.

COMMENCING MAY, 1890.

By T. JOHNSON-ALLOWAY, M.D.,
Instructor in Gynæcology. McGill University.

The following cases, with their history and treatment, are taken from the case-book in the order in which they found their way there, with the exception of cases of abdominal section, which will appear in a separate fasciculus. They are diversified in character, and on this account may be of more interest to the general reader than if selected and grouped under special headings. The report will be continued from time to time.

CASE I.—Age 37, married fifteen years, four children, widow eight years. Complains principally of extreme prostration; always tired; asthenopia; headache and constant backache. Menstruation every three weeks, with pain; duration not prolonged nor is the quantity excessive. Leucorrhœal discharge profuse.

Examination of pelvic organs.—Perineum in fairly normal condition; fundus uteri looking forwards in anteversion; uterus enlarged, tender, and in state of chronic metritis. Cervix bilaterally lacerated; most extensive ectropion and hypertrophy of mucosa. Cystic disease of everted cervical segments and cicatricial induration in angles of cervical laceration. No evidence of disease of ovaries or tubes.

Treatment.—One month's preparatory treatment in bed, then curetting of endometrium and Schröder's trachelorrhaphy.

Three months after the operation the patient expressed herself as having recovered completely from the old feeling of exhaustion. Menstruation became normal and leucorrhœal discharge disappeared. Her eyes were still weak; it takes a long time for improvement to show itself in these organs under such circumstances. I have no doubt, however, regarding their improvement also in the course of time.

CASE II.—Age 28, married four years, no children. Menstruation very profuse and painful; severe pain in back and sides and constant headache. The principal condition, however, of which she complained was intense pain during coitus, which of

late became absolutely unendurable. She was an emaciated, delicate woman, a condition so often seen in chronic pelvic disease; irritable in disposition, and always complaining.

Examination of pelvic organs.—On spreading aside the labia the first thing to attract attention was an hypertrophied and inflamed condition of the mucosa of the urethra protruding from the meatus urinae. Surrounding the meatus the hypertrophied part was as large as the end of a finger, extending in the direction of the urethra and involving principally its inferior wall. This diseased part was very sensitive to the slightest touch, causing the patient to move away on the table from the examining finger. There was a purulent discharge issuing from meatus, but no pain during micturition. The uterus was anteflexed and somewhat fixed in its position, cervix congested, and glairy discharge issuing from os. Retro-uterine tissue very tender and whole pelvic floor much limited in its range of mobility. Probably pyosalpinx.

Treatment.—This patient improved so much as regards the inflammatory condition of the uterus and surrounding parts under rest and preparatory treatment that she refused to have the appendages removed, and expressed herself as being quite well with the exception of the painful lips of the meatus urinae. Under ether I removed a large V-shaped piece of chronic inflammatory tissue from the lower wall of the urethra, from the meatus upwards. I then pulled out as much as possible of the redundant mucosa with a tenaculum and excised it, and attached the remainder with fine catgut to the vaginal mucosa all around the orifice. The urethra from the neck of the bladder was finally swabbed out with pure carbolic acid.

From last information I received from this patient I learn that she still suffers from a return of the uterine and pelvic floor trouble generally, but the urethral condition has given her no more annoyance. Within the last three months I have met with another similar case of chronic urethritis accompanied with extreme suffering, where the same operation afforded relief. I prefer this method to Emmet's when there is much hypertrophy of the tissues around the meatus, always very sensitive and cannot be drawn into the canal by any amount of traction. It

is, in fact, a tumor or neoplasm with the opening not in the centre as in ordinary prolapse of the urethra, but at the periphery. In these irreducible cases Winckel performs a similar operation.

CASE III.—Aged 19, unmarried. Menstruation regular, but somewhat painful. Uterus and adnexa found in a fairly normal condition. The principal symptom the patient complained of was a constant desire to urinate, passing only a few spoonfuls each time. In her present condition this desire would occur every ten to fifteen minutes, and with intense pain. For months past she cannot recollect having had a single night's rest, and this result of her trouble had made sad inroads upon her otherwise very robust health. She was pale, nervous and despondent, and would willingly submit to any course of treatment to obtain relief. She had had the urethra and neck of bladder dilated and many other methods of treatment adopted without relief. The urine showed pus and epithelial cells. The bladder was much contracted and excessively tender to touch, of the sound.

Treatment.—The treatment adopted here was the forcible injection of hot water into the bladder by means of a Davidson syringe. I began with being only able to inject one ounce, from the intense suffering it caused. Each succeeding day I increased this, sometimes by a few drachms and again by half an ounce or an ounce. In the course of a week I reached five ounces. From this I got on more rapidly, and she would not suffer so much at each sitting. At the end of two weeks we reached twelve ounces, and at end of four weeks I could inject eighteen ounces, causing her to retain it for half an hour without any pain beyond a feeling of discomfort. She could now sleep all night without waking, which was quite a novel condition of things to her. During the daytime she could go without urinating for seven hours, only feeling pain on completion of the systole.

She now discontinued treatment, but returned again in three weeks to say that she was as bad as ever. I had, not, however, much trouble with her this time, gradually getting as much as twenty ounces to be retained at each sitting. I also used latterly, after I had allowed the injected water to run off, a strong solution of nitrate of silver varying from 2 to 20 grains to the ounce, and allowed it to remain in the viscus.

I saw this patient some weeks afterwards, when she stated she was perfectly well and would return to me if she should have a relapse of the symptoms. I have not, however, seen her since.

This case was a very bad one, a type of chronic cystitis treated with most gratifying results by this method.

The method of forcible dilatation of the chronically diseased bladder by water has met with excellent results in the hands of the most experienced specialists of late years. And the strangeness of the idea is that it is directly opposed to the advice laid down to us by such authorities as Sir Henry Thompson and other English surgeons. Ultzmann uses 200 gm., but Winckel recommends much more. In the cases I have treated, the benefit seems to have been the result of opening up or unfolding the folds of the diseased mucosa. In this way the capacity of the reservoir has naturally been enlarged, but the muco-purulent decomposing discharge which lodges in the recesses was washed out and the surface constantly cleansed. The pain in connection with this treatment is sometimes very great, and often requires a hypodermic of Battley to enable the patient to bear it. The treatment also requires great care, patience and time on the part of the physician, otherwise an acute attack may be set up. As under all forms of treatment of chronic cystitis relapses are liable to occur, therefore the patient must be warned to return at once to the surgeon, when one or two sittings will set all right again.

CASE IV.—Aged 30, unmarried. Menstruation regular, duration four days. Very severe dysmenorrhœa. Profuse leucorrhœal discharge, backache, severe headache, and constant nausea. Inability to sleep.

Examination.—Purulent vaginitis due to wearing of a soft rubber ring pessary which had been introduced four months since. The uterus was retroflexed and very tender. She complained of hæmorrhoids of long standing.

Treatment.—The rubber ring was removed and the patient confined to bed. Douches of chloride of zinc solution soon relieved the vaginitis. The uterus was well anteverted and a proper retroversion hard-rubber pessary introduced to retain it in position. In the course of a few days afterwards the round

ligaments were shortened and the uterus held well up in the forward position. The ligaments were found fairly strong and of good size.

CASE V.—Aged 26, married three years; no pregnancy. This patient has every appearance of being in good health. She is fairly nourished and seems well supplied with blood. Before marriage she was considered strong, but of late she states that she has become morose and dyspeptic; suffers severe dysmenorrhœal pains, so much so that she is compelled to remain in bed and have hot applications applied. She menstruates every three weeks; duration three days; pain chiefly before appearance of flow.

Examination.—Vagina somewhat congested; uterus retroverted and tender to examining finger; cervix conoid in shape, with small pin-hole os. No evidence of disease of ovaries or tubes. Uterus easily replaced forward and retained so with a suitable retroversion hard-rubber pessary. Patient confined to bed on preparatory treatment for one month.

Treatment.—The cervix was pulled down and divulsed to the extent of $1\frac{1}{4}$ inches and the endometrium thoroughly curetted with the sharp instrument. The patient was then changed in position on the table and the round ligaments shortened. The ligaments were found of very full size and strong, and seemed to hold the uterus forward in good position. I used here only two sutures, the wounds being one and a quarter inches long.

The sutures (silkworm gut) were removed on the 13th day, and the patient returned to her home on the fourth week from date of operation with the uterus in good position. I have examined this lady quite recently and find the uterus in good position. She states that she has no menstrual pain, and that she enjoys very good health. In this and the previous case I endeavored to find the ligaments through a much smaller wound-opening than formerly, and I have ever since succeeded in finding the ligaments through an opening not more than an inch and a quarter in length, and consequently required only two sutures to close the wound and hold the ligaments. This improvement in the technique of this operation is of very great importance,

because it not only makes the operation less formidable and painful to the patient during convalescence, but it leaves the inguinal canal practically undisturbed. In fact the operation should never require a larger wound or more than two sutures.

Oct. 2nd.—I have just had a visit from this lady and find her three months pregnant. We have here much good resulting from the operation, as will be seen from her history. She had been three years married and *absolutely* sterile during that time.

CASE VI.—Aged 32, unmarried. About one year prior to consulting me she states that while lifting a heavy book-case she experienced a sudden and severe pain in her right side; and that since the time of this occurrence she has not menstruated. She also states that three months ago she was seized with constant vomiting whenever either solid or liquid food was taken, and that this condition still exists. There is at present severe pain in the back and right side, extending downwards into the iliac region. She suffers from constant headache, is extremely nervous, sleepless, and at times quite hysterical.

Examination.—This patient was wearing a soft rubber pessary at time of examination which had induced an attack of granular vaginitis. The uterus was found retroverted, the cervix looking directly forwards; ovaries and tubes normal as well as could be judged. There was extreme sensitiveness over the whole sexual area, so much so that it was found impossible by her physician to make a satisfactory examination.

Treatment.—The pessary was removed and patient put to bed on preparatory treatment. On the 14th day the patient was anæsthetized and the uterus thrown well forwards, being held in this position by a pessary. The round ligaments were now taken up and shortened; they were easily found, were of moderate size and strength, and were fixed in the wound by two silkworm gut sutures. After the æther nausea had passed away the patient had no more vomiting during her convalescence, neither had she headache. She took fair quantity of food, which digested well. The sutures were removed on the fifteenth day after the operation and all conditions seemed well. After she had been up a few days she suddenly received ill news from

England, which caused her to become depressed in spirits and finally hysterical. The vomiting and head symptoms returned at times. I examined the uterus on the occurrence of these symptoms, but was pleased to find it anteverted well and the pelvic floor free from tenderness. The patient remained in this doubtful condition for a couple of weeks, when she gradually began to improve again. The vomiting and headache disappeared, her good spirits returned, and she is now in excellent health, eight months since the operation.

I have learned since writing the above that this lady is at present filling an important position in a large educational establishment in Boston.

CASE VII.—Aged 26, married four years; two miscarriages at six and eight weeks gestation respectively, the last miscarriage three years ago. She menstruates very irregularly, generally every sixth week, and experiences severe pain. The patient is much debilitated and emotional; has constant pain in the back, but not in the iliac region; nausea and headache constant; bladder function normal.

Examination.—Vagina spacious, vulvar outlet relaxed; uterus retroverted but freely moveable. There is no tenderness of the pelvic floor. Uterus can be easily drawn down to the introitus and anteverted without causing pain. Ovaries and tubes normal.

Treatment.—After a week's preparatory treatment and rest in bed I shortened the round ligaments. I found them of good size, but ran in their bed with difficulty. The left one came out 4 inches, the right 3 inches. This condition often happens. I have rarely observed the ligaments on both sides exactly alike either in length or calibre. The difference in length is due to adhesions drawing the fundus uteri somewhat over to one side of the pelvis through a shortening of that broad ligament. This condition may also interfere with the smooth running of the ligament and its size through interference with its nutrition. I have also observed a degeneration of the ligament; a fatty change takes place, causing it to break off quite easily in the fingers when being drawn out. When this mishap occurred, I have noticed that the uterine end did not recede into the canal

but remained at the place it gave way, so that it was easy to catch it up again with the forceps and continue traction until sufficient was withdrawn to suture into the wound. This patient when last seen was very well. The uterus was in good position and fairly high up in the pelvis.

CASE VIII.—Aged 31, married ten years; two children, youngest six years of age. Menstruation regular, duration three to four days. This patient complained of severe pain in the hypogastrium and back, the pain running up to the occiput, sick headaches constant and easily aggravated, profuse leucorrhoeal discharge,—in fact, this patient was a miserable wreck from nervous strain induced by a determination to endure suffering for which she thought she could obtain no relief.

Examination.—Perineum intact, but pelvic floor completely destroyed as regards its function. The outer integument of the perineum was not interfered with; it could be drawn up to a level with the clitoris, completely covering the vestibule. But when the forefingers of my hands were inserted into the vagina and separated forcibly it was simply appalling the cavity which could be produced. In fact it may be said there was no functional floor, merely a membranous bag into which the pelvic organs dropped. It is surprising how often this condition exists in nervous and emaciated women; they are under the impression that they have no pelvic floor defect because the outward appearance of the perineum is good, whereas in truth it is but a mere skin covering, behind which the anterior wall of the vagina and all above it drops as into a membranous bag. The uterus was low down, large and bulky from chronic metritis. It was lying in the position of retroversion of the third degree; all supporting ligaments relaxed in the extreme. The cervix uteri was bilaterally lacerated, bulbous and extensively cystic. The ovaries and tubes were apparently normal.

Treatment.—The objective points in the treatment of this case were (1) to reduce the size of the uterus, (2) to restore the function of the pelvic floor, and (3) to take all the weight off that floor possible. I therefore began by curetting very freely every vestige of the much hypertrophied endometrium, then

removed the diseased cervix by Schröder's method. The second point I endeavored to accomplish by doing a very high flap-splitting operation upon the vagina, and by it improving the function of the levator ani. I then turned my attention to the third point by changing the position of the patient on the table and shortening the round ligaments. The ligament of the left side was very large and muscular, and ran easily; that on the right was also large and strong, but I did not get it to run quite so easily at first. Two sutures were used to close the wounds.

This case, when lately seen, was very much improved in health, and will still improve more. The uterus is well anteverted, the vagina small and strong. In a similar case, however, which came under my notice in addition to the above, I took out a large piece of the anterior vaginal wall (anterior colporrhaphy), and in this way added materially to the strength of the pelvic floor by preventing the slightest prolapse of the bladder on to the posterior wall of the vagina and perineum.

CASE IX.—Age 24, married three years. Menstruation regular but very painful. Never been pregnant. Slight leucorrhœal discharge. Severe and constant *bachache*, headache and nausea. The lady was well nourished, and her general health did not seem to have been affected by her sufferings.

Examination.—Vagina and external parts normal. Uterus retroverted to second degree. Fundus exceedingly painful to the examining finger, but easily replaced to its normal forward position. The ovaries and tubes were apparently normal. A retroversion pessary was inserted, and the patient placed in bed. A week afterwards, I shortened the round ligaments. The structures were found of full size, and ran very easily. Two sutures used to close the wound. This patient did not suffer from the wound after the first day, and had a good convalescence. The sutures were removed on the fifteenth day after operation, and on her returning to her home four weeks after the operation, the uterus was firmly held in anteversion. I heard from her quite recently, saying that she was free from dysmenorrhœa and headache, and that she was in very good health.

CASE X.—Age 40, unmarried. Has not menstruated for

the past year. She complains of a lowered condition of health and marked prostration. She has severe constant headaches. There is a profuse leucorrhœal discharge. She attributes all her ill-health to frequent and painful micturition. She has not slept at night for a long time. She had been under medical treatment in Edinburgh for the year past without benefit. She had, however, never allowed a physician to make a vaginal examination.

Examination.—Under ether, I found extensive prolapse of the urethral mucosa with hypertrophy of the lower segment, preventing it being returned. As she came out of the anæsthetic, the slightest touch upon the prolapsed urethra caused an instantaneous adduction of the thighs and movement of the body upwards on the table, showing the extreme sensitiveness of the part and the suffering it had induced. The urine was examined and found fairly normal.

Treatment.—Under ether, a few days after the examination made, I removed the prolapsed and hypertrophied part in the manner already described. I also dilated the urethra and neck of bladder with graduated dilators and curetted away quite a quantity of caruncles and hypertrophied mucosa from the urethral canal. Applied iodised phenol and put the patient to bed. In the course of a few days she had normal urination, and went home on the thirteenth day after operation. Some days before leaving she could urinate without pain, and slept soundly at night undisturbed.

Hospital Reports.

MONTREAL GENERAL HOSPITAL.

CONDENSED REPORTS OF CASES IN DR. MACDONNELL'S WARDS.

Appendicitis.—The difficulties in dealing with this disease are well illustrated by the histories of two patients who were in the wards during the months of February and March. In the first case an early operation might have saved life; in the second case delay was evidently the right course to follow.

CASE I.—*Symptoms of Peritonitis; Sudden Collapse; Death.*

Mary S., aged 20, admitted Feb. 21st, 1890. The day before admission, at 2 P.M., while she was sweeping, she was seized with violent pain in the abdomen. She had previously been in very good health, and had never experienced any abdominal pain of any kind, but two days before the attack she had driven some forty miles, and felt cold and chilly for a long time after her return. After she had gone to bed the pain became somewhat less severe, but did not leave her, and on the morning of admission it became extremely violent, extended over the whole of the lower part of the abdomen, and was not localized. Coincident with the occurrence of the pain there was severe vomiting, which returned at intervals of half an hour up to the time of admission. The bowels had moved somewhat loosely and frequently before admission.

State on admission.—Expression anxious; pupils dilated; cheeks flushed; right lateral decubitus with knees updrawn. There is no complaint of pain. Pulse 108, small and weak; temperature 103.2°F. Anorexia; tongue slightly coated; bowels somewhat loose. The surface of the abdomen is rather protruded, and there is tenderness universally, but there is no more pain on the right side than on the left. In the right iliac fossa the percussion note is inclined to be dull, and there seems to be in this region a well-defined sense of resistance to pressure. Menstruation began when she was 14, and has always been regular. Two days before the onset of the illness she began to be unwell, and the flow has continued uninterruptedly since.

Morphine was administered, pain relieved, and a fairly comfortable night passed.

On the third day of the illness the general condition was unchanged, but the pain and tenderness seemed to lie more in the epigastric region and right side of the abdomen. On the sixth day there was decided improvement; pain was no longer general, but distinctly localized in the right iliac fossa, and there was a painful spot half way between the spine of the ilium and the umbilicus. At this point a consultation was held as to the advisability of a laparotomy. Dr. James Bell and I decided that an abdominal section was not immediately called for. The patient's general condition had undergone such manifest improvement in the last twenty-four hours—the pain had become so much less severe, the temperature had gone down to 102° and showed a tendency to stay there, and the bowels had moved freely and comfortably without artificial aid. Led away by these considerations we postponed operative measures, and the sequel proved that we were wrong. If at any time laparotomy would have saved the patient it was just at this period, for on the evening of the same day a change occurred which put the saving of life by operation out of the question. On the day after this consultation (the eighth day) the temperature rose suddenly, the pulse became thready, and vomiting set in. The condition became rapidly one of collapse, and the patient died in about fifteen hours after the alarming symptoms set in. No autopsy.

If the diagnosis of appendicitis was an assumption that could not be borne out by the symptoms, it was evident that the general peritonitis depended on a local cause, and it is possible that had we not delayed, the local cause might have been removed.

The next case illustrates the other side of the question—the advantage of delay.

Elizabeth R——, aged 19, a tablemaid, was admitted on the 1st March, 1890, complaining of pain in the right side of the abdomen and general weakness. Twelve days before admission, while out walking in the street, she was suddenly attacked with dizziness, urgent vomiting, and very severe abdominal pain. She

has been in bed ever since this attack, suffering greatly from pain in the abdomen, vomiting, and fever. The bowels have moved but once since.

State on admission.—A fairly well nourished girl; hectic appearance; temperature 100.6°F.; pulse 104; respirations 20; tongue heavily coated; appetite bad; bowels constipated; abdomen moderately full. Just below the margin of the ribs in the right flank there is acute tenderness on pressure, but in the right iliac region she can stand manipulation without much suffering. No evidence of disease elsewhere.

The suddenness of the attack and its local character, the appearance of the patient, and the exclusion of all other causes, led me to suppose that the girl was the subject of an appendicitis, and alarmed by the rapidity with which fatal symptoms set in in the case already cited, the necessity for early laparotomy was constantly before me. One point, however, made the diagnosis doubtful—the presence of the pain at a point higher up in the belly than is commonly the case in appendicitis. For the first two days she seemed to improve, but on the third day the temperature began to rise. It soon fell and improvement gradually took place. On her discharge, the 27th day, all the symptoms had disappeared except some slight degree of pain on pressure in the right hypochondrium. We regarded the case as one tending to self-cure, and congratulated ourselves upon our good management.

In three weeks she was back in hospital again with abdominal pain and high temperature, but now the cause was apparent: a tumour occupying the lower umbilical region could plainly be felt, and during her second stay in hospital of four weeks this tumour became much more defined and increased in size and hardness. The diagnosis was now declared. The mass is undoubtedly of tubercular origin. Closer investigation of the family history showed that several of her very near relatives had suffered from consumption.

Unilateral Headache of great severity, followed by Facial Paralysis. Rapid Recovery under Iodide of Potassium.

B. D., aged 26, was admitted on Feb. 21st, 1890, with a

history of having suffered intense headache, which was said to have been the result of an attack of la grippe in December last. She was married at 17, had two children, both of whom she lost by diphtheria, and one miscarriage. Her second marriage took place eight months ago. She had been under treatment for the headache for some time, and had taken antipyrin, phenacetin, and morphia in very large quantities. The headache presented the following characters: it was intensely severe, constantly present with paroxysmal exacerbations, and generally interfered with sleep. Any effort, such as coughing or stooping, increased it. Its situation was mainly in the vertex and upper part of the forehead, but sometimes it was said to start from the right side of the head. There was hyperæsthesia of the scalp and tenderness on percussion over the right parietal region anterior to a vertical line drawn upwards from the external auditory opening. There was no evidence of syphilis whatever. The presence of a moderate degree of optic neuritis was made evident by the ophthalmoscope. On the 28th February she was examined before the clinical class and a diagnosis of intracranial growth, probably of a syphilitic nature, was made. The iodide of potash in increasing doses, beginning at ten grains, was prescribed. On the following morning the diagnosis was aided by the occurrence of facial paralysis of the left side, which was observed on waking. This was well marked. Further examination showed that there was also a slight weakness in the left leg. In three weeks afterwards all trace of the paralysis had disappeared, and she left the hospital entirely free from headache.

Reviews and Notices of Books.

A Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By HOBART AMORY HARE, M.D., B.Sc., Clinical Professor of the Diseases of Children and Demonstrator of Therapeutics in the University of Pennsylvania, etc. Philadelphia: Lea Brothers & Co. 1890.

During the past few years a great number of text-books on materia medica have been published, only a few of which have any conspicuous merit. Many of them had better never been written. Dr. Hare's work belongs to the first mentioned class. It is a successful effort to bring together the disconnected facts of experimental pharmacology and clinical therapeutics. In this endeavour the learned author has branched out into a new track, and has produced a work which will save the student much and tedious work. In this volume the busy practitioner will find clear directions for carrying out a rational treatment of disease. The author ever keeps before him the necessity of knowing the "how" and the "why" in prescribing.

The Science and Art of Obstetrics. By THEOPHILUS PARVIN, M.D., LL.D. Second edition. Philadelphia: Lea Bros. & Co. 1890.

The second edition of Parvin's Obstetrics shews signs of very careful revision, and has been brought well up to date. Many sections have been rewritten, new illustrations added, and much valuable matter appended from foreign publications, notably from Winckel's new book. Dr. Parvin is a charming writer, and though inclined to be conservative (a good failing now-a-days), he is thoroughly sound in doctrine and abreast of the times. He is a powerful advocate of antiseptic treatment, and exposes with unsparing hand the fallacies and dangers of the *auto-infection* doctrine. Dr. Parvin's work is both instructive and suggestive, and is one of the best text-books for the general practitioner.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 30th May, 1890.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Myocarditis.—DR. HUTCHINSON exhibited this specimen, which showed a large caseating mass in the wall of the left ventricle. The patient, a young man, had died quite suddenly whilst engaged in playing a game of cricket.

Biliary Calculus.—DR. JAS. BELL exhibited this specimen, which was of unusual size, equal that of an English walnut. The patient who passed this calculus had for some days suffered from severe abdominal pain and stercoraceous vomiting. Operation of abdominal section was proposed, but refused by the patient. Enemata were used, resulting in the passage of a large gall-stone, followed by immediate relief of the symptoms.

DR. GEO. ROSS remarked that he had seen this patient with Dr. Bell, and was in doubt about substantiating a diagnosis of invagination. This case was one which had occurred rapidly, and without much inflammatory action. No meteorism of the belly. Wandering pains about abdomen; marked wasting. These symptoms, when considered with her age and the existence of defined obstruction, pointed, in his mind, to a growth malignant in its nature. Such a condition, however, warranted a surgical interference. From the history there was positively nothing to be gleaned which could substantiate a diagnosis of biliary calculus.

Vesical Calculi.—DR. JAS. BELL exhibited a specimen removed by the lateral operation from a patient the subject of diabetes mellitus. This same patient had had a vesical calculus removed one year previously by Dr. Roddick.

DR. HINGSTON exhibited a vesical calculus which he had removed by lateral perineal section in a patient 36 years of age. The calculus weighed a little over five ounces. Dr. H. stated that although satisfied with the operation and its results, in view of the great difficulty and delay in removing a calculus of so large a size, he thought the supra-pubic method, as recommended by Sir Henry Thompson, would offer less difficulty, and might otherwise be preferable. The calculus

exhibited was second in size to one, weighing five ounces and five drachms, removed by himself in July 1873, and of which an engraving was to be found in the sixth volume of the *International Encyclopædia of Surgery*.

DR. MCCARTHY then read his paper upon "*The Distribution of Lesions in Chronic Phthisis*," which appeared in the August number of this JOURNAL.

Discussion.—DR. GEO. ROSS corroborated Dr. McCarthy's views in laying stress upon the examination of the apices, especially posteriorly, many lesions being only detectable in these regions. He had himself often traced the course of tubercle in its march from apex of lung to the base, and found the physical signs running along the septal border. Unless we have disturbance of the tidal air do we exceptionally find basic phthisis.

DR. KINLOCH—Not knowing anything of Dr. McCarthy's theory, I saw a case recently which verified his views. There was a hectic flush and cough; no expectoration and no hæmoptysis. Examination of the front of the chest was negative in its results; looked for basic infection without any being found, but in the right apex behind I discovered a focus which had extended along the right axilla.

DR. F. W. CAMPBELL remarked that he had always insisted upon a thorough examination of the bases of the lungs, his experience teaching him that basic phthisis is not so rare as it is thought to be. He had frequently met with the lesion in this locality, especially in cases of phthisis which had developed after confinement.

Stated Meeting, 13th June, 1890.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Appendicitis.—DR. GEO. ARMSTRONG related a case of a young woman, aged 21, who had always suffered considerable pain at the menstrual period, and during one of the periods the pain was more severe than on former occasions. Two days after cæst of menses they ceased; the temperature rose within forty-eight hours from 99° to 102°, tympanites now making its appearance for the first time, and the pains located in the right

iliac fossa. Abdominal section was performed, and it was found that a perforation of the appendix had taken place. The appendix itself contained three fecal concretions (one also being found in the abdominal cavity), and it lay coiled up behind the cæcum. The large bowel was found to be gangrenous and the peritoneal covering coming off.

DR. SHEPHERD remarked that too great stress was not to be laid upon the temperature or pulse, as he had met with cases of appendicitis in which both were normal; one case the pain was located in the *left* side, and abdominal section revealed the existence of disease of the appendix.

Elephantiasis of Breast.—DR. JOHNSTON exhibited two specimens of elephantiasis of the breast, one of which was presented by Dr. Gooding of Barbadoes. These tumors are of a non-malignant nature and generally involve the whole breast; sometimes their growth is attended with pain. In the centre of one of the specimens was a large cyst, filled with degenerated fluid; these cysts are a secondary result of obstruction of the milk ducts.

Fibroma of Breast.—DR. JOHNSTON exhibited this for Dr. Shepherd. The growth had been of thirteen years standing, and was found to contain several cysts; when cut they seemed to open like the leaves of a book.

Dermoid Cyst of Breast.—DR. SHEPHERD remarked that he had removed such a tumor from a woman whose right breast had become "caked" after the birth of her second child. The tumor itself was movable and encysted, the contents being of a putty nature, and had the clinical appearances of a dermoid cyst. The occurrence of tumors of the breast of this nature is rare.

Retropharyngeal Abscess.—DR. JOHNSTON reported that the examination of the vagi nerves from this case (which was reported in a previous number of this JOURNAL) showed the presence of inflammatory tissue about the sheath of the nerves of a subacute nature. No tubercle bacilli were found in the sheaths.

DRS. WM. GARDNER and J. C. CAMERON then read conjointly a paper on a case of "*Labor Complicated by a Fibro-Myoma of the Uterus,*" (*vide* August number of this JOURNAL).

Stated Meeting, June 27th, 1890.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Nasal Osseous Cyst.—DR. MAJOR showed this specimen which he had removed from a patient suffering from polypi of the nose. It was situated on the middle meatus of the left side, and was readily removed by a wire snare.

DR. R. L. MACDONNELL then read his paper upon "*One Hundred Cases of Typhoid.*"

Discussion.—DR. SHEPHERD corroborated the statement of the reader of the paper as to the infectious nature of typhoid. Profuse rash in this disease he regarded as a favorable symptom.

DR. BELL remarked that his conclusions were given weight through a careful analysis of the many cases under his own observation whilst a resident of the General, and that he could not support the theory of personal contagiousness. The reason why those who sometimes contract typhoid after a long residence in hospital was due probably to the fact that many of the employees are often reduced in vital power from over-work, and thus placed in a condition suitable to the development of such a disease. Constipation he thought to be a favorable symptom. Acute phthisis he had seen developed in several cases of typhoid. As to the therapeutic measures, he had no faith in drugs as a means of aborting the disease. Antipyretics he thought acted by reducing the vitality, and therefore did not believe in their use.

DR. HUTCHINSON would verify the fact of frequent abortions in the course of typhoid. As to the use of antipyrin in reducing the temperature he had given up its use, as the administration of the drug in four grain doses had in three cases been followed by collapse.

DR. KIRKPATRICK related a case where the same bed had been used for another patient, the one having just recovered from typhoid and the second patient shortly afterwards developed it.

DR. JOHNSTON said that out of sixteen recent post-mortems of cases of typhoid fever he had only met with three in which perforation had occurred, therefore he could not be certain as to the

frequency of such a lesion. The percentages of such a lesion varies with different authorities.

DR. MILLS thought that the physiological functions of the alimentary canal are not sufficiently understood, and our ill-successes in treatment are undoubtedly due to this fact. He did not think that constipation was a favorable symptom, as it was frequently followed by an almost uncontrollable diarrhoea.

DR. ARMSTRONG disagreed with the reader in the contagiousness of typhoid from his experience of private cases which were isolated and attended with no further spread of the disease. He advocates antithermic treatment by the use of baths, which has a further effect of acting as a stimulant. Failure of the heart's action he did not think due to parenchymatous change in that organ, but to nervous influence.

DR. MACDONNELL, in reply, said that he had had only one death from perforation, which was verified by post-mortem, not three, as stated by Dr. Johnston. He agreed with Dr. Bell in the statement that most cases of typhoid developed amongst the students have not arisen from their attendance upon such cases at the hospital, but upon the unsanitary condition of the houses they live in, as most of those cases have developed amongst students of the first and second year, who do not attend the hospital. Constipation in the course of typhoid he had not seen give rise to any untoward symptoms.

Biliary Calculi.—DR. SHEPHERD exhibited the specimens which he had removed by cholecystotomy. (For full report of case and operation *vide Annals of Surgery*, November 1890, and *N.Y. Medical Journal*, Oct. 11, 1890.)

Notice of Motion.—DR. BELL gave notice that three months from date he would move that By-law IX, on page 6 of the By-laws and Constitution of the Montreal Medico-Chirurgical Society, be rescinded and omitted.

CANADIAN MEDICAL ASSOCIATION.

Twenty third Annual Meeting, held at Toronto, Sept. 9th, 10th and 11th, 1890.

GENERAL SESSION.

Dr. James Ross, Toronto, President elect, presided owing to the unavoidable absence of Dr. H. P. Wright.

The Secretary (Dr. Bell, Montreal) read the minutes of the last meeting of the Association, which were confirmed.

A report was read from the committee appointed at the last meeting to interview the Government in regard to the importation of surgical instruments and appliances at a reduced tariff.

Reports were also given by Drs. Muir of Nova Scotia and J. J. Farley of Ontario (local secretaries) upon the question of affiliation of the local societies with this Association.

Upon motion by Dr. James Stewart (Montreal), the following gentlemen were appointed as a nominating committee:—Drs. Praeger (Nanaimo), Chown (Winnipeg), Rodger and Lachapelle (Montreal), A. H. Wright and Sheard (Toronto), Campbell (Seaforth), and Holmes (Chatham).

Dr. Rodger (Montreal) was appointed chairman of the Surgical section, and Dr. Oldwright (Toronto) chairman of the Medical section.

Dr. James Ross, in the absence of the chairman of arrangements (Dr. Canniff), made announcements concerning the entertainments to be given during this meeting.

Drs. A. W. Quene and F. Wheeler-Waine of Detroit presented credentials as delegates of the Michigan State Medical Society and were introduced by the President.

Sir James Grant (Ottawa) was invited by the President to take a seat upon the platform.

The meeting then adjourned until 2 P.M.

AFFERNOON SESSION.

Dr. James Ross presiding.

The meeting being called to order, Dr. J. Stewart (Montreal) moved that the names of Dr. Prevost (Ottawa) and Dr. Sloan

(Blyth) be substituted for those of Drs. Campbell (Scaforth) and Holmes (Chatham), these latter gentlemen not having arrived.

The following gentlemen having been duly proposed and seconded, were unanimously elected members of the Association: Dr. E. H. Coburn (Fredericton, N.B.) and E. H. Rouleau (Calgary).

Hon. J. A. Ross, Minister of Education in Ontario, was introduced by the President, and made a short address of welcome.

The President then read his address, after which Dr. Prevost (Ottawa) was called upon to deliver the address in medicine. Sir James Grant (Ottawa) made a few remarks at the close of this address.

Dr. Oldwright (Toronto) having declined the chairmanship of the medical section, Dr. McPhedron (Toronto) was nominated by the President, and accepted the nomination.

The meeting then adjourned to sections.

SURGICAL SECTION.

Dr. T. A. Rodger (Montreal) in the chair.

A paper was read by Sir James Grant (Ottawa) on *Peri-Urethral Inflammation*. Discussed by Dr. Shepherd (Montreal).

Dr. J. F. Ross (Toronto) read a paper entitled *The Failure of the Removal of the Ovaries and Tubes to remove Symptoms*. Discussed by Drs. Walker (Toronto) and Shepherd (Montreal).

Dr. Shepherd then read a paper on *Cholecystotomy*. Discussed by Dr. Chown (Winnipeg), Dr. Oldwright (Toronto), Dr. Praeger (Nanaimo), Dr. Ross (Toronto), and Dr. Bell (Montreal).

MEDICAL SECTION.

Dr. McPhedran (Toronto) in the chair. Dr. Finley (Montreal) was appointed recording secretary.

Dr. R. L. MacDonnell of Montreal read a paper on *The Cardiac Complications of Gonorrhœal Rheumatism*. After drawing attention to the generally existing doubt as to the presence of cardiac complication in this form of rheumatism, a review of the literature of the subject was given, calling attention to the

published cases of heart affection in gonorrhœal rheumatism. An analysis of twenty-seven cases of gonorrhœal rheumatism was made from the records of the Montreal General Hospital, in which there were six cardiac cases. Three of these cases then were excluded, leaving three probably due to gonorrhœal rheumatism. A history of a case observed from the onset by the author was next described. A young man was attacked by oppression and slight joint pains. Some days later he was seen suffering from orthopnea, the symptoms resembling a case of acute pneumonia. On the following day a double friction pericardial murmur was detected, and it was only then that the presence of a gonorrhœa of five weeks standing was discovered. A mitral systolic murmur developed, and later on double pleurisy, which proved to be permanent. Recovery occurred after an illness of six weeks. Dr. MacDonnell concluded that although a considerable number of cases were recorded of this complication many would not bear inspection; that pericardium, endocardium and pleura are in rare cases involved in gonorrhœal rheumatism.

Dr. Graham of Toronto referred to the possibility of Dr. MacDonnell's case being one of ordinary rheumatism, owing to the transient nature of the joint pains. He doubted whether cardiac complication ever arose in pure gonorrhœal rheumatism.

Dr. MacDonnell, in reply, referred to cases in which cardiac complications had arisen in gonorrhœa without joint affection.

Dr. Nesbitt of Toronto read a paper on the *Pharmacology of Salicylamide*. The chemical and physical properties were first described and the author's method of preparation. Dr. Nesbitt finds that diastatic and peptic actions are diminished, and its action is detrimental to the development of bacteria. Experiments had been carried out by Dr. N. on the action of the drug on the nervous system, heart, and the effects on man as noticed in experiments on the author of the paper. The drug is an analgesic, and cases were quoted in support.

Dr. Finley read a paper on *Spinal Syphilis*. After referring to the various affections induced in the spinal cord by syphilis, three cases were reported. In one a gummy pressing on the

cord and causing ataxia, the symptoms were rapidly relieved by mercury, whilst the others being due to myelitis, had been but slightly influenced by treatment.

Dr. McPhedran referred to a case in which syphilitic disease of the cord simulated exactly locomotor ataxia.

Dr. Graham referred to a case of cerebral syphilis in which emaciation and dizziness were the only symptoms for a year, when hemiatrophy of the tongue developed, and specific remedies were applied successfully.

Dr. Stewart pointed out that the degenerative changes must be distinguished from gross lesions, the latter only being amenable to treatment by antisiphilitic remedies.

SECOND DAY.

After the reading and confirmation of the minutes the following gentlemen were elected members:—Drs. Geo. Acheson, Toronto; J. R. England, Montreal; A. Primrose, Toronto; — Lane, Mallorytown; F. G. Finley, Montreal; C. A. Jones, — Barrick, L. Sweetman, Toronto; Wm. Porteous, Montreal.

Dr. E. A. Praeger (Nanaimo), chairman of the Nominating Committee, read the following report, recommending Montreal as the place of meeting for next year:—

For President—Dr. T. G. Roddick, Montreal.

General Secretary—Dr. H. S. Birkett, Montreal.

Treasurer—Dr. W. H. B. Aikins, Toronto, re-elected.

Vice-Presidents:

Ontario—Dr. A. H. Wright, Toronto.

Quebec—Dr. E. P. Lachapelle, Montreal.

New Brunswick—Dr. G. H. Coburn, Fredericton.

Nova Scotia—Dr. John Stewart, Pictou.

Manitoba—Dr. D. Young, Selkirk.

British Columbia—Dr. E. A. Praeger, Nanaimo.

Prince Edward Island—Dr. Taylor, Charlottetown.

North-West Territories—Dr. G. A. Kennedy, McLeod.

Local Secretaries:

Ontario—Dr. Prevost, Ottawa.

Quebec—Dr. P. Robertson, St. Andrews.

New Brunswick—Dr. Bruce, St. John.

Nova Scotia—Dr. A. Morrow, Halifax.

Manitoba—Dr. T. M. Milroy, Portage-la-Prairie.

British Columbia—Dr. Jager, New Westminster.

Prince Edward Island—Dr. D. Mackay, Summerside.

North-West Territories—Dr. Oliver, Medicine Hat.

Committees:

Necrology—Dr. S. Davison (Toronto), Dr. James Stewart (Montreal), and Dr. Daniel (St. John).

Publications—Drs. Sheard and A. H. Wright (Toronto), Geo. Ross, F. W. Campbell, W. E. Desrosiers and L. Fortin (Montreal), A. Morrow (Halifax), and Pennifather (Winnipeg).

Ethics—The President, General Secretary, and the eight Vice-Presidents.

Arrangements—Drs. J. Bell, Rodger, L. E. Lachapelle, Desjardin, Lanarche and Shepherd, of Montreal, with power to add to their number.

Climatology—Drs. Oldwright (Toronto), McGuinness (Edmonton), and D. A. Campbell (Halifax).

Auditors—Drs. Rodger (Montreal) and A. A. MacDonald (Toronto).

Moved by Dr. Muir, seconded by Dr. Atherton, that the report be amended by the addition of a committee on Education and Literature, consisting of Dr. I. W. Cameron (Toronto), Chown (Winnipeg), and Shepherd (Montreal).—*Carried.*

Moved by Dr. Praeger (Nanaimo), seconded by Dr. Sheard (Toronto), that this report be adopted.—*Carried.*

Dr. Patton (Buffalo), an invited guest, was introduced by the President.

The subject of affiliation of the Canadian Medical Association with the provincial and local societies was brought up by a letter from Dr. Wishart, Secretary of the Ontario Medical Association, to Dr. Farley, local secretary of this Association for Ontario, stating that the question had been discussed at the last meeting of the Ontario Council, and a committee was appointed, consisting of the President, Secretary and Dr. Temple, to investigate the matter and to meet during the meeting of the Canadian Medical Association.

Drs. H. P. Wright, Farley and Muir, of this Association, were appointed to confer with the above-named committee

from the Ontario Association and to bring the matter before this Association at the general meeting to-morrow.

Dr. Chown (Winnipeg) then read his address on Surgery, taking for his subject *Hydatid Disease*.

Dr. J. C. Cameron (Montreal) next read his address on *Midwifery*, dealing with the elevation of temperature in puerperal conditions. (See page 241.) Discussed by Drs. Sloan (Blyth), Laphorn Smith (Montreal), Sweetnam (Toronto), Mullin (Hamilton), Gardner (London), Armstrong (Montreal), Praeger (Nanaimo), and Dickson (Toronto).

On motion of Dr. Burt, it was decided to have an evening session.

EVENING SESSION.

Dr. Muir (Truro) read an address on *Therapeutics and Materia Medica*. Discussed by Drs. English, Bell and McPhedran.

Dr. J. Campbell's (Seaforth) paper was declared read by title in the absence of the writer.

Dr. H. R. Elliott (Brucefield) presented a patient with molarum fibrosum and read a report on the case.

Dr. McPhedran read a paper on "*Pernicious Anæmia*." He detailed five cases. In the first there was delirium, chills with high temperature, and gastro-intestinal disturbance. The red blood corpuscles were typical—731,000 per cmm. Arsenious acid, gr. 8½ per diem, was taken for two months. Recovery complete in seven or eight months. Continues well. In Case 2 the symptoms were moderate; 606,000 corpuscles per cmm. Arsenic had to be intermitted every few days on account of epigastric pain, and was stopped altogether in four months, when the corpuscles had reached 2,600,000. Recovery complete in ten months. Case 3 followed parturition; was not severe; has a probable causative relation to unsanitary dwellings. Recovery complete in six months. Case 4 followed *la grippe*; simulated malignant disease of stomach. Does not stand arsenic well, even in minute doses. Not improving yet. Case 5 appears to have been affected two years ago, recovering partially without special treatment. Is progressing favorably on arsenic. In all these cases there was gastro-intestinal disturbance, high-colored, acid urine, not increased in volume, of low specific gravity,—these

characters being most marked during exacerbations, during which (in Case 4) there were found many renal casts containing much dark granular pigment, also much yellowish pigment, masses disappearing as the exacerbation passed off. No microscopic examination was made in the first three cases, and no pigment has been found in the urine of Case 5, who has had, however, no paroxysm since under observation. He said the work of Hunter, Mott and others shewed that the disease is characterized by excessive hæmolysis occurring in the portal system, due, probably, to some poison, possibly a ptomaine or some of the many albumoses that may be absorbed from the intestinal tract. The treatment advised consisted essentially in intestinal disinfection, thymol, beta-naphthol and naphthaline being the most effective agents for that purpose; the free administration of arsenic, in minute doses at short intervals if not well borne; and the hæmatogen-bearing foods.

Discussed by Drs. Rodger, J. Stewart, and J. E. Graham.

Moved by Dr. A. H. Wright, seconded by Dr. C. O'Reilly, that the thanks of the Association be tendered to the owners of the yachts for placing these boats at the disposal of the Association for a cruise on the afternoon of September 10th.

The meeting then adjourned.

THIRD DAY.

Dr. James Ross presiding.

Hon. Dr. Sullivan (Kingston) and Dr. Morehouse (London), President of the Ontario Medical Association, were invited to seats upon the platform, and delivered short addresses.

The by-laws were then brought up for adoption.

Moved by Dr. Henderson (Kingston), seconded by Dr. W. S. Muir (Truro), that the by-laws as read be adopted.

The following notice of motion was given by Dr. Mullin:—
“That no proposal for honorary membership shall be presented to the Association unless it shall have been previously submitted to a committee consisting of the President, Secretary and Vice-Presidents, who shall report to the meeting before the name is submitted for election.”

Dr. Trenholme's notice of motion being read and discussed, was laid over for the next meeting.

The following gentlemen were proposed and elected as permanent members: Dr. W. P. Caven (Toronto), Dr. J. E. Eakin (Belleville), and Dr. English (London).

Dr. L. Smith (Montreal) read a paper entitled *Why Apostoli's Method sometimes Fails*.

Dr. W. Walker (Toronto) read a paper on *Electricity in Gynæcology*. Discussed by Dr. Smith (Montreal), Walker, Dickson (Toronto), Sloan and Henderson.

Dr. B. E. McKenzie exhibited a case of spinal curvature (lateral), explaining methods of treatment.

Dr. H. S. Birkett (Montreal) read a paper on *Hemiatrophy of the Tongue*, upon which a few remarks were made by Dr. Shepherd.

Dr. Smith (Montreal) read a paper on the *Local Administration of Bichloride of Mercury as an Alterative in Pelvic Exudations in Women*.

Dr. A. Proudfoot (Montreal) read a paper on a *Severe Case of Epilepsy Cured by Enucleation of an Eye containing Ossific Deposits*.

Moved by Dr. J. Stewart, seconded by Dr. England, that the remaining papers be considered as read.—*Carried*,

The Treasurer's report was received and adopted.

The joint committee appointed to investigate the question of affiliation reported as follows, through Dr. H. P. Wright, chairman:

“Your committee beg to report as follows,—

“Whereas it was resolved at the Banff meeting of this Association that negotiations be entered into between the Dominion Association and the various Provincial associations with a view to draw the members of the profession in the Provinces more closely together; and whereas the Provincial associations of Nova Scotia and Ontario have cordially entered into the idea and are willing to affiliate if a general basis be adopted;

“That it be hereby resolved that each Provincial association be requested to send to each meeting of the Dominion Medical

Association at least *four* delegates, and in those provinces where no Provincial association exists, that one delegate be received from each local association, and that the secretary of this Association be instructed to communicate to this effect with the various provincial and local medical associations."

Moved by Dr. Gardner, seconded by Dr. Sullivan, that the report be received and adopted.

After motion of thanks to the President, Educational Department, and retiring Secretary, the meeting adjourned.

Selections.

LETTERS TO MY HOUSE PHYSICIANS.

By WILLIAM OELER, M.D.,

Professor of Medicine, Johns Hopkins University, Baltimore.

LETTER II.

BERNE, May 21, 1890.

DEAR T.: Within an hour after reaching Basel we were in the *Vesalianum*, as the anatomical institute is called, looking for the skeleton which Vesalius presented to the university when he was here in 1542-'43 supervising the printing of his great work. Historically this is probably the most interesting museum specimen in existence, and to Professor Roth is due the credit of determining accurately the fact of its association with Vesalius. Several years ago he sent me his paper on the subject, an abstract of which you will find in the *Medical News* for 1887 (or 1888) in an editorial note. The plates of his work were drawn from this skeleton, which is treasured by the Basel faculty as a most precious relic. Above the glass case in which it is contained is this inscription: "*Männliches Skelet das der Meister der Anatomie Andreas Vesal, aus Brüssel, der wiesigen Universität schenkte als er 1543 sich in Basel aufhielt um der Druck seines grossen Anatomischen Werkes zu besorgen.*" Well may he be called the Master of Anatomy, the great Reformer in Medicine, for his work loosened the chains of tradition in which the profession had been fast bound for centuries. His was a bold and venturesome spirit which could dare dispute the statements of Galen and Hippo-

erates, dogmas revered by the physicians of the sixteenth century as are to-day those of Calvin and of Luther by certain theologians. Prof. Roth has recently published an interesting paper (*Quellen einer Vesalbiographie*, Basel, 1889), in which he has given the results of his researches among the archives of the University of Padua, and he has determined definitely for the first time the date and place of the graduation of Vesalius—Padua, Dec'r 5, 1537. Please note, too, that he was a young man when he published his great work, another illustration of the theory upon which I am always harping, that a man's productive years are in the third and fourth decades. It is not a little remarkable that the skeleton should be in such a state of preservation; but above it lies another, prepared by Felix Plater, a renowned Basel professor of the 16th century, also in excellent condition.

The Basel Hospital is an old building but very conveniently arranged and with beautiful gardens, in the middle of which is a large summer ward for women and children. I am much indebted to Director Hoch for his kindness in showing me the different departments. In the operating room the table is constructed of zinc with a hot-water chamber, above which is a perforated plate so that irrigation can be carried out. The warming-pan—of which it is practically only a special example—is also perforated in the middle for the escape of the solutions. I am sure that for prolonged operations this is a great advantage in counteracting the depression so liable to occur both from the shock and from the anæsthetic. Not ten days ago I saw the same arrangement in use at the Physiological Laboratory of University College, London, in a prolonged experiment upon the brain of a monkey. Professor Schäfer told me they had found that the animals stood the operations very much better and revived more promptly if the body temperature was kept up in the artificial way. So important did he seem to think it that additional hot water was put in at the end of about an hour and a half.

We found Professor Socin in the operating-room with a class of about thirty men, a patient on the table, and a senior student in the arena, who, during the course of an hour, underwent a

most searching examination on tuberculosis of joints and on the particular case before them. It was certainly a most instructive method of procedure, and it was fortunate the poor patient was deaf, as the questions of prognosis and of treatment were discussed thoroughly. Amputation of the leg was then performed, as the disease had progressed too far for resection. We could not but feel, however, that it was hard to keep the poor man waiting on the table. Certainly the ward would have been the more appropriate place for the instruction. The Basel students have an exceptionally clear and decisive teacher of surgery; here again the colored chalks on the blackboard were used at least half a dozen times to illustrate special features of the disease and steps of the operation.

Professor Immermann has charge of the medical clinic, and has a conveniently arranged, though not large, clinical laboratory. The lecture-room is attached to the medical wards, and we heard for half an hour a very practical talk on the treatment of acute Bright's disease. A point specially insisted upon in the later stages was the flushing of the tubes by a plentiful supply of liquids. Then the class was taken into one of the men's medical wards, and a student examined a case of typhlitis, upon which the comments of Professor Immermann were very interesting. The young man had been seized five days before with pain in the right iliac region, not of an agonizing character, and moderate fever, so that he had to give up work. He had not been particularly constipated prior to the onset of the pain, but he had had, several years ago, a somewhat similar attack. The examination showed simply pain on deep pressure in the right iliac fossa, no tumor, no signs of peritonitis. The case was regarded as one of appendicitis, and, as the symptoms had progressively improved, the treatment was confined to the administration of opium and the use of local applications. Great stress was laid on the absence of tumor as a differential point in the diagnosis of appendicitis and typhlitis from fecal impaction. I gathered that Professor Immermann believed in the existence of a typhlitis apart from appendix disease; and the tumor, which is more apt to be present in these cases, may be due either to primary im-

paction or to fæcal stasis in the cæcum in consequence of the inflammation. Now, this was a case which illustrated the point I mentioned in my letter to L. I have not the slightest doubt that, if a laparotomy had been performed, an inflamed and adherent, possibly a perforated, appendix, would have been found, yet the lad was recovering under ordinary measures. Still, the risks are very great, balancing those of an operation even at this early stage, as perforation into the general peritoneum is always imminent, and then there is the liability to recurrence, as shown, indeed, in this case.

In the Vesalianum one of the Privat Docenten, von Lenhossék, showed us the method of preserving subjects, which is that of Laskowski of Geneva. An injection of glycerin with carbolic acid, with a little alcohol, is first made, and then the ordinary Teichmann's mass, consisting of putty and bisulphide of carbon, with a suitable coloring ingredient. A preliminary washing out of the blood-vessels is advisable. In Geneva the subjects are wrapped in sheets, which are sprinkled with water, and Ramsay Wright tells me that the bodies were in an excellent state of preservation. Von Lenhossék said that they found it necessary to use alcohol in the tanks. The muscles are certainly very well kept by this method, and the dissection is said to be easier than in bodies preserved with the bichloride of mercury.

In the pathological laboratory Prof. Roth showed us a recent specimen of enormous epithelioma which had developed in an old leg ulcer, the result of a fracture many years before. The tumor had involved the bone and the leg had to be amputated. Under his direction, Dr. Dubler, the assistant, has been making an interesting research on suppuration, which has just been published. He comes to the conclusion, from a very large series of experiments, that the pus formation which follows the injection of chemical substances is the result of a delimiting inflammation about a primary necrotic area, and in the same way bacteria act by causing a necrosis, which the suppuration removes, so that there is no essential difference between the process in the two cases.

Here in Berne we found a model hospital on the pavilion plan,

situated on a sloping hill on the outskirts of the town, and from the wards there is a magnificent view of the Bernese Oberland. The appearance of the pavilions, rising one above the other in the grounds, is very effective, and the new Royal Victoria Hospital in Montreal, which is also to be on the side of a hill, will, I think, resemble this very much. The Pathological Institute is a large, separate building, with every possible convenience for teaching and research. Professor Langhans, was kind enough to show us all his treasures, not the least interesting of which was the skeleton of a bicapitate monster, presented to the university over a hundred years ago by the great Haller, who was a Swiss, and who lived near Berne, I believe, after his retirement from Göttingen. In the post-mortem theatre I was glad to see that to the students' desks towels were attached, a convenience rarely met with.

The medical clinic is in charge of Professor Sahli, a comparatively young man, appointed last year. There are two stories in the chief medical pavilion, with four wards, and there is accommodation for about eighty patients. Connected with it by a covered passage is the lecture-room, with seats for about 100 students. A very complete electrical equipment and tables for urinary and microscopical examination are on either side of the arena. There were 84 students at the clinic, 18 of whom were women. After a careful analysis with a student of the chief points in the history and treatment of whooping-cough, a case of diabetes was brought in from the wards, and the next *Practicant* on the list happened to be a woman, who went through the ordeal of questions in the various modes of testing for sugar in the urine. The saccharometer of Hermann and Pfister was shown, and then, after the clinic, those students who so desired had an opportunity of seeing the practical working of the apparatus. On either side of the amphitheatre is the clinical laboratory, with bacteriological, chemical, and microscopical rooms, large, admirably equipped and very convenient to the wards. Berne is one of the Swiss schools most frequented by women, of whom about fifty are at present in attendance. I was told by one of the professors that they were good students; as a rule, very attentive and indus-

trious, but not always sufficiently prepared in the preliminary subjects. Those at the lecture were all young, but I did not see one who looked likely to become the Trotula of the twentieth century.—*N. Y. Medical Journal*.

Notification of Infectious Disease and Mistakes in Diagnosis.—The practice of notification to the health authorities of all cases of infectious disease with their immediate isolation is obviously of such great value as a prophylactic that it is becoming almost universal. In England the optional act, which only came into force less than a year ago, has been voluntarily adopted by authorities which have jurisdiction over about 12,000,000 of people. This, with the compulsory act applied to London, and with those fifty-six towns or localities which had previously obtained powers of compulsory notification by special local acts, makes compulsory notification now practiced with respect to about 20,000,000 of people. In Canada, we learn that the practice is generally very fairly carried out. A few fines for neglect, in certain places, have been imposed. With the tremendous gain to the public conferred by this practice, great responsibility is thrown upon medical practitioners, especially from possible mistakes in diagnosis. Some practitioners in the United States have encountered actions for heavy damages from mistakes in this way, and there has been some serious trouble of a like kind in this country. Such mistakes are liable to occur to almost any physician, especially without the utmost skill and care. According to Dr. Russell, medical officer of Glasgow, of 1,499 consecutive cases admitted to Belvidere Hospital as suffering from infectious disease, 114, or 7.6 per cent., did not suffer from the disease which they were supposed to have when they were sent in; and of that 114 no fewer than 85, or 5.7 per cent. of the total cases, had no infectious disease at all and ought not therefore to have been removed. There are two principal remedies for the troubles to practitioners liable to arise from errors of this kind in the practice of notification. First, physicians, wherever the practice is enforced or carried out, should insist on having provided, in connection with

the isolation hospitals, observation wards for the reception of cases of doubtful diagnosis. Physicians have generally "taken kindly" to this practice of notification for the public good, and the least the public can do is to afford this protection where possible; and it could usually be made possible. Such provision obviously provides also for the public safety, and it is little short of criminal neglect when such wards not provided. The other remedy we will but merely name: it is better facilities for the study, and closer study, by students at the schools, and even by physicians at post-graduate schools, of clinical cases of infectious disease, in order that the greatest skill may be brought to bear on diagnosis. This is strongly urged by Dr. Russell.—*Canada Health Journal*, Sept. 1890.

Classification of Vesical Tumours. (By SIR HENRY THOMPSON, F.R.C.S.)—The classification presented here is founded to a considerable extent on my own experience of the forty-one cases operated on and now reported, each tumour having been examined by a competent pathologist; but besides observing several other cases in consultation, as well as taking the supervision of some in which, for various reasons, no surgical procedure was admissible, I have made a study of numerous preparations in the London museums. From these sources chiefly the following varieties of vesical tumour are enumerated and classified, commencing with the most simple.

1. The *mucous polypus*—which is not to be confounded with prostatic outgrowths of similar form, these being inadmissible in any scheme comprising vesical tumours—resembles polypi of the nasal cavity, but is more compact and solid in structure. Hitherto this product has been found in young children only.

2. *Papilloma*. The papillomatous growths appear in two forms, the essential character being that the structure of the characteristic portion always resembles that of the natural papillæ occurring in certain parts of the digestive canal. The constituent element consists of a prominent fold of simple membrane, supported by connective tissue containing a large arterial twig as a central axis, while the outer surface of the membrane is closely covered

by a layer of cylindrical epithelium, or, much less commonly, by the ovate or spherical variety. Formerly these growths were called 'villous,' to which it was usual to add the term 'cancer,' although the implied allegation was entirely unwarranted by evidence. When these prolongations are very long, slender, and floating in the bladder, the papillomatous growth is termed 'fimbriated.' When a considerable portion of fibrous tissue is present, rendering the growth more solid, the designation 'fibro-papilloma' is more appropriate. These growths form very slowly at first, but when developed give rise to repeated attacks of hemorrhage, which in time become continuous and copious, thus terminating life. They are the most commonly met with of all vesical growths, and their symptoms have been often mistaken for those of renal disease. Microscopic examination of the urine will sooner or later (especially if the bladder is washed out with water and the *débris* scrutinised) detect specimens of the growth, which are quite characteristic, and absolutely decisive that the growth is present. Moreover, on careful inquiry, it may be ascertained that the bleeding is found occasionally, sometimes frequently, to appear in a manner which can rarely or never be met with in renal hemorrhages. The patient commences an act of micturition with clear or almost bloodless urine, and at the end of the act bright florid blood is mixed with the stream, or appears alone at the close. This fact determined, the bleeding is without doubt vesical, and if for a considerable period of time there is still but little pain experienced, and the act of micturition is, as a rule, not very frequent, the bleeding is certainly not due to a sarcomatous or carcinomatous growth, and is therefore very probably significant of papilloma.

I may remark here that I know no styptics which appear to control the hemorrhage from this source, although I have seen all the known remedies abundantly tried. Treatment by local injections is apt to provoke rather than check the flow of blood.

3. The *simple myomatous* tumours are not very uncommon; they are not accompanied by any characteristic signs of their presence, but have sometimes a papillomatous growth on their surface. Nothing further remains to be said here in relation to

diagnosis, except that their progress is slow and the characters of malignant growth are absent.

4. Tumours made up of fibrous tissue chiefly, more or less associated with small nuclei interspersed. Sometimes these are in large quantity, a fact which leads to a graver estimate of their character, as indicating that they probably possess a tendency to return after removal. Both these and the preceding kind involve the deep structures of the bladder, and cannot be entirely separated by any operative procedure; while, on the other hand, many examples of papilloma, especially when growing from a pedicle, may be completely removed, and often do not return.

5. *Epithelioma*, the nature and characters of which in the bladder are those of this growth in all other parts of the body.

6. *Scirrhus*, or 'cancer' properly so called, not occurring until after the middle term of life has been reached, is occasionally met with in the bladder.

7. The *round- and spindle-celled sarcomata*, formerly known as 'encephaloid,' are sometimes met with in children, but affect not infrequently the adult also. There are three cases of these sarcomata in the series. One, No. 32, is at present unique as regards the bladder. The preparation was examined by one of our most practised and able pathologists, Mr. Shattock, curator of the museum of St. Thomas's Hospital, who reported on it as follows:—

"This tumour consists in part of perfectly formed cartilage, and in part of sarcoma tissue. The latter is of the spindle-celled and mixed kinds, and the process of its chondrification is readily traceable; the cells become surrounded by matrix, and by their subsequent multiplication and secondary capsular formation there is produced the characteristic structure of ordinary cartilage."

The diagnosis of malignant disease of the bladder is not difficult. Examination of the rectum furnishes valuable information. Scirrhus growth is very hard, irregular in form, and is thus unlike ordinary senile prostatic enlargement—that is, the so-called 'hypertrophy' occurring in elderly men. The sarcomata are full and rounded in form, more elastic to the touch than 'senile enlargement,' and far more rapid in their rate of increase in size.

Epithelioma, slow and restricted in growth, may exist several years before presenting a tumour sufficiently dense to be recognized by palpation or by sounding. In malignant disease pain is soon a more or less constant symptom, and some hemorrhage is liable to appear, increasing at a later date; it is thus distinguished from papilloma, which is rarely recognizable by the rectum, or even by the sound, manifests its presence first by hemorrhage, often at an early date, and is rarely painful until quite the later stage of its history. In all the three forms of recurring or malignant growths, microscopic observation may corroborate a diagnosis based on the signs and symptoms mentioned, but cannot by itself establish one.

I shall now offer a brief summary of the results of the operations which I undertook in these 41 cases, of which 34 occurred in male and 7 in female patients.

I. In seven cases (Nos. 1, 20, 29, 31, 34, 36 and 38), there has been no reappearance of symptoms of any kind, three years having elapsed since the most recent, and nearly ten years since the first case of the series. All are living and well except No. 20, who met his death by accident some two years after, but the bladder was examined by his medical attendant after death, and sent up to the museum of University College Hospital, London, where it now is, together with the tumour originally removed; no trace of reappearance can be found in it. In every case but one the nature of the tumour was papilloma, the exceptional case, No. 20, being probably a myoma. In three cases the growth was removed by forceps through a perineal incision; in one female case, dilatation of the urethra sufficed; and in the three remaining cases by suprapubic operation.

II. In fifteen other cases death occurred at different periods, varying between three days and four months after the operation. Ten of these were the subjects of malignant growth of some kind, epithelioma and sarcoma in two or three varieties. Two were papilloma, apparently simple. The rest were myomatous, but containing nuclei which aroused suspicions of a grave character. It is worthy of remark that in five of this series papilloma was also present on the surface, and therefore probably as a secondary product to a more important growth, as myoma or sarcoma.

III. Nineteen patients remain, who lived after the operation for periods varying from about a year or a little less, up to four years, one of these being now in good health (two years after the operation), much stronger and stouter than before, but is just beginning to note the reappearance of a little blood, and is, therefore, not entitled to be regarded like the first class, or those in whom the recovery was permanent.

I think it will be admitted, as the result of all past experience, that the subject of a bleeding vesical tumour invariably dies of his disease more or less speedily, unless its removal is accomplished. Every instance, then, of operation which effects this and produces a permanent cure is a life absolutely gained by the surgical art. But when this is unhappily not to be accomplished, a partial removal has obviously prolonged life, and afforded an interval of renewed health and freedom from pain, etc., sometimes of great value to the patient.

Thus the foregoing results, although of necessity furnishing many instances of failure, demonstrate our power to offer invaluable aid to a certain proportion of otherwise fatal cases. For no individual case is it possible to predict the issue of an operation. Not until the scalpel has opened the way and permitted the operator to lay his finger on the growth, and thus ascertain its physical characters, can he say whether it can be completely removed; and when it is not possible to do this, the probability of return must be feared.

In all cases in which we can ascertain the presence of malignant disease—carcinoma, sarcoma, epithelioma—I am strongly of opinion that it is useless to attempt to remove the growth, and that such interference is liable to aggravate the sufferings of the patient rather than otherwise, and perhaps hasten his end.

Setting these cases aside, I am not less strongly of opinion that it must almost invariably be our duty to recommend an operation for removal, not only when the disease is obviously not malignant, but when there is any reasonable doubt on the subject, which will in the course of the operation be cleared up, and the procedure can then be limited or not, according to the judgment of the surgeon.

In relation to cases in which doubt may arise it must not be forgotten that papillomatous growth may be present as a secondary growth upon another form of tumour in the bladder, so that its presence among the *débris* examined does not demonstrate the presence of a simple uncomplicated papilloma. No doubt in a large majority of cases the simple growth alone is present, but the exceptional condition is not very rare. It is on this account that I often practise and advise a small perineal incision to be made in the median line, opening the urethra in the membranous portion, so that the surgeon may introduce his index finger into the neck of the bladder. This proceeding I have recommended and much practised during the last ten years in obscure cases, under the title of "Digital Exploration of the Bladder." When the patient is thoroughly under the influence of an anæsthetic firm suprapubic pressure enables the operator in all ordinary cases to determine with his finger the size and nature of the tumour. If it be a simple pedunculated growth, as papilloma often is, the introduction of an appropriate forceps will mostly suffice at once to remove it. If, on the contrary, it is found to be large, occupying a wide base, or is otherwise evidently unfitted for treatment by the simple proceeding referred to, the suprapubic operation can be at once performed in the usual way. This I have frequently done, and have never found that the preliminary incision described interferes in any way with the subsequent operation, which is conducted precisely as if no such 'exploration' had taken place. When a large prostatic or other tumour is encountered in the rectum it is possible that the finger may not reach the bladder, and so may be incapable of exploring the cavity, but in these circumstances the "digital examination" is wholly unnecessary, the condition in question demonstrating that the case is not one of simple removable tumour, but is probably an example of malignant growth. But it may be said that the diagnosis of a vesical tumour may be readily established by means of the Leiter endoscope. I long ago tested its value, having employed not only the earlier but the latest and most improved form of that instrument. Let me say, first, that the employment of it in the cavity of the bladder involves much irritation in some

cases, far more than that which follows the use of the sound. Secondly, that in presence of a tumour which the slightest mechanical contact causes to bleed the observation is mostly an imperfect one. Thirdly, that the instrument is rarely necessary to determine the fact of the tumour's presence, that being ascertainable in nine cases out of ten by the ordinary methods already alluded to. Lastly, it is assumed to furnish the means of ensuring a view of the growth which shall enable the operator to determine whether it is peduncular and easily removable, or the reverse. In regard to this important matter, I admit that the object may be attained, but in the majority of cases I am certain it cannot be thus decided, as when the tumour is not seen in profile, and when the bleeding occasioned permits only an imperfect view, a far more accurate idea can be obtained by "digital exploration," which never produces the severe cystitis, becoming chronic and confirmed, which unhappily too often follows prolonged manipulation with a rigid cystoscope in the diseased bladder of an elderly patient. I have performed "digital exploration" upwards of a hundred times and have never met with any serious, far less fatal, issue to that simple operation.

Finally, supposing that by any process whatever the presence of a manifestly carcinomatous or sarcomatous growth has been discovered, I can say nothing, as already indicated, in favour of operative measures for its removal. It is always possible to extirpate the growth, which largely involves the walls of the organ itself, and rapidly reappears after the attempt has been made, although large masses may have been taken away and an apparently almost empty cavity has been left as the result of the procedure.

The palliative treatment for all patients thus affected consists in the avoidance of habits, occupations, and any amount of exercise found by the experience of each individual case to produce serious increase of hemorrhage; the maintenance of the digestive power and healthy activity of the functions which support life is as far as possible to be ensured; and lastly, the adoption of all means, especially towards the closing stage of a case which is certainly destined to be fatal, in order to alleviate suffering which

is usually severe and prolonged, unless dealt with unflinchingly, as it ought to be in such painful circumstances. The ample use of morphine, usually most effective by subcutaneous injection, should be adopted, so that although unable in any way to check the progress of the malady we may at least mitigate the most terrible accompaniment of its distressing and inevitable course.—(*British Medical Journal.*)

Aneurysm first recognized in Fundus of the Ear, later appearing in the Neck.

—This interesting case was reported at the last meeting of the American Otological Society (July 15th) by Dr. Chas. A. Todd of St. Louis. Mr. C—, aged 45, came under observation complaining of pain in the left ear and symptoms suggesting furunculus. In 1858 he had had severe otitis media in both ears for one week, followed by discharge, which ceased without treatment. Some deafness has existed since. For the past seven or eight years he had noticed a pulsating sound, at first in both ears, now in the left. On examination of the left ear there was seen a circumscribed swelling on the floor of the meatus, just in front of the membrana and entirely concealing it. It was soft and fluctuating. Filling the ear with water, a distinct intraural pulsation could be seen. The swelling was lanced under the supposition that it was furuncle. There was a free gush of blood, and three ounces were lost before the flow could be stopped by tamponing. No pus whatever was seen. The tampon could not be permanently removed for several days. Compression by tampon was advised to be continued at home. August, 1880, it was learned that compression had afforded little benefit. Ligation of common carotid was suggested if symptoms were considered sufficiently severe. March, 1883, patient was again seen. Electrolysis had been tried with asserted diminution in size. March, 1890, the aural tumor was still present, but in addition there was a large aneurismal swelling of the neck below the ear. The patient was then referred to a general surgeon, and has not since been heard from.—*N. Y. Med. Record.*

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ETHER INEBRITY.

For a period of nearly fifty years the use of ether as an intoxicant has been common in certain parts of Ireland. Lately it is said this practice has extended to England and Scotland, and in some parts has reached alarming proportions. A leading article in a recent number of the *Lancet* directs special attention to the injuries, immediate and remote, following this method of intoxication. The writer gives an account of an ether-drinking scene witnessed in Ulster. The ether was served out in wine-glasses. The drinker first washed out his mouth with a draught of cold water, and after that tossed off a wine-glassful of ether "nate," as it was said, drinking it quickly, almost at a gulp. Both men and women took part in this indulgence, and were speedily brought into a state of intoxication, more or less complete. The practice of ether drinking in Ireland dates from the time of Mathew. This great temperance reformer succeeded in convincing several million Irishmen that whiskey drinking was very injurious, but his good works were in the majority of cases of short duration. Ether being recommended by a few as a stimulant, which caused exhilaration but not intoxication, the people naturally were not slow to test its powers, and with the result that at the present time there are a great number of confirmed ether inebriates.

The character of ether intoxication differs considerably from that of alcohol. The preliminary period of excitement is more marked, but shorter in duration. If the quantity taken is sufficiently large, the stupor state, although brief, is profound, and may prove fatal. Owing to its being rapidly eliminated,

the injuries inflicted on the tissues by ether are much less than those that result from alcohol: the chief disturbances brought about being an inflammatory state of the stomach and peripheral neuritis. The vascular and connective tissue changes so common among the alcoholic inebriates are not met with among ether drinkers.

THE CANADIAN MEDICAL ASSOCIATION.

The twenty-third annual meeting of the Canadian Medical Association, held in Toronto on the 9th, 10th and 11th ultimo, was in some respects a disappointing gathering. The registered attendance only reached one hundred and five. When we consider that there are, in the Provinces of Quebec and Ontario alone, considerably upwards of 3,000 regular medical practitioners, it does not speak much for their interest in professional work to find that only one in thirty of their number were present at a meeting organized solely for the purpose of promoting matters relating to their profession. This lack of interest in an Association which has done so much, especially in its early days, to advance our common interests is deeply to be deplored.

How to infuse a living interest into the thousands of our numbers who are sleeping the sleep of indifference is a problem of first importance.

In a scientific sense the meeting was fully up to the average of past years. All the addresses and many of the papers read were of a high order. The members of the profession in Toronto who were present exerted themselves in every way to make the stay of their outside brethren both pleasant and profitable. Dr. Ross, the genial president, was especially active in doing his utmost to make all visitors feel at home.

NOTES.

—Dr. Praeger, of Nanaimo, was the only representative from the far Pacific Coast at the Canadian Medical Association meeting. He deserves great credit for spending so much time and money to be present. His able remarks added much to the interest of the meeting.

—We were pleased to meet Dr. Muir of Truro, N.S., and

Dr. Coburn of Fredericton, N.B., at the Toronto meeting. Dr. Muir's address on Therapeutics was an able resumé of the recent advances in this subject.

—One of the most interesting papers read at the meeting was by Dr. Chown of Winnipeg, on Hydatid Tumors. He gave details of several cases that he had under observation in the Winnipeg hospital.

Medical Items.

THE ADIRONDACK FOREST.—Dr. A. L. Loomis says that when he first visited the Adirondack forests twenty-eight years ago he was suffering from what was regarded as a hopeless case of pulmonary disease. After an eight months residence there he returned home perfectly restored. Since then he has constantly sent patients to this region, and from this experience he is prepared to maintain that no other such health resort exists. For this reason he is especially active in preserving the forests for this purpose. He wants the German forestry system practically applied to the Adirondack region, and so is active in the efforts made to check the vandalism of railroads and lumbermen. He wants the State to purchase the entire tract, place the region under control of a forestry commission to be managed upon scientific and business principles; the hunting and fishing privileges to be let at a definite sum, the timber cut under the direction of the commission and marketed by a responsible officer. By such supervision a new crop of trees could be marketed every thirteen years and so be a large source of income to the State, quickly paying for the bonds needful for the purchase of the tract at the first. We hope Dr. Loomis's plan may be speedily carried into operation.—*American Lancet*.

AN ORIGINAL EMERGENCY OBSTETRIC FORCEPS.—At the recent Nashville convention many stories were told by those in attendance, while comparing notes concerning professional experiences. One practitioner, Dr. W. C. Blackman, of Davidson County, Tenn., related his experiences in two obstetric cases. In both instances he decided that immediate delivery was necessary. The natural forces had given out. He had no forceps with him, no neighbors to call on for assistance, and he was miles from home. Fortunately in both houses there happened to be

pairs of shoemaker's pincers with stout curved handles. The latter were slipped over the heads of the children, and by pulling against the pivoted lock successful extraction was made. Both mothers and both children made perfect recoveries. One of the latter had a scar just at the edge of the hair, but the growth of the latter (the child being a girl) soon covered it up. This girl grew up into blooming womanhood and was married the week before the convention met.—*Medical Record*.

CHRONIC ALCOHOLISM IN A BOY OF THIRTEEN YEARS.—At the meeting of the New York Pathological Society, held on the 23rd April last, Dr. H. M. Briggs presented a specimen of advanced cirrhosis of the liver, taken from the body of a boy 13 years old, in whom were found all the other lesions of chronic alcoholism. When the child was two years old he had an attack of bronchitis, for which the physician prescribed whiskey. He seemed to be fond of it, and his parents allowed him to gratify his taste whenever he desired, giving him money for the purpose. He used to drink about an ounce and a half six or eight times a day. The day of his death he purchased a larger quantity than usual, and drank it all at once. He was found some hours after in a semi-comatose condition, from which he never rallied. At the autopsy the liver was found to be markedly cirrhotic, and all the other lesions of chronic alcoholism were present in advanced degree.

ANTIVIVISECTION BITTERNESS.—The Society for the Protection of Animals from Vivisection recently held its annual spring conference in London. The war-cry this year was "Pasteurism and Crime," and Canon Wilberforce is reported to have rejoiced in the fact that the movement to found a Pasteur Institute in England had been defeated by the Society's method of placarding the city with large posters containing the list of those who had died after treatment by the Pasteurian system. Many others indulged in bitter denunciation of both vivisection and Pasteurism, as being the means of brutalizing the otherwise honorable and useful profession of medicine. One speaker likened vivisection to the liquor traffic, and said that inasmuch as it would be impossible to regulate either by laws, they must be torn out root and branch. Other speakers said that they could prove by competent medical testimony that humanity had been injured by the attempt to apply the results of investigations made on the inferior animals. Altogether, much zeal, though but little knowledge, was exhibited by these people, who are friends to every animal but man.—*Medical News*.