

DOMINION MEDICAL MONTHLY

AND ONTARIO MEDICAL JOURNAL

VOL. XIII.

TORONTO, OCTOBER, 1899.

No. 4.

Original Articles

No paper published, or to be published elsewhere as original, will be accepted in this department.

MOVABLE KIDNEY.*

By F. B. WILKINSON, M.B., SARNIA., ONT.

Mr. President and Members of the Society,—Allow me first to express my appreciation of the honor of reading a paper before you to-day, as well as the pleasure I feel in meeting the members of the profession on this side of the river.

The subject chosen, while not of such common occurrence as to be of general interest, offers a solution of a class of cases that have, from the number of diagnoses made, been obscure in their cause, and complex in their symptomatology.

Instead of following the usual routine, permit me to outline a few cases selected, with a view of showing the varied symptoms a movable kidney may be the cause of, and use them as a text for a few general remarks.

CASE No. 1.—Female, aged 28; very movable in all directions; three children; normal labors; has not lost flesh; felt a sense of fullness in right side, no pain or disturbance of any kind; accidentally discovered an enlargement, for which advice was sought, and which still remains after five years. Health perfect, and not the slightest reflex neuroses.

*Read before the North-Eastern Medical Society of Michigan, held in Port Huron.

CASE No. 2.—Female, aged 38 ; married, five children ; labors normal ; movable downward. First symptoms commenced eighteen months ago, with pain in the right inguinal region extending up to liver, increased rapidly ; cannot ride in buggy or street cars, is all right when lying down ; without warning a severe attack of pain on right side—this could not be well located ; it occurred at irregular intervals, lasting from one to ten hours. Complete relief from pain at first ; as the attacks became more frequent, there was more or less soreness in the region of the kidney. At no time was there any gastric trouble. Five weeks after operation she rode seven miles in a buggy without pain.

CASE No. 3.—Male, aged 29 ; movable, slightly downward, previous health good ; gradually suffered from gastric dyspepsia of the fermentative character, distension of bowels, wandering pains, progressive loss of flesh from 180 to 130 lbs. The most pronounced hypochondriac I ever saw. There was not a symptom inquired for he did not have or had had. Spent two years travelling, and in various institutions ; he went to his family physician in Chatham for a confirmation of the diagnosis ; he remained there for operation. He now weighs 190 lbs.

CASE No. 4.—Female, unmarried ; school teacher ; movable slightly downward ; commencing five years ago ; has had attacks of pain over the pylorus, and with nausea and vomiting increasing in frequency and severity, relieved by lying down, worse towards the end of the week, and always more frequent towards the end of the term. Saturday and Sunday spent lying down, gradual loss of flesh and strength. Anchoring down with three stitches through kidney and capsule ; relief for three months ; kidney again movable ; second operation one year ago, six months after first, by division of capsule. It has remained in place ever since, with almost complete relief of symptoms.

CASE No. 5.—Female, married, aged 35 ; slightly movable downwards ; ten children, normal labors ; weighed 150 lbs. when married, 115 lbs. now. Four years ago felt a sense of fulness of upper part of the abdomen, eructation of gas in spite of diet and treatment. This has increased ; always worse if she works ; better the more she stays in bed. The dilated stomach extends below the umbilicus. She eructates gas for hours continuously, and can be heard all over the hospital ; kidney anchored ; no more gas while she remained in bed. The recovery in this case was not perfect, as over-exertion still brings on a slight attack.

CASE No. 6.—Male, aged 35 ; tilting inwards of upper end. Machinist, repairs threshing engines, works and lifts weights in constrained position. He has only done a few months' work in the last three years. Has had severe attacks of pain in region of kidney, lasting several days, followed by great prostration, in which

he did not recover in the interval. I thought he had a stone in the kidney ; no mobility detected. Sent him to the hospital for observation. Had the urine saved for twenty-four hours. Was surprised to find that it contained a large portion of blood. Some separate samples, after severe pain, were almost pure blood. In view of the great variety of opinions I advised an exploratory incision. The usual opening of the lumbar region was made. No stone could be felt. The kidney would not move down, but the upper end tilted inwards nearly to a right angle. The capsule was incised at the upper end, and well fastened to the muscles. I did not feel that I had discovered sufficient to account for the symptoms. The fee was contingent upon results, a year to elapse, and he to be the judge. He only missed one day from work during that year, paid his fee like a man, and, what is better, added to my respect for movable kidney and its different mechanism.

First, of the mechanism, we may have prolapse, rotation, or tilting. The degree of mobility bears no relation to the severity of the symptoms. A prolapse as low as the crest of the ilium may exist without symptoms, or even the knowledge of the patient. A slight tilting inward of the upper end is the cause of the most excruciating pain and severe hemorrhage. The length and attachment of the vessels control the degree of prolapse. The rigidity of the abdominal wall influences the symptoms by pressing the movable organs against adjacent organs, interfering with their functions or with their supply from the sympathetic. The lax abdomen after pregnancy is a causative factor. Thin subjects that have lost flesh : those who have much standing on their feet. Recognizing the different kinds of mobility, we can better account for the varied character of the symptoms met with.

Symptoms.—A series of cases similar to No. 1 would lead one to think with the older writers, that while such a condition existed it did not cause any symptoms. The pain symptoms are referred in the main to the kidney region directly, and the line of the ureter. Their character varies from an acute onset to a dull aching, frequently referred to the lumbar region, depending on the vessel impinged on, and the degree to which its calibre is occluded. In the cases where reflex neuroses complicate the pain, it is, of course, of much extra value as a symptom. Gastric symptoms are usually pronounced in those cases of moderate mobility downward, the main features of which are dilatation with its concomitant impairment of digestion, loss of flesh ; depression of spirits, amounting to melancholia. In fact, there is no one nor combination of symptoms that go to make up that complex condition we have named neurasthenia, that may not have for its cause movable kidney. One of the principal points that I want to impress is, in

your search for the causes of obscure neurotic disturbance, not to overlook this condition. We may have irritation of colon causing mucous diarrhoea. Hemorrhage—Case No. 6 shows how severe this may be; it is the only one I have ever met, others have been reported. Is usually accompanied by a dull pain that is quite severe.

Diagnosis.—The principal list of conditions that may be mistaken for movable kidney are: colic, hepatic and nephritic; pelvic tumors with long pedicles; enlarged gall bladder; enlargement of any organ of the upper abdomen, particularly of the right side; movable spleen. Those cases with acute attacks of pain, with nausea and elevation of temperature, and rapid pulse, may resemble an acute appendicitis.

The recognition of all abnormalities of the abdominal cavity—in cases that admit of doubt—becomes largely a question of educated sense of touch. This is particularly so in the condition under consideration. There is something characteristic about the sensation that conjoined manipulation gives, that is worth pages of differential diagnosis—the way it moves between the finger tips more readily upward than down. Deep pressure well under the ribs, front and behind, in most cases of normal kidney, the lower end can be felt. In movable kidney it slips out of touch only to be brought in sight again by muscular effort or change of position.

The method used in detecting this trouble is having the patient standing or kneeling forward, the arms resting on the bed, abdominal muscles relaxed. Direct the patient to cough or strain; make deep pressure well up under the lower border of the ribs, before and behind, making the finger tips meet as near as possible, holding them there until the patient lies down, gradually work the hands down in a straight line towards the pelvis. The kidney will suddenly slip up between the fingers and out of touch. With a considerable degree of mobility, and a thin patient, nothing more is required. Where the mobility is slight, and the abdominal wall thick, anesthesia or the exploratory incision will be necessary for a diagnosis.

Movable kidney may be mistaken for appendicitis. The increasing tendency to call all cases with pain in the right side of the abdomen appendicitis, makes it necessary to be on one's guard. The principal points of difference: The pain of appendicitis is at first usually referred to the umbilical region, and gradually localizes itself between that point and the crest of the ilium, and increases in severity. The pain in movable kidney is more sudden in its onset, more diffuse referred to the epigastric region, often relieved by position, leaves suddenly. Tenderness and muscle rigidity in appendicitis is confined to a smaller area, more pronounced in the right iliac fossa. In movable kidney, tenderness and rigidity cover a larger surface, more marked in the kidney region. Pulse

and temperature are higher in appendicitis, and show a gradual increase, especially the pulse rate.

Physical examination in movable kidney leads to almost certain discovery. The possibility of palpating a diseased appendix should not be lost sight of.

Enlarged gall bladder usually is preceded by some hepatic symptoms; while it is true that a gall bladder may be so enlarged and mobile as to resemble a movable kidney by moving up under the liver into the kidney region, when the pressure is removed without muscular effort or change of position, it returns to its former place. From enlargement, or new growth of neighboring organs, of which the principal are neoplasms of the pyloric end of the stomach, pancreas and abscess of the liver, or new growths of the mesentery, the main reliance is to be placed on the sense of touch; bearing in mind the group of symptoms that each of these conditions produce.

Treatment.—Treatment may be palliative or radical. For the wealthy, absolute rest in recumbent position for months, with forced feeding, has been of use in a small portion of cases. Mechanical supports are only mentioned to be condemned. I have tried them, faithfully utilizing a considerable amount of mechanical ingenuity. My conclusion is that it is absurd to attempt to fix a movable object upon a movable base. Operative treatment results in failure in a small proportion in all methods tried, excepting, of course, the last published method that has not been in use long enough to be tested. The methods of anchoring the kidney are as numerous as they are ingenious. Their success in a great measure depends on adhesive inflammation that results from the operation. The kidney substance will not hold a suture long enough to be of any service. It is doubtful if a few stitches through the capsule will do much more.

The method that has given me the best results has been a double triangular incision of the capsule proper, the base of the triangles being horizontal across the middle of the posterior border of the kidney, making two flaps, the kidney surface of which is attached by several sutures to the edge of the muscle of the opposite side. The whole wound closed with buried sutures. This method best overcomes rotation and tilting. I confess that there may be danger of kidney necrosis from stripping the capsule so freely; it has never occurred to me. Seen's method, now on trial, and from which good results are published, consists in removing through the usual lumbar incision a portion of the fatty capsule, scarifying the capsule proper, passing a strip of gauze around the upper and lower end of the kidney, with this pulling it well up in wound and packing gauze around the kidney and filling the wound between the strips and fastening the strips firmly over the packing

removing the strip and packing, and at the end of twelve days dressing the wound by the open method until it fills up, usually in four or five weeks. The success of this method goes to prove that the stitches are not essential to success, and that inflammatory adhesion is the principal factor in securing a good result.

SURGERY AMONG THE INSANE—ITS DIFFICULTIES, ITS ADVANTAGES AND ITS RESULTS.

BY A. T. HOBBS, M.D., ASYLUM FOR INSANE, LONDON, ONT.

It is generally understood that for the successful treatment of physical diseases to which mankind is prone, the physician, in his endeavor to bring about favorable results, must have the patient's confidence and co-operation, and must also acquire a knowledge of the temperaments, idiosyncracies, and individualities of the person being treated. Without these acquirements on the part of the physician, and with the absence of trust on the part of the patient, it is difficult to produce satisfactory results.

In the treatment of bodily diseases among the insane, the asylum physician encounters difficulties that would seem, to the ordinary practitioner, almost insurmountable. He has to make himself thoroughly acquainted with the varied mental phases peculiar to each insane person, and must exhibit an inexhaustible supply of patience. He must be ever ready to depart from the beaten track of routine treatment, and, as circumstances arise, initiate for himself new methods of dealing with each mentally deranged individual.

In the application of surgery to the treatment of surgical diseases in the London Asylum we have encountered all kinds of difficulties, and experience has taught us how to successfully overcome the various obstacles that arise from time to time.

The difficulties may be detailed as follows :

1. *Difficulty of Diagnosis.*—Very little reliance can be placed upon subjective symptoms as portrayed by the insane. In many pain is not indicated as it would be in a sane person. The sufferings induced by physical ailments in the insane may be designated by them as an electric current working upon their bodies, detrimental to their well being ; or to the action of some deadly poison introduced into their system by someone inside or outside of the asylum precincts ; or to mesmerism, or to malevolence on the part

of an enemy, etc. Others may have serious diseases present, but sensation is so dull that no complaint that would indicate physical suffering is made at all. The description of their troubles, when given, is mainly erroneous and usually misleading. Actual examination is the only reliable method to ascertain the existence of physical derangements in the insane.

2. *The Difficulties of Examination.*—The physical examination of insane patients presents many hindrances. They will not allow themselves to be touched by the physician. Their suspicions or fears of a simple action like a physical examination of the chest will cause them to struggle so that any effort to obtain satisfactory information concerning the heart, lungs, or abdominal contents is rendered futile. This being very often the case in such simple procedures, it will be understood that to obtain a gynecological examination of an insane female is practically impossible without the aid of anesthesia.

3. *The Difficulty of Anesthesia.*—In the early days of our surgical work, chloroform was the selected anesthetic. This, however, had to be abandoned, as resuscitation had to be resorted to in several instances to prevent collapse, as the chloroform narcosis became too profound and heart action alarmingly weak. I believe that the depression and depreciation of the whole nervous system, coincident with the mental derangement, makes chloroform a dangerous anesthetic to be generally used upon the insane. The application of ether has given satisfaction, and more so since the introduction of preliminary narcosis with nitrous oxide gas. The latter anesthetic being less irritating, prevents the struggling of the patient usually induced in the initial stage of ether inhalation.

4. *The Difficulties of Preparation for Operation.*—The preparatory treatment of a surgical case is often made difficult by the obstinacy and resistance of the patient. Simple bathing of a patient will sometimes take the united attention of three or more nurses. The same thing occurs when an enema is given, or the urine drawn. Often the entire preparation, other than the bathing and the giving of a purgative enema, can only be carried out when the patient is under an anesthetic.

5. *The Difficulty of After-Treatment.*—Nursing insane patients, especially after a severe surgical procedure, is often attended with difficulties that are unknown to surgeons whose *clientèle* are possessed of mental soundness.

Some patients, after the effects of the anesthetic have passed off, will demand food and drink and will not be pacified until their desires are partially, at least, appeased. Others will get out of bed if the nurse's attention should for one moment be directed to another part of the room, while some, unless carefully watched, will pass their hands under the dressing and finger the wound, or

even go as far as to tear off the dressings and pull on the sutures. If excited, they will chatter incessantly, and if irritable they may become very disturbed and noisy. Dieting these patients, owing to their insane desires and cravings, is often troublesome. If not satisfied with the food prepared for them they will vent their displeasure by breaking the dishes, storming at the nurses, and making themselves generally disagreeable. The thermometer is almost invariably used in the axilla, and even this simple procedure is repugnant to many of them, and a broken thermometer at times registers their dislike to such proceedings. This little instrument is sometimes regarded with deep suspicion as having the power to produce all kinds of electric shocks and evil influences upon their persons. I have known a patient on whom the thermometer was used, per mouth, produce in a few days a semi-circular ulcer extending under the edge of the tongue, induced by biting and chafing it with the teeth, and then blamed the thermometer as being the cause, and denounced the nurse as having ulterior designs on her. Passive resistance has often to be overcome before a catheter can be passed or a patient sponged. It is not unusual for a patient to wet sheets and soil dressings, necessitating frequent changing. I have known patients get exceedingly angry if not allowed to get out of bed soon after a severe abdominal operation. No amount of persuasion will induce others to take medicine. In the course of subsequent treatment it requires eternal vigilance, endless patience, combined with the unlimited tact of the nurses who have charge of these special cases. I may say that without careful, conscientious nurses, trained especially for the management of these cases, the work would be a dismal failure.

As an offset to these difficulties of surgery among asylum patients there are some advantages in the fact that they are insane, viz :

1. *Advantages.*—Little or no shock, as a rule, succeeds even a prolonged and dangerous operation, and post-operative pain is rarely complained of. No doubt the changed mental condition and the insensitiveness of the nervous system accounts for this. The majority of these cases make a good and rapid convalescence.

2. Another advantage is that, except in occasional cases, the regimen laid out for them is strictly adhered to, in spite of all whims and fancies.

3. Again, ether narcosis is very quickly recovered from in the insane. A gentle slapping of the face will quickly arouse the most profoundly anesthetized patient and very little nausea or vomiting occurs subsequent to the use of ether. I may say in this connection that after an experience of about six hundred etherizations I have never seen an insane patient made mentally worse or in any way mentally improved as a direct result of the anesthesia.

Results.—The results of operative surgery, especially gynecological, among the insane are two-fold :

Primarily—The restoration of physical health.

Secondly—The improvement and recovery of the mental condition.

I desire at this point to emphasize most strongly the fact that we do not operate for insanity or for the relief of the mental condition. Some physicians persist in ignoring this and endeavor to fasten on us the charge that we claim to cure mental diseases by direct operation. Let me once more reiterate our text: "that these operations are done primarily and specifically for the removal of physical disease and the promotion of bodily comfort." Can anything be more clear than this? As to any succeeding mental improvement and recovery, this is always secondary to the restoration to bodily health from the removal of disease, especially pelvic. Let me ask, How can good health be established if complicating pathological disease is present in the patient's system without removing such lesion? And how are new growths, lacerated cervixes, torn perineci, prolapsed uteri, etc., pertaining to gynecological diseases, be eradicated without the aid of surgical measures? If these conditions are present and are removed, and as a result good bodily health is restored and subsequent mental improvement succeeds, especially in cases of long-standing insanity, is it not fair to deduce that some connection exists between the bodily ailments and the abnormal mental condition?

It is conceded that the physical basis of mental disease is the great nerve centre. It is also admitted by all authorities on mental diseases that disturbances of this organ are often a sequence of derangement of other organs of the body.

Also, I think it will be admitted that the organs forming the series engaged in the reproduction of the species are, next to the brain, the most complex in their mechanism and most profoundly physiological in their function.

Furthermore, I am free to admit that derangements of the brain will sometimes affect the functions of the sexual system; but on the other hand I emphatically affirm, from my experience of 168 cases, that disorders of the sexual organs will often produce disturbances of the brain, ranging from mild mental unrest to the most severe attacks of insanity.

Whether this is brought about by reflex action, changed internal secretion, or of whatever theory which may be advanced as a solution of the phenomenon, the truth forces itself home to those having been actually engaged in the work, that there does exist a certain interdependence between the organs of reason and those of generation.

At the London Asylum we have, since the commencement of

the year 1895, endeavored to give our patients, when found necessary, the benefit of proper surgical treatment. Since that time we have examined gynecologically 211 patients, and found disease in 179; 168 of these received treatment indicated for the diseases presented at time of examination.

The diseases relieved were: subinvolution or endometritis, or both, 127 times; cystic, lacerated or hypertrophied cervixes, 59 times; retroverted or displaced uteri, 52 times; prolapsed uteri, 5 times; lacerated perineæ, 34 times; diseases of the ovaries and tubes, 32 times; fibroid tumors, 14 times; malignant tumors, twice; tubercular peritonitis, twice, and fistulæ twice. On these it was necessary to perform 127 curettages, 51 trachylorrhaphies or amputations of the cervix uteri, 36 Alexanders, 12 ventro-fixations or suspensions, 26 perineorrhaphies, 21 ovariectomies, 14 abdominal and 8 vaginal hysterectomies, 2 myomectomies and 2 laparotomies for tubercular peritonitis.

The physical outcome of operative treatment was uniformly good. More than this, the changes from abnormal to a normal mental condition, succeeding the removal of these sources of irritation and of bodily decay, occurred so frequently and so markedly that to term such phenomena mere coincident or accident in each case is absurd.

In summing up the mental results I have divided the 168 patients into two groups, and have further subdivided each group into divisions, the designation of each patient being indicated by the main diseases present in her case.

1. The inflammatory group, consisting of 98 cases, are as follows:

DISEASES.	No. CASES.	RATIO MENTAL RECOVERY.	RATIO MENTAL IMPROVEMENT.
Ovarian and Tubal...	22	15 or 68 per cent.	3 or 14 per cent.
Uterine body.....	38	19 or 53 " "	6 or 17 " "
" " and cervix	36	15 or 39½ " "	8 or 21 " "
Tubercular peritonitis..	2	1 or 50 " "	1 or 50 " "

The average ratio of recoveries in the group was 51 per cent. and the improved ratio was 17 per cent.

2. The non-inflammatory group, consisting of seventy cases, are as follows:

DISEASES OR LESION.	No. CASES.	RATIO MENTAL RECOVERY.	RATIO MENTAL IMPROVEMENT.
Uterine tumors—malignant and benign.....	24	7 or 29 per cent.	9 or 37 per cent.
Displacements of uterus	40	13 or 32½ " "	13 or 32½ " "
Tears of perineum, fistula. etc.....	6	0 or 0 " "	2 or 33 " "

This class as a whole gave a recovery rate of 28½ per cent. as well as 31 per cent. who improved mentally.

The number of deaths succeeding operation in the 168 cases was 4, or a little over 2 per cent.

This dividing of the whole number into groups points out the relative effect that the removal of the different lesions subsequently had upon the mental health. It will be noted that the best results followed the removal of diseases that were the result of previous inflammatory reaction. Needless to impress the importance of the treatment of such gynecic disease whenever found in a deranged female.

It is interesting to note that insane patients, being mentally deranged for two years, are considered chronic, and that their prospects of mental recovery are somewhat remote. The fact, then, that fifty-one of the one hundred and twelve patients who recovered or improved mentally had been insane for two years is exceptional and is additional evidence as to the immense value of surgical gynecology when applied to removal or abatement of pelvic disease when found to exist among the insane.

Notwithstanding all this, there are those who doubt the truth of these statements. There are those who denounce these methods as savoring of mutilation, and characterize the introduction of gynecological surgery among the insane patients as a presumptuous innovation which claims to cure mental diseases by way of the pelvic cavity. Such criticisms may sound extremely virtuous and wear the air of righteous censorship; but coming from those whose views are theoretical and not practical should carry the weight of theory, but not that of fact.

In conclusion, let me draw the attention of those critics to a fact which they must have overlooked: that there are hundreds of physicians in Canada to-day, who, during long years of practice, have had women consult them for the relief of some pelvic discomfort or distress; and at the same time that they have noticed in these women pronounced abnormal mental symptoms, indicating that if they were not already insane that they were at least on the borderland of insanity.

Furthermore, that after having removed the pelvic lesion in these women that they have witnessed an improvement or disappearance of the coincident mental derangement. Let me then say that no amount of criticism or theoretical argument can overcome the conviction in the minds of these physicians that there must have been some connection between the local disease and the complicating abnormal mental condition.

WHY THE UNDEFENDING PELVIS.

BY ERNEST HALL, TORONTO.

During the discussion of Dr. Hobbs' paper upon "Surgical Treatment of the Insane" at the Dominion medical meeting a very pertinent question was asked by a prominent gynecologist. This question, or rather a series of questions, may be briefly stated as: 1. Why attack the unoffending pelvis in these cases of insanity? 2. Is there not a probability of some other abdominal organ being diseased, and such diseases being the cause of the mental trouble? 3. Do not our asylum reports give the proportion of male and female patients as about equal; if so, how can it be that disease of the female genital organs is responsible for so much insanity? These questions cover the greater part of the controversial field in regard to the systematic gynecological examination and treatment of the insane, and deserve consideration.

Question 1.—"The Unoffending Pelvis." With the exception of a digital examination, the "unoffending pelvis" is left religiously alone. It is only in the presence of actual disease that the parts are molested. It is accorded the same consideration and treatment that is given a similar condition in the sane. It is not made the scape-goat of general paresis, encephalitis or cerebral atheroma; but is expected to answer for its own short-comings only. The disturbance of normal organs is obso'ete. It is no part of the treatment advocated. Surely this point has been sufficiently emphasized.

Question 2.—Unhesitatingly we answer, yes. Dr. Work, of Pueblo, Col., reports four cases of insanity, one due to indigestion, one to rheumatism, one to chronic cystitis, and a fourth due to hepatic diseases, all cured by treatment of the respective primary diseases. Dr. Ferguson, of this city, told me of a case of intermittent insanity concurrent with the development of a recurrent gastric ulcer. Dr. Cotton has a case at present under his care, in which well-marked mental abnormality was relieved by the fixation of a floating kidney. It might be well in this connection to call attention to the mental conditions (delirium, etc.), the result of toxemia from the inability of the various organs to perform their functions, and from the absorption of various ptomaines. The multiplication of evidence is unnecessary. The mental functions can be disturbed by intra-abdominal disease other than that of the sexual organs.

Question 3.—The asylum reports give the proportion of male and female inmates about equal; but one peculiarity is presented: that the married male stands to the unmarried in the relation of one to two, while in the female the married bear to the unmarried

the relation of two to one. This indicates that the single men and the married women may rejoice in their probability of becoming insane being double that of their married brothers and of their single sisters. It scarcely requires an expert to read between the lines and determine the import of such statistics. *Re* insanity in the male, what of masturbation and its results? The public reports give only a measure of these results. The reader, if he is desirous of following this subject, is referred to Acton's chapter on "Insanity from Masturbation." As to chronic disease of the testicles affecting the psychic prejudicially, any surgeon of experience can testify. Again, let us consider the effect that a constricted and adherent prepuce frequently exerts upon the male infant. This is also too well known to require further comment. The question of septic disease of the male organs and the ultimate effect upon the minute ramifications of the system, is yet in its infancy. When the treatment of these parts has advanced to the state of excellence which we claim in regard to the opposite sex, we may then speak with some degree of certainty in this matter. The fact is, the causes of mental abnormality in the male have not been investigated with that degree of thoroughness that is due the importance of the subject; but since the full causation is not determined we are not warranted in stating that the disease of the male organs is not a cause of insanity; but, on the contrary, the inferences from practical experience seem to lend force to the supposition that possibly disease of the male organs may be a factor of no little moment in the production of mental disturbance. As a general statement, abnormalities of all bodily organs are capable of deharmonizing the mental functions in direct proportion to their intimate connection with the great nervous centre. This connection may be through other means than nerve fibre, although the sympathetic here plays an important part, but the processes of circulation, nutrition, and secretion are not to be forgotten.

In conclusion, are not the sexual organs, over and above their nerve connection, in common to the other abdominal organs, supplied with an additional and unique connection with the psychic? And is it not reasonable to suppose that irritation of parts in such close relationship would be more apt to result in alteration of cerebral function than irritation of organs with less intimate connection with the great nervous centres. Also, are they not more exposed to disease than other abdominal organs? I refer to the traumas of maternity, the invasion of septic bacteria and various abuses. And, lastly, why in a series of some thirty operations performed on the insane by Dr. Hobbs for disease of parts other than the sexual organs no mental recoveries followed, while in the surgical treatment of diseased sexual organs the mental recoveries amounted to the modest sum of $38\frac{1}{2}$ per cent. of the cases operated upon.

Clinical Reports

Contributions are solicited for this department

A CASE OF PERITYPHLITIC ABSCESS.

By FRED PARKER, M.D., BRUCE MINES.

At noon, on August 3rd last, I was called to see a gentleman from Duluth, who had been suddenly seized, at his hotel, with severe abdominal pain and vomiting. There was a history of a similar attack ten years ago, from which he made an uneventful recovery, and has enjoyed good health ever since. Upon entering his room, judging from the appearance and history of the case, I at once became suspicious of appendicitis, but could find no tenderness whatever over the region or vicinity of appendix; there was, however, a great deal of tenderness in deep palpation in the right hypochondriac and epigastric regions. Pain was intense; pulse, 94; temperature, 102. History of constipation; bowels had not been moved for over two days; persistent vomiting.

I concluded that the case was one of acute fecal obstruction, although I could locate no fecal tumor. I emptied the large bowel at once by two or three copious injections of warm water, removing an immense quantity of hard scybala, which gave great relief to patient, rendering the administration of an opiate unnecessary, although previous to this he suffered greatly.

I then applied hot fomentations to abdomen, and administered mild aperients.

The patient was very comfortable during that afternoon, and slept mostly all night. Was also easy all following day (4th), although there was considerable soreness in palpation all over the right side of abdomen. Temperature was 99; pulse, 65 to 75; tongue slightly furred, but moist; no vomiting after giving injections.

During the night of the 5th he was again seized with a renewed attack of pain, which required $\frac{3}{4}$ grain morph. sulph. hypod. to relieve; but on morning of 6th his bowels moved freely two or three times again, passing an immense quantity of hard scybala; in fact, the quantity of fecal matter passed during the next two or three days is almost beyond comprehension. After his bowels became thus unloaded, he seemed to be getting along fairly well; suffered little or nothing; slept well; pulse, 75 to 85; temperature

normal to $99\frac{2}{3}$. Tenderness and thickening now situated more in the right inguinal and lumbar regions, but with a tendency to lessen daily.

The case seemed to progress satisfactorily until about August 9th, when I became suspicious of the formation of a perityphlitic abscess, although there had been no chill or increased temperature or pulse—nothing but a small, well-defined tumor, which gradually enlarged until the morning of August 11th. I operated, opening and draining a large abscess, which, by this time, was larger than an ordinary tea-cup. After the operation the temperature dropped to normal, and patient made a steady and uninterrupted recovery, so well, indeed, that he was able to leave for his home in Duluth on the 31st inst.

The peculiar features of this case were these :

1. In the beginning of the case there was absolutely no pain or tenderness where the thickening and abscess subsequently formed.
2. The enormous fecal accumulation in intestines with no inconvenience to patient until attack.
3. No chill ; no hectic fever ; no sweats ; little pain ; pulse, 70 to 85 ; temperature. $99\frac{2}{3}$ to normal during formation of abscess.

Reports of Societies

TORONTO CLINICAL SOCIETY.

The first meeting of the year, the fifty-fifth regular meeting of the above society, was held in the society's parlors, St. George's Hall, Elm Street, on Wednesday evening, the fourth day of October at 8.30 p.m.

In the unavoidable absence of the President, Dr. George A. Bingham, the Vice-President, Dr. W. H. B. Aikins, occupied the chair.

Fellows present: Geoffrey Boyd, W. H. B. Aikins, F. Le M. Grasett, J. A. Temple, G. S. Ryerson, Fred. Fenton, H. J. Hamilton, A. A. Small, Graham Chambers, G. W. Badgerow; E. E. King, J. O. Orr, A. A. Macdonald, Allen Baines, Adam Wright, A. J. Harrington, W. B. Thistle, Charles O'Reilly, H. B. Anderson, W. H. Pepler, K. McIlwraith, H. A. Bruce, G. Silverthorn and George Elliott.

Nomination for membership: Dr. D. J. Gibb Wishart, by Drs. Elliott and Pepler.

Dr. J. A. TEMPLE drew the attention of the society to the fact that this was the first meeting since the death of one of the Fellows, the late lamented Dr. J. E. Graham, and moved that the following committee be appointed to draft a letter of sympathy to the widow and family of the deceased member: Drs. Grasett, Ryerson, Baines, Macdonald, Temple and Bingham. Carried.

Dr. BOYD announced at the time of the death of Dr. Graham that, on instructions received from the president of the society, he had then written a letter of sympathy to the family.

THE USE OF PEPTONES IN TYPHOID FEVER.

Dr. FRED. FENTON read a paper with this title, and reported the results obtained with this plan of treatment in two cases. The first case was that of a man aged twenty-one years, a patient in the Toronto General Hospital in 1892. The patient had just passed through a severe attack when a relapse supervened. There were high temperature, low-muttering delirium and uncontrollable vomiting, which was a very marked feature of the case. The pulse was almost imperceptible, and the patient had a tendency to slip down into the bed. Swallowing became difficult or almost impossible, and it was then decided to feed the patient per rectum. Ten hard-boiled eggs (the whites alone) were finely minced and mixed

with milk, and peptonized, and this quantity was administered every twenty-four hours, about a pint being used every four hours. When the rectum became irritable, liquor opii sedativus was employed. The patient got no nourishment by the mouth for nine days, and during that time he put on flesh. The disease terminated in about three weeks, the patient even putting on flesh during the period of fever.

The second case was that of a boy of about eleven years. This was also a very severe case, and it was impossible to get him to take more than a few ounces of milk per day. He developed a troublesome hacking cough a few days after admission, and there was marked consolidation of the base of the right lung, with attacks of cyanosis. He developed pneumonia, which condition was also present in the first case. Nutrient enemata were ordered for him every four hours, the mixture being peptonized some hours before being given. After this there were no more attacks of cyanosis, and there was considerable improvement. Both the whites and the yolks of the eggs were used in preparing the mixture in the latter case. To digest the milk in the first case, pepsin and HCl were used; in the latter, pancreatin. The pepsin and HCl mass was better than the other, because in the boy the rectum became very irritable quickly, so that it had to be washed out in order to ensure the enema being retained.

Dr. W. B. THISTLE, in discussing the paper, stated that he has not had much experience with nutrient enemata in typhoid fever, because he has not had cases in which they could not be fed by the mouth. He favors the employment of the peptogenic milk powder in preparing the milk for ordinary feeding in typhoid cases. Here you get the peptonized milk, and you also get the excess of sugar, and he thinks this much better than the ordinary peptonized milk.

Drs. Baines, O'Reilly and Chambers further discussed the cases.

MICROSCOPICAL SPECIMENS.

- (a) Microsporion Andonini.
- (b) Trichophyton Migalo-Sporon.

Dr. GRAHAM CHAMBERS demonstrated these specimens of the small spore and the large spore ringworm fungus under the microscope. The microsporion adonini was the cause of 70 or 80 per cent. of ringworm in the scalp of children, and they never affect the surface of the body. The microsporion was not a trichophyton at all. Of the trichophyton there were two kinds, the small spore and the large spore. Some grew outside the hair, and some inside. The speaker described the condition of the scalp and hairs in these cases, and said that under the microscope the large spores will be

found in chains jointed, while the small spores are never in chains. In treating cases due to the large spores, there is hope of improvement in two or three months; but in the small spore variety a cure will probably take a couple of years.

FRIEDREICH'S ATAXIA.

Dr. W. B. THISTLE reported this case, and read notes on the disease. He said he was unable to present the patient, because he lived out of town. The patient was a boy, aged ten years, who was brought to the hospital on account of an attack of difficulty of walking. This was noticed from the time he was four years of age, and it progressively got worse. The father was healthy, and never had syphilis or private disease. His mother died of phthisis, and her family were free from any nervous diseases. No history of the grandparents could be obtained. The father, a German, came to this country while young, and knows nothing about grandparents. The patient has two aunts, sisters of the father, and they were afflicted somewhat the same way as this boy. There is also in the family an elder brother who was afflicted in the same way. In the elder brother, the disease came on at the age of seven years, and now at fourteen years of age is quite unable to walk, and has marked ataxia. As regards the previous history of the patient, there was no difficulty at birth, and the boy was perfectly well until about four years of age. Then it was noticed he was somewhat uncertain in his gait, and frequently stumbled while walking. The condition has increased gradually, but not very rapidly. He has that peculiar lack of facial expression, and holds his head on one side. One side is markedly different from the other; and, at first glance, he looked somewhat like a case of birth palsy. There was no nystagmus in this case, and no abnormal condition noted in the eyes. The doctor sought closely for nystagmus, and did not obtain that symptom; the pupils were equal and reacted normally to light. With the eyes closed, the patient swayed, and would have fallen. Speech slow and difficult, so that he stumbled over words, and halted or hesitated. Sight was good; hearing quite normal. Locomotor system had moderately marked ataxia, worse on excitement. Incoordination was also marked in both hands, but not to the same degree as in the feet and legs. The inco-ordination was shown when he was asked to button his coat. There was no paralysis, and no indication of muscular weakness. Sensory system: there was no abnormality with reference to sensation. Tactile sensation perfect for testing heat and cold, and testing painful impressions, but located impressions gradually. Reflexes: no jerks; are gone absolutely on both sides; plantar also absent; cremasteric quite normal. Nutrition: skin was

healthy looking, no atrophy, and no evidence of trophic disturbance. The rectal and bladder functions were quite normal. With reference to the feet, he had the characteristic clubbing of both feet, that is, shortening of the plantar arch and condition of hammer toe, particularly noticed in the big toe. The arch of the foot was lifted very much, and the ball of the great toe was approximated to the heel; and the great toe itself was flexed and stood up almost at a right angle from the dorsum of the foot. In the family history, this condition of incoordination coming on in this way in childhood, gradually getting worse, made it quite clear that it was ataxia of spinal type as distinct from the cerebellar type. In the cerebellar type, he would likely have had some palsy, particularly of the tongue and other muscles. The lesion affects the posterior columns, crossed pyramidal tracts, direct cerebellar tract, and anterior lateral tract, with the probability that it is more extensive in the posterior columns. These cases have been studied fairly well, and abundant examinations of cords made, and the pathology seems to be pretty well worked out. It is generally considered to be of the nature of a developmental defect, that is, hereditary and congenital; and the occurrence of an infectious disease precipitates the occurrence of the symptoms and intensifies them. There is no reason, however, in this case, to attribute anything to infectious disease. Unfortunately, there was nothing that could be done to remove the condition, and the prognosis is unfortunately rather bad, that is, in reference to the recovery. These patients live a long time—the longest on record being about forty-six years after the appearance of the symptoms; but sometimes the condition becomes extreme in a very short time, and the patient may last only two years. This is the shortest period; very likely to last between fifteen and twenty years. The prognosis as to length of life is not good. Coming on at four years of age, it would not be likely that he would live much after twenty. Then there is the off-chance that the condition might become stationary; this has been noticed in these cases. They may become stationary for long periods, and then they may take on further development. Intelligence does not suffer much, but in the later stage the intellectual functions do become somewhat impaired; but in this boy's case he was quite bright, perhaps more than ordinarily so. There are several conditions which might easily be mistaken for Friedreich's ataxia, if you do not have a very clear family history; but in this case, with a brother and two aunts afflicted, there was no difficulty in the diagnosis. But if the case had come under observation during the advanced period it would be rather difficult to distinguish it from ataxia paraplegia, and this affects about the same regions as ataxic paraplegia. However, in ataxic paraplegia you are very likely to have some involvement of the sphincters and

involvement of the sensory functions. There is now a case in ward five, at the Toronto General Hospital, who has difficulty in speech. There are no eye symptoms; but marked ataxia and increase of the reflexes instead of loss, as in this case. Cerebellar tumor might look like the cerebellar type of Friedreich's disease, but in addition you would get the constant headache and vomiting; and the duration of the condition is very much shorter than cerebellar tumor. Primary lateral sclerosis occurs also as a congenital defect. That condition occurs also in early life, and would have a very close resemblance to Friedreich's disease; however, if you had the nystagmus present, it would be strongly in favor of Friedreich's disease. In primary lateral sclerosis, there is a more spastic condition, without so much incoordination. It is easily distinguished from the birth palsy, because you have marked cerebellar symptoms there.

Dr. H. J. HAMILTON asked Dr. Thistle whether there was any tendency whatever to swaying movements of the head or any scoliosis present, as Dr. Thistle had spoken of the tendency of the head to lie upon one shoulder.

Dr. THISTLE.—There was no rotatory movement. You do get that in the cerebellar form, but this was a typical spinal type. There was no scoliosis whatever.

FRACTURE OF FEMUR.

Dr. A. J. HARRINGTON exhibited a fractured femur from an old lady of seventy-eight years, as the result of a slight injury. In a scuffle she was shoved over and struck her thigh on a hat-rack, and then fell on the floor. It showed the great friability that these bones possess at this time of life, and it is really wonderful with that extreme condition, how she could walk about with the bone in such a weak state. Delirium had set in on the second day, and she died thirteen days afterwards.

Refreshments were served. The Society then adjourned.

GEORGE ELLIOTT, *Recording Secretary.*

Special Selections

INFANT FEEDING AND INFANTILE DIARRHEA.*

BY J. T. FOTHERINGHAM, M.D., TORONTO.

Mr. President and Gentlemen of the Canadian Medical Association:

My first duty, as it is a pleasure, is to express my high appreciation of the compliment paid me by yourself, Sir, and your committee, in inviting me to read the Address in Medicine before our National Association, an association which exercises the hegemony among all the medical societies of the country, as the country does among the colonies of the Empire. Permit me to suggest, in passing, that in my opinion our association has borne no insignificant part, and will bear yet a much greater part, in the forging more closely of the chains that bind into one the once dis-united portions of the Canadian unit in Britain's congeries of nations. For you notice that I refer to it as a National Association. I think, too, that I may safely prophesy, though neither a prophet nor the son of a prophet, that we shall from this date gain greatly as an association by the rising tide of national sentiment, a tide which has risen, I rejoice to say, only more slowly than that greater, more beneficent tide, like the tide of our Mother Land's own universal ocean, the tide of Imperial sentiment and of quickened love for the Greater Britain, the wide world over, of which we as a nation form only a part—indeed, I need only point to the unprecedented success of the present meeting as a proof of the upgrowth of the sentiment of Canadian solidarity, for without that sentiment even the skilful and energetic management of the committees of the association would have been much less fruitful of results—but I must ask your pardon for a digression so far removed from the subject of my paper, and come back to the sober fact that I have undertaken a task which I feel is too much for, me. I can pretend to no very special knowledge of the subject beyond that which careful reading and conscientious clinical observation can produce, and cast myself upon your indulgence

* Prepared for the Canadian Medical Association, Toronto, meeting, 1899.

with the request that the discussion to follow may be free, and with the hope it may be helpful both to myself and to us all. The selection of a subject was difficult, and I was influenced in my choice mainly by the fact that it is at this time the one specially prominent in practice. I can assure you that I feel my own limitations, and that, as may seem right and proper in the discussion of this particular subject, I have the mind "even of a weaned child."

The importance of the subject need scarcely be insisted upon before an audience like this, to whom the preventability of the "Slaughter of the Innocents," caused by diarrheal disorders, is coming to be known. I have pleasure in presenting to you the following tables, kindly prepared for me by Dr. D. McGillivray from statistics placed at my disposal by Dr. P. H. Bryce, of the Provincial Board of Health, to both of whom my thanks are due. These tables have reference to the City of Toronto and the Province of Ontario, and constitute a powerful argument for an educational campaign by this association against public ignorance in the matter of infant feeding. Yet even among ourselves it may be well to look for the beam in our own eyes. I was struck recently by the forceful character of some of the remarks of Mr. Marmaduke Shield in a lecture given in St. George's Hospital, in London, "On the Management of Some Cases of so-called Simple Fracture." After expressing surprise and regret at the little importance attached by students, and "especially," he says, "junior practitioners" to the study of these common accidents, he goes on, with, I fear we must admit, great truth, to single out this very disorder, as follows :

"It is the same in medicine ; obscure maladies, which usually terminate in pathological investigation and speculative methods of treatment, fascinate the modern student more than the treatment of pneumonia and infantile diarrhea. All must fly before they can swim. I regret to say that one cannot excuse teachers and examiners from complicity in fostering this hollow and foolish tendency in modern clinical education. It is most detrimental to after success in practice and reputation."

After undertaking the preparation of a tabulated statement of the incidence of infantile diarrhea, I found that only for the past two years has a satisfactory method been in vogue in the Registrar-General's Office. The Bertillon classification of diseases now adopted is very satisfactory ; but previous to 1897 cholera infantum, diarrhea acuta and dysentery acuta were so mixed up that absolutely accurate statistics cannot be compiled for my purpose. The accompanying tables will clearly show, however, (1) The incidence of the disease by months, July and August having an especially bad pre-eminence ; (2) The enormous preponderance of

deaths from infantile diarrhœa before the end of the first year, the remarkable falling off in the second year, and the still more marked "zone of safety" upon which the child enters with the third year, so far as diarrhœas are concerned.

Taking the figures for 1897 for Toronto, as a basis, it will be seen that 31.23 per cent. of all deaths in Toronto occur under one year, and that 5.14 per cent. of all deaths are due to diarrhœa under one year. Of the total deaths under one year (977) diarrhœa causes 161, or 16.48 per cent. These figures compare distinctly favorably as regards infant mortality with those given for the larger American continental centres.

Further calculations show that there are more than three times as many deaths from all causes in the first year than in the next four years of life put together.

As regards the season of greatest incidence the figures show with the greatest monotony the decided beginning of the epidemic in June, its worse coincidence in July, though during August it remains almost as severe, a drop to about one-half in September, and its disappearance in October.

TABLE I.—TORONTO.

Showing infant mortality under five years, of diarrhœa. (For 1897 and 1898, figures are for three years and under.) It shows also incidence by months, and incidence by years of age.

	1898.	1897.	1896.	1895.	18 4.	Totals.
January .....	..	..	..	1	..	1
February	3	1	2	1	1	8
March	2	..	1	..	1	4
April	2	2	1	1	2	8
May	1	1	4	5	..	11
June	3	13	16	10	3	45
July	53	22	65	77	61	278
August	48	64	48	53	60	273
September	38	46	17	34	21	156
October	25	14	2	12	8	61
November	4	5	1	1	2	13
December	4	5	2	1	3	15
Totals	183	172	159	196	162	
1st year	173	161	150	178	136	
2nd year	9	10	..	..	..
3rd year	1	1	9	18	26	

TABLE II.—SIMILAR TABLE FOR PROVINCE OF ONTARIO, 1897.

Total deaths, 25,307; total deaths from cholera infantum and infant diarrhœa, 1,082; that is, about one in every twenty-five deaths in the province was due to this disease.

January.....	13	July.....	166
February.....	18	August.....	338
March.....	14	September.....	203
April.....	13	October.....	103
May.....	12	November.....	25
June.....	52	December.....	18

1st year.....	925
2nd year.....	121
3rd year.....	11
4th year.....	25
Total.....	1,082

TABLE III.—TORONTO.

	1898.	1897.
Total deaths from all causes.....	2,871	3,122
Under one year from all causes.....	875	977
Under two years from all causes.....	85	91
Under three years from all causes.....	41	62
Under one year from diarrhœa.....	173	161
Under two years from diarrhœa.....	9	10
Under three years from diarrhœa.....	1	1

Investigation from these figures shows that 36.2 per cent. of the total mortality occurred under three years in 1897, and 34.86 in 1898; also that 31.23 per cent. of the total mortality occurred under one year in 1897, and 30.47 per cent. in 1898. We find, too, that 5.15 per cent. of all deaths occurred from diarrhœa under one year of age in 1897, and 6.02 per cent. in 1898; and that of all deaths under one year in 1897, 16.48 per cent. were due to diarrhœa, and no less than 19.77 per cent. (one in five practically) in 1898.

TABLE IV.—TORONTO.

	1898.	1897.	1896.	1895.	1894.
1st year.....	875	977	935	979	933
2nd to 5th year.....	192	271	243	303	268

TABLE V.—TORONTO.

Number of deaths from diarrhea per 1,000 infant deaths occurring under five years and under one year.

	1898.	1897.	1896.	1895.	1894.
Under 5 years	171.5	137.8	135.0	152.9	134.8
Under 1 year	197.7	164.7	160.4	171.6	145.7

Seibert's interesting investigations show that the temperature curve corresponds identically with the mortality curve of diarrhea. He says that an average minimum temperature of about 60° F. is needed to start the epidemic, and that it must continue about a week before any marked increase in the number of cases is noted. Holt suggests that the very sudden rise in July is due to the debilitating influence upon susceptible infants of the heat of June—not to any special malignity of the "Dog Days" of July, for the average temperature of July is only 4° F. or 5° F. higher than that of June and August. The figures for Toronto show much greater persistence during August than in New York, where the mortality *over* three years is just about half as great as in July, the total deaths from diarrhea in Toronto for five years, 1894-98 inclusive, being 278 for July, 273 for August, 156 for September, and only 4+ for June and 61 for October.

TABLE VI.—SHOWING TEMPERATURE DETAILS FOR YEARS 1894-98 (INCLUSIVE).

	JUNE.			JULY.			AUGUST.			SEPTEMBER.		
	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.	Average Temp. for month.	Difference from average for 58 years.	Highest daily Temp. during month.
1894	66.45	+4.24	90.7	69.10	+1.48	89.19	65.29	-0.00	85.1	62.25	+3.72	84.1
1895	67.90	+5.61	93.1	66.23	-1.41	90.0	65.09	-1.17	84.0	60.63	+2.05	93.1
1896	64.75	+2.36	86.3	68.72	+1.10	91.3	67.49	+1.28	89.9	57.41	-1.32	86.3
1897	61.3	-1.12	84.4	72.11	+4.40	93.3	64.75	-1.54	82.5	60.84	+2.23	93.2
1898	65.42	+3.01	90.5	70.5	+2.79	95.5	69.72	+3.48	96.0	62.8	+4.15	97.1

You will have noticed that in 1897 the mortality for July was only 22, while in the other four years of the series it was 53, 65, 77

and 61. So remarkable a difference called for explanation, which lies ready to hand in the accompanying Table No. VI., showing, among other particulars, the average temperature for June, July, August and September for the five years to which the mortality tables apply. The exceedingly interesting fact is thus elicited that the July for which the mortality was so low, was preceded by a June in which the average temperature was only 61.3° F., nearly 4° F. lower than the lowest June in the series, and nearly 7° F. lower than the highest June of the series. This July of low diarrheal mortality, however, was itself much the hottest July of the series, 4.49 F. hotter than the average July of fifty-eight years. We find, consequently that the August following had a mortality of 64, much the highest August in the series, and was followed by a September of exceptionally high mortality, 46. In other words, the epidemic of 1897 was delayed a whole month by the low temperature of June. The months of greatest mortality were August and September instead of July and August, and the net result was the same as in an average year.

Seibert's view as to the correspondence of the heat-curve with the mortality-curve is thus amply borne out by the data for Toronto, as is also his statement that an average of at least 60° F. is necessary for the development of the epidemic. And Holt's theory that the heat of June is the cause of July mortality is strongly confirmed.

Jennings, of Detroit, in the Address in Medicine before the Michigan State Medical Society this year, tells us that "in Detroit, for the year ending July 1st, 1898, 35 per cent. of the total deaths were under the age of five years, and 25 per cent. under the age of one year. Most of the deaths under one year are due to nutritive disorders, directly or indirectly the result of improper feeding."

If further argument were needed, one might quote Emmett Holt in his address of last year to the American Pediatric Association, in which he states that during the past eight years, of 151 children left under his care during their entire infancy, not one had died, though only thirty of the number were breast-fed during the most of the first year, and ninety were entirely bottle-fed. From inquiry among physicians in New York in the same field of practice, Dr. Holt further concludes that "in the well-to-do classes, with the best care, the mortality from all causes during infancy does not exceed 2 or 3 per cent., as against a general mortality for this period among all classes of about 20 per cent. These are most healthful signs, and show the possibility of a very great reduction in infant mortality everywhere with a better understanding of all conditions, but especially of infant feeding."

As regards the title of my paper, I wish to say beforehand that I intend referring to infant feeding only in so far as it is a cause of

infantile diarrhea, and, of course, also in so far as it bears upon treatment. The feeding of the normal infant I do not intend to take up, more particularly as the programme includes a paper upon this subject from my friend, Dr. A. R. Gordon, of this city.

After a *résumé*, as concise as possible of our present knowledge of the physiology of infant digestion, it would seem logical to proceed to the discussion of the bacteriology and pathology of infantile diarrheas, and, therefore, endeavor to classify them in various ways, upon bases clinical, and anatomical and bacteriological, in hopes of clarifying our thinking and rendering our diagnostic habits more orderly and exact. The main part of the paper will then follow, a discussion of the treatment of these affections, dietetic, hygienic and medicinal. The drugs recommended I think it better to treat by themselves, in groups, as stimulants, digestives, purgatives, astringents, antiseptics, sedatives, and so on.

With regard to the physiology of infant digestion, it differs, as is well known now, in certain important respects from that of adult digestion. Rotch divides the life of a child as regards nutrition into three periods—first, the first year; then the second and third years; and third, the remainder of childhood. The natural aliment for the first of these period is, of course, breast milk. First, as regards digestion in the mouth. During the first year, at any rate till the teeth appear, the mouth bears little relation to digestion, less than in adult life, its function being merely the mechanical one of sucking. The saliva is practically absent, being unneeded, till the tenth or twelfth week, and with the advent of the teeth and the possibility therefore of less fluid dietary, the saliva becomes more abundant and much more actively diastatic.

Then as to the stomach. First, as to its capacity, the interesting measurements given by Rotch and others may be boiled down for all necessary purposes to the following:

- 1 oz. at birth.
- 2 ozs. at two weeks.
- 6 ozs. at six months.
- 9 ozs. at twelve months.
- 12 ozs. at eighteen months.

The position of the organ in the baby is more vertical than in the adult, mainly because of the undeveloped condition of the fundus, which practically does not exist till the teeth begin to come and the diet to be altered, a very interesting point if we remember the physiology and functions of the adult fundus.

The secretions of the stomach are three, pepsin, hydrochloric acid and the rennet ferment, Hammarsten's lab-ferment. The latter is much the most important of the three, as it is the precipitating agent, causing coagulation of the proteids.

The functions of the stomach then are mainly twofold. First, it is a reservoir, and, second, it coagulates the proteids and sends them on for intestinal digestion. To these two duties of course must be added the partial digestion of proteids (usually only very partial), and the absorption of fluids, peptone and crystalloid material, *e.g.*, sugar.

The stomach of the nursing baby under one month is usually empty one hour, or a little more, after feeding. This period slowly lengthens until at eight months or so it takes two or three hours to empty its contents into the duodenum. This is very interesting when considered in connection with the normal physiological interval for feeding, the child up to two or three months usually insisting upon being fed every two hours, and the interval gradually lengthening to three or three and a half hours. So that the infant if left to itself will, by the promptings of animal instinct, give the stomach quite the same proportion of physiological rest as the adult does, indeed probably much more punctiliously than most adults do. The duration of stomach digestion is much prolonged if cow's milk is the food, or if disease exists.

Third, as to the intestine. This is much the most important portion of the alimentary canal. It is less closely tethered up by the mesentery than in the adult—the duodenum is much smoother and freer from folding and pouching than in the adult, a circumstance connected, as Rotch points out, with the fact that there is less need for delay of its contents in the infant than in the adult.

It is interesting, too, to note that while in the adult a ratio in length between the large and small intestine is, respectively, about as five to one or one and a half, in the infant it is as nine to one and a half, a fact suggestive of the great importance of the small intestine in the child, and portentous as to the ill-results in the infant of derangement of its functions as in cholera infantum.

The most active secretion in the small intestine, as in the adult, is the pancreatic juice which is active in the digestion of fats from the very first, and which digests the larger proportion of the casein from the stomach. The large size of the liver at birth bespeaks the importance of the bile as a peristaltic stimulant, and as an assistant in the digestion and absorption of the fat which the nursing infant gets in such large proportions. The bile doubtless assists in preventing in the infant the constipation which would prevail in the adult upon a similar diet.

The colon, as in the adult, is a reservoir for feces, digestive power being absent and absorptive power slight.

We turn now to the bacteriology and pathology of the alimentary canal.

Normally at birth the whole canal is sterile, but in a few hours bacteria are found throughout its whole length. The stomach, as

a rule, is practically free, except in disease, but in the intestine there are two obligatory or constant forms. Escherichs was one of the original investigators in this direction, and Krus, Biedert, Baginsky, Lesage, and many others have added to his work. On this side of the water, Booker's exhaustive investigations are indispensable to anyone wishing to study the subject, especially his communication in the Johns Hopkins Hospital Reports, Vol. VI., 1897. It has been found that the two obligatory bacteria in healthy nurslings are *B. lactis aerogenes* and *B. coli communis*. The first form thrives in the presence of milk sugar, and is, therefore, most abundant in the upper parts of the small intestine; the *B. coli communis*, as its name implies, prefers the lower, small intestine and the colon. In diseased conditions these normal relations are disturbed, and the bacteria are formed in enormously increased numbers in other than their own portion of the canal, with new-formed and greatly increased toxicity, and in company with others of upwards of thirty different varieties in different cases as studied by Booker, and including various micro- and strepto- cocci and bacilli, the exact bacteriological condition cannot, of course, be clinically determined in each case, but it may vary from the simple non-inflammatory dyspeptic diarrhea with no bacterial abnormality, to the severest streptococcic gastro-enteritis, with all sorts of bacterial combinations and grades of clinical severity between which, of course, makes classification very difficult, as we shall see. Various forms of *Proteus vulgaris* are common, and usually in severe cases.

As regards the pathology of infantile diarrhea, it is not necessary that I should occupy your time with any discussion of the lesions of the alimentary canal. I prefer to pass on to a brief statement of the lesions found secondarily in other viscera. Suffice it to remind you that the most fulminant cases may be those in which death is due to toxins which leave behind but little trace of damage to the alimentary mucosa anywhere; while in other cases, the mucosa is found in any stage of destruction, from mere hyperemia and superficial loss of continuity to severe inflammation with infiltration of leucocytes, erosion, necrosis and sloughing right through to the serous coat, luxuriant bacillary invasion of the tissues of the bowels and chronic ulceration of the bowel if life be sufficiently prolonged.

From the classical investigations of Booker we gather information which I have summarized as follows: as to the morbid anatomy of the other viscera.

I. In acute cases:

1. The spleen—always hemorrhagic, large and juicy, with distended vessels and extravasations, and often focal necrosis in the lymph nodules like that in the solitary glands in the intestine—is frequently infiltrated with the same bacteria as found in the intestine.

2. The liver—nearly always engorged with blood, the cells separated by widely distended capillaries and showing fatty degeneration or becoming necrotic.

3. The kidneys—some cases show presence in kidney tissue of the intestinal bacteria, *B. coli comm.* and *B. lactis aerog.* Every case shows necrosis of epithelium in convoluted tubes—the capsules of the glomeruli sometimes show signs of inflammation or are plugged with coagulated albumen, and the tubules sometimes contain hyaline casts, especially if the case is somewhat chronic—the kidney, as a whole, is usually enlarged, congested, with marked striations, and capsule stripping off easily.

4. The lungs—give cultures of bacteria more frequently and with greater luxuriance than any of the other viscera, *B. lactis aerog.* and *B. coli communis* most commonly, Booker saying expressly that “the gastro-enteric canal is the starting point of the general infection,” and that “the same bacteria found in cultures from the stomach and intestines appear in cultures from the other organs.”

Lobular hemorrhages of greater or less extent are often seen; the bronchial tubes are more or less filled with mucus and broncho-pneumonia of more or less severity exists, always recognized as an almost necessarily fatal complication.

II. In chronic cases, meaning either those which begin without great acuteness or which have survived an acute attack of, say three weeks (Holt says six weeks), the prevailing lesions are much the same as detailed in acute cases, with difference due to longer duration of the lesion; for instance, the kidneys contain hyaline casts, and show more markedly necrotic condition of epithelium especially of convoluted tubules. In one case Booker noted that “the brain surface was covered with a thick layer of bacteria.”

1. The spleen—of twelve examined, ten showed hemorrhage, sometimes very extensive; six showed focal necrosis in the lymph nodules.

2. The liver—of ten examined all showed great capillary distention, and all showed cell necrosis, often of the entire lobule, and, if less severe, limited to the centre of the lobule. Miliary abscesses may occur if life be sustained for a sufficient time.

3. The kidneys—of eleven cases only one seemed normal. All the rest showed as the most constant lesion necrosis of the epithelium of the convoluted tubules. Hyaline casts were common. Intracapsular inflammation, though rare, was noted.

4. The lungs—only one case seemed normal out of twelve. Almost constantly, lobular pneumonia of more or less severe grade was seen, with bacterial invasion of lung tissues often very luxuriant, and hemorrhage, and sometimes consecutive atelectasis.

As regards relative importance, Booker finds, as clinical experi-

ence would lead us to expect, that the lesions of the lung are the most serious. Next in importance are those of the kidney, while those of the liver and spleen are neither so constant or so disabling. Booker states also that "a direct relation between the bacteria and the lesions in the solid organs is seldom demonstrable, except in the lungs. . . . In other organs the lesions resemble those resulting from the absorption of the toxalbumen products of bacteria," such as necrosis of kidney or liver epithelium.

It is accepted as proved that there is no specific organism of the disease, and a very important point is the fact now generally admitted, that the normal bacteria, particularly the *B. coli comm.*, may develop varieties of great toxicity. What the conditions are that produce this variant growth is not yet known. But one proof of the truth of this view lies in the report made by Lesage on his attempts at the serum treatment of infantile diarrhea, in *Rev. de Therap. Med. Chir.*, No. 24, 1896. His serum was obtained from asses after injection with colon bacilli from virulent milk or stools. Twenty-six out of fifty-two children treated with this serum (exactly 50 per cent.) lost all marked symptoms in less than forty-eight hours, fourteen were improved, and twelve unimproved. In all cases where the stools were green the color disappeared after the injections, and what is singular, unless the theory of variation in toxicity of colon bacilli be wrong, he found that the serum obtained from asses after treatment with the colon bacilli of normal stools did not give these results. (Blackader, in Sajous' *Cyclop. Pract. Med.*, Vol. IV.)

As regards the third main head in the plan of this paper, namely, classification, I beg you to bear with me if I first of all lay what may seem to be undue stress upon the importance of it. Diagnosis, oftentimes sufficiently difficult in concrete cases, is manifestly impossible unless we carry in our heads clear conceptions of the varieties of the disorder. Of course we assume that typhoid fever, the acute specific fevers, particularly scarlet fever and pneumonia, and intussusception, are all excluded.

A clinical classification may first be attempted, based upon the symptoms. Thus cases may be :

1. *Acute.* (a) Acute intestinal inflammation from the first, with little constitutional poisoning, thus corresponding to the adult type.

(b) Virulent toxemia or even general infection with little evidence of intestinal lesion.

Or

2. *Chronic*, in which

(a) Intestine shows severe and obstinate ulcerative inflammation, or

(b) Persistent malnutrition and loss of assimilative power, with little or no inflammatory process.

Again, while the primary trouble in all cases is the gastro-enteric infection, in some cases the outstanding symptoms soon cease to be those due to lesions of alimentary canal, and come to be those due to lesions in other organs, especially the lungs and the kidneys.

Blackader, of Montreal, in a very helpful and exhaustive article in Sajous' *Cyclopedia of Practical Medicine*, Vol. IV., adopts Booker's bacteriological classification, with a little modification, as follows :

1. Dyspeptic non-inflammatory diarrheas, functional, due to ingestion of irritants, usually food, and most frequently milk.
2. Inflammatory diarrheas, in which the symptoms of a toxic systemic infection are predominant.
3. Inflammatory diarrheas, in which, in addition to the systemic infection, the local inflammatory conditions produce marked symptoms.
4. Chronic diarrheas, in which the acute inflammatory symptoms have more or less subsided, but in which the stools remain abnormal, both in character and in frequency, and nutrition is apt to be much impaired.

This latter class is, in our opinion, a very useful addition of Blackader's to the more purely bacteriological classification of Booker, which is shortly as follows :

1. Non-inflammatory dyspeptic diarrheas.
2. Streptococcic gastro-enteritis.
3. Bacillary gastro-enteritis.
4. Mixed cases.

The latter class, of course, includes by far the larger number of cases seen in practice.

Still another classification, and I think the most useful of all, is based on anatomical considerations—and it becomes a duty to decide at once whether a case is one of enteritis, colitis, or enterocolitis, since radical differences exist in the treatment to be adopted in each case. For instance, neither opium nor irrigation of the bowel can be said to be so necessary in enteritis as in colitis with small frequent slimy and blood-stained stools, tenesmus, and often prolapse of the rectal mucosa. Nor would bismuth be nearly so useful in colitis as in enteritis, with its large, watery, often foul-smelling, dejections.

Coming now to the last and most important subject of treatment, permit me to say first, that the necessity for explicit detailed directions in writing is very urgent in all these cases. Only in this way can you impress upon the lay mind the absolute essentiality of what seems to them unimportant details. Particularly in regard to feeding should orders be written out as to composition of food, and quantity and frequency of feeding. I am accustomed,

in my attempt to bring the mother's mind around with a wrench to my way of thinking, to tell her that if I were compelled to choose between medicine and food in the treatment of a case, I should not hesitate to throw medicine away and trust to proper feeding. Yet, of course, as we all know, we must usually give some medicine, both for its own sake and as a matter of policy, especially in those chronic cases, which for our sins do sometimes afflict us, unless we actually maliciously wish to encourage our patients to leave us for some practitioner who will give them a small sugar pill every fifteen minutes, an experience through which those of us at any rate who practise in urban communities do sometimes pass.

As regards feeding, I should almost apologize for saying first, that an entire and absolute change of diet is a *sine qua non*, and in acute cases the diet has been, of course, usually milk. The very great value of prompt intervention in acute cases, and of the giving for twenty-four hours, at least, of nothing but from one to two ounces, every two hours or oftener, of sterilized water, to which a pinch of salt and a taste of sugar, preferably milk sugar, has been added, cannot be disputed. It is borne out clinically and by the fact noted by Booker that "none of the bacteria isolated (from the stools) were found to be capable of multiplying in ordinary hydrant water forty-eight hours after it had been inoculated; in all such cases negative results were obtained." After the first twenty-four hours or so are passed it may be well to attempt the use of some nutritive fluid—and at the outset one must decide whether to use albuminous or farinaceous materials. If the stools are not specially foul albumens may be given, and the best one is probably egg-water. White of egg contains about 10 per cent. albumen, and should be diluted with about ten times its bulk of sterilized water, with a little salt and a taste of sugar, as it is stated by Biedert that a solution of albumen stronger than 1 per cent. cannot be digested as a rule by even the healthy stomach, and it is found in practice that a "3-6-1 mixture," as it is called (3 per cent. fat, 6 per cent. carbohydrates, and 1 per cent. proteids), is a very generally useful form of modified milk, approximating closely an average breast-milk. Another good albuminous food is the red meat juice in drachm doses added to the water or other fluids that may be in use. Liquid peptonoids, panopepton, and so forth, may be mentioned in this class. As to the farinaceous fluids, they are all of the same type, and may be equally well made from barley, rice, oatmeal, sago, tapioca, corn starch, or arrowroot, so long as one bears certain points in mind. One point is that the more vegetable albuminoids there are the better, and that, other things being equal, the husk and the layers of the grain next it should be boiled as well as the starchy contents of the grain.

Another point is that very thorough boiling is necessary, three to four hours at least, to cause diastatic change and prevent trouble from the indigestible starch. Thorough straining, too, is important. The consistency of a farinaceous fluid should be that of thin to medium cream, such as will pass easily through an ordinary rubber nipple. And now that the nipple is mentioned it is worth while remarking that if the stomach is irritable it is very often due to the fact that the hole in the nipple is too large, and and the child swallows too rapidly.

One of the most useful of all the starchy preparations is likewise the oldest, the good old bag of flour the size of the lower half of the forearm boiled steadily for ten hours. The outer shell is thereafter removed, and the firm central part, like a piece of soft white bathbrick, grated down and slowly reboiled, as required, with water to make a gruel of a consistency varying with the age of the child. For children over six months, at any rate, this is a most useful food in diarrheal conditions.

One will often find whey very useful, made either with sherry, or, what I think is better, essence of pepsin or junket-powder. It makes an excellent vehicle for liquid peptonoids or red meat juice.

Fischer, in a recent number of the *N. Y. Med. Record*, speaks highly of very weak cold tea, especially when stimulation is desired, and of an acidulated drink made by adding to a tumblerful of plain boiled and cooled water five to ten drops of dilute hydrochloric or phosphoric acid, and sweetening with a little glycerine (a powerful antizymotic) or saccharin.

It is well on inaugurating the change of diet to try to lengthen the interval of feeding—always bearing in mind the urgent need of water to replace the fluids drained from the tissues by the diarrheal loss. Thus, if a child has been getting four ounces, two of milk and two of barley water every two and one-half hours, one should try to give, instead, say, four ounces of barley water with a drachm of red meat juice every three to three and one-half hours. As regards temperature, either extreme seem to me bad, particularly in young infants. Some say that the food should always be cold. This may apply to children of ten to twenty months, but in infants of, say, three months it aggravates pain and has no counterbalancing advantage.

The return to milk should be very tentative. Casein should be allowed last, and fat first in the shape of small quantities of cream, say half to one teaspoonful at each time of feeding, added to the barley water or other farinaceous fluid, and slowly increased. The cream should never be bought as such, but obtained by removing the top two inches from the jar which has been left five or six hours on the ice.

Rachford goes so far as to say that "cream is theoretically never

contraindicated, and can do no harm in any form of a disease, but will be found to serve the best purpose in chronic cases, and after the third or fourth day in acute cases." My own clinical experience will hardly tally with the statement that "cream can do no harm in any form of the disease." The same writer goes on to say that "meat broths contain so little albumen and carbohydrates that . . . they may be given at any time, in either acute or chronic cases; but they are specially indicated in a few cases after the first twelve or twenty-four hours' treatment." One danger in their use lies in the fact that they are very apt to be kept far too long after making, for they very promptly turn stale. A contraindication to their use would be foulness of stools or great frequency and copiousness. If the morbid process be mainly a colitis they can be given more freely.

As regards hygienic measures, one of the very first importance is coolness. During the febrile stages one often sees the little sufferers wrapped up so warmly as to add decidedly to the rate of their exhaustion. The room should be quite cool and airy, and not too bright, for the nervous sensitiveness of the patient is sometimes excessive. Cool sponging with alcohol or some toilet water is very beneficial. On the other hand, if the febrile stage is over, many babies are very much the better of the warm water bag in the cradle. Cold feet and hands call for this measure. And it is often most relieving and soothing to the child, especially in that type of extreme fretfulness and restlessness which usually accompanies nephritis when it occurs, to put him in a hot pack. I have been most gratified with the result of this expedient whenever adopted. And even in feverish cases, when fits of abdominal pain come on, the soothing effect of a hot compress over the abdomen is often most marked.

Of course, a child acutely ill should not be mauled or handled, nor taken out in the carriage, and so on, but when convalescence has begun the revivifying effect of pure fresh air, as by a sail of a few hours, or an afternoon at, say, Centre Island here, is remarkable. I was never so struck by this as in the case of an American child brought here very ill from Old Point Comfort, Virginia. I saw him, after the warm season was well on, the day he arrived in Toronto, and he was very sick, emaciated and languid. The next day his mother brought him to my house, and I took for granted at the first sight that this was another of her children, so different was the brisk, active and actually comparatively plump child from the feeble sufferer of the day before. I am certain that it was not food or medicine mainly that produced in twenty-four hours so astonishing a change.

Another hygienic measure worth noting is the careful disinfection of the diapers by boiling. And the nurse should be instructed

always to keep the last diaper till another one is soiled for the inspection of the physician when he comes.

As regards medicinal treatment, the first drug group to be mentioned, because it is the one first employed, should be *purgatives*. The best of these is usually castor oil, unless forbidden by marked gastric irritability. I usually employ a sweet castor oil, the composition of which I know, containing 99 per cent. of oil, with a little saccharin, essential oil of almonds and an aromatic ether or two. Castor oil has a great advantage of being speedy and painless unless too large a dose is given, and of having a subsequent constipating effect. It has also a mechanical effect, making it specially good in the early dyspeptic stages of the disorder for the sweeping out of curds, seeds and other offending matter.

The only other purgative of repute is calomel. Lesage prefers calomel if the stomach is suitable. He has two ways of giving it—first, small repeated doses, say, one-tenth to one-fifth grain every one-half hour till bowels move if there be slight fever, soft abdomen, little tympanites and copious stools; and, second, one large dose where the case shows high fever, much distention and foul-smelling and scanty stools. The dose he considers should be, for an infant under three months, one grain; under one year, two grains, and under three years, three grains.

Other purgatives, such as senna, rhubarb, salines, and so forth, are all more or less bulky and unpalatable, or are objectionable in their mode of action.

As regards *stimulants*, alcohol stands easily first. They are nearly always needed, especially after the acute stage is on. And even from the first, alcohol acts excellently as a carminative, relieving gastric flatulency. An infant does not need in the most extreme cases, say, of broncho-pneumonia, more than two ounces in twenty-four hours, and in diarrheal conditions two to four drachms is usually plenty. It is better to mix the daily portion at one time, say, two drachms in three to four ounces of sterilized water, and give as required. I prefer good brandy for babies, as when diluted it is sweeter than whiskey, and they take it better. Wines are not usually good, being either too sweet or too acid, and more apt to disagree. Holt says that in the acute gastro-enteric diseases the depletion is often so great and there is so little absorption of food that the patients must, in certain cases, be sustained by alcohol for several days. We need scarcely, however, nowadays add the warning that the drug should not be used simply from routine.

Other stimulants are ammonia, especially as the aromatic spirit, and caffeine, as cold tea or coffee.

Antipyretics, as a class, have but small place in the treatment of diarrheal disorders.

Quinine I should not recommend at all, both for its unpalatability, and because it upsets the stomach. Besides, I can see no therapeutic advantage in it.

Of the three, coal-tar products, phenacetine, antipyrine, and antifebrine, the first is the least objectionable in all ways, and is often most useful, not as an antipyretic, though, of course, it acts so incidentally, but to control excessive nervous irritability, particularly in cases where a mild diarrhea threatens to complicate dentition. In severe diarrheas it should, I think, never be used, for depression will be quite severe enough without it, and water can control the temperature and the nervous symptoms as well.

Antiseptics should *a priori* be most useful, from what we have learned of the bacterial conditions in the alimentary canal. But in practice disappointingly small results are obtained. Foulness of stools is a special indication for their exhibition.

Salol is put first by some. I think it very risky, as nephritis is an ever-present danger in severe cases, and the infantile kidney is peculiarly susceptible to the action of carbolic acid—I have ceased its use altogether.

My favorite is bismuth salicylate, from one-half to three grains, according to age. It is sometimes ill-borne and irritating. Others are calomel, bichloride of mercury, biniodide of mercury in one-fiftieth grain doses, usually with potassium iodide. "Of eighty cases, seventy-two cured in two days." (Luff, *Brit. Med. Jour.*, November 16th, 1898, quoted by Blackader, *Sajous' Cyclop. Pract. Med.*, Vol. IV.)

Arsenite of copper, benzonaphthol, menthol and thymol in one form or another, creosote and carbolic acid are all open to the objection given above; resorcin is very highly spoken of by Fenwick, in three or four grain doses every four hours even to very young infants. I have used it, and find it, I think, useful, and certainly very readily taken, in syrup, and, say, elixir of lactopeptine. Endoxin is one of the new iodine and bismuth preparations, non-toxic; dose, one grain every hour to a child a year old. I have no experience of it in this connection.

As a class, antiseptics are depressant to the heart, and are of doubtful utility. Plain sterile water, in large quantity, ten or twelve ounces a day, will control an acute diarrhea better (and meet other indications besides) by replacing the fuel on which the conflagration in the intestine feeds.

Astringents are theoretically most useful; but, practically, in the diarrhea of infants are of very little value. They should be preceded by purgation. Bismuth salts come first, and best of these the subgallate, unless one wishes the antiseptic effect of the salicylate. Two to four grains every two hours may be given to a child one year old. Holt declares his preference in the great majority

of cases for the subnitrate, but says that at least two drachms a day should be given to a two years old child. Tannic acid, of course, in one form or another, usually a vegetable extract like tinct. of kino, catchu, and so forth, is a very old remedy, but modern practice relegates it to a secondary place. Properly used it is most valuable. The newer forms of it, tannigen and tannalbin, do sometimes act very well. Tannigen acted like magic for me this year in doses of three or four grains every four hours in a little white sugar, with a child of ten months, which had a persistent chronic diarrhea, mainly due to fermentation in the small intestine. The stools were at once reduced from eight to twelve daily, to two. But in acute cases, and indeed in the majority of cases, I think that experience is showing that recovery is not so rapid as when other treatment is adopted. Certainly when severe derangement of secretions exist I have seen tannalbin come through into the bed pan practically unchanged; without effect. As much as forty-five grains a day may be given to young babies, and excellent results are reported, chiefly from the continent.

Digestives are of great importance, for reasons that it is superfluous to detail. They may be used to predigest the food or be given as medicine. I find lactopeptin, either as powder or elixir, most useful. Ingluvin, pepsin, pancreatin, etc., are only to be mentioned. As a class, they are naturally of more service in chronic than in acute conditions, for in the latter food is largely withheld as already been.

Opiates.—This class has been purposely left to the last, on account of its great importance. Opium will never lose its value in the treatment of infantile diarrhea, though latterly it is, perhaps, more intelligently used, and one is struck on reading recent literature at the infrequency of any illusion to its use. The best form is, I think, paregoric, for many reasons—palatability, its other constituents, and the fact that it contains opium and not morphia alone. Dover's powder is most useful, but its taste is objectionable. Chlorodyne is too hot, and, besides, contains not opium, but only morphine, which has more marked constitutional and less local effect on the bowels. Codeine is too mild a narcotic, and in young babies a too decidedly tetanizing agent, as I have seen. Chloral, belladonna, hyoscyamus, and so on, have no place in the treatment of this disease.

The very first rule to lay down about opium is that, until a purgative has been given, it should not be administered. The next rule is that the dose should not be repeated till the effect of the last one, if full, has passed off. And another, which would seem to lie fairly on the surface and yet is constantly neglected, is that opium should not be given in the same mixture with other medicine, but must be kept by itself and given as occasion requires only.

The chief indication for opium in acute cases is pain. In colitis, with tenesmus and its other characteristics, it is a necessity from the start, and I prefer to give it here in the form of laudanum in a very little, cool, thin, starch paste as an enema, repeated when expelled.

In chronic cases, and especially in cases often seen, in which feeding brings on excessive peristalsis with pain and evacuation of the bowels, it is often quite indispensable. In the latter case I usually order two to ten drops of paregoric half an hour before feeding, according to the age of the child and the length of the interval between feeding. Holt remarks that nothing requires nicer discrimination than the use of opium in diarrhea. Of course even with these little patients caution is needed, and opium must be discontinued as early as possible, for they soon learn to give it up with a bad grace.

Irrigation.—It will not do to close this paper without reference to the use of irrigations. First, as to lavage of the stomach. I have never employed it, as the conditions upon which private practice is conducted here practically preclude it, and I cannot help thinking that the great majority of cases we see get along well without it. Intestinal irrigation is quite another matter. It is undoubtedly most valuable, especially at the onset of any acute case, and throughout the course of a colitis or entero-colitis as against the simple catarrhal enteritis. The cold irrigation is a valuable antipyretic measure, but one to be used with caution, as it may depress before one is aware. The hot irrigation is of value, especially if normal saline solution be used, in cases of great prostration and collapse, and ranks only second to interstitial injections as a stimulative and restorative measure. Irrigations to be effective should be done by a physician, or at least by a trained nurse. Parents cannot usually do it properly. Holt says that they are advisable in all cases, and should be done at once on seeing the child, two or three times the first day and once a day afterwards. As to the medium to be employed, the day of medicated water has passed, and very properly so far as antiseptics are concerned, unless it be boric acid. Sterilized water or normal saline solution is all that is advisable, except in cases of chronic ulcerative colitis where weak astringents, such as tannic acid, ten to thirty grains, or extract of witch hazel, two drachms, or nitrate of silver, five grains, to the quart may be of service. Some authorities disapprove of nitrate of silver in all cases and certainly with reason in acute cases. This kind of irrigation should be kept up for fifteen minutes or so each time, and it is sometimes of advantage to follow it by the injection of three or four ounces of a much stronger similar solution which is to be held in for a few minutes by pressing the buttocks together.

In conclusion, Mr. President and gentlemen, speaking in the cold-blooded terms of the Malthusian brotherhood, who love political economy, let us remind ourselves that no province of the *Ars Medendi* is so fraught with direct benefit to the state as that which saves to the State the lives of so many little citizens useful *in posse* to the body politic. And who can estimate just what they are *in esse* to the family, or calculate the lessening of human sorrow, the saving of pain to those who are so completely at the mercy of the careless and the ignorant, though they be usually well meaning? If it be true, as Cicero says, that "In no point do men come nearer to the gods than in giving health to their fellow-men," it must be true that this point is overpassed when we can bring help to our little ones who "rule by the right divine of helplessness," as Longfellow says in the "Hanging of the Crane," so redolent, like all his work, of that domesticity which is the crown and flower of the physician's relations with the public, and which attains its fullest growth in the treatment of infantile diseases.

We cannot expect sudden success in our educative efforts, for though Minerva, the goddess of knowledge, sprang full armed from the head of Olympian Jove when Vulcan did a craniotomy upon him with his axe, miracles of knowledge are not nowadays so performed; and if this effort of mine, and the discussion which may follow, accomplish some small share in the task I have outlined, I shall feel amply rewarded.

IRREGULAR MENSTRUATION IN YOUNG WOMEN DUE TO ANEMIC CONDITIONS.

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The young physician just starting into practice cannot help but be impressed with the frequent occurrence of menstrual disorders in young girls during the period just succeeding the age of puberty. The metamorphosis of a girl into a woman, consisting as it does of structural and functional changes throughout her body, in many instances leaves behind pronounced alterations in the quality or even quantity of the blood current. How common it is to have a mother bring her daughter to the physician and say, "Doctor, I would like to have you do something for my daughter. For nearly a year she has been losing interest in everything and seems to be completely worn out. She has no appetite and absolutely no ambition for work, study or play. She does not lose

flesh or grow thin at all, but her color is so poor and she seems so weak that I fear she is going into consumption."

Inquiry on the part of the doctor elicits the further information that the young lady in question is sixteen years old or thereabouts, and that she is a school girl. A year or two ago she first menstruated, and since that time has been unwell only twice, or at irregular intervals, varying anywhere from three to nine months. Her bowels are either constipated or the reverse, and she may complain of headaches, vertigo, palpitation of the heart, insomnia, indigestion, etc., etc. The pale face with its sallow greenish tinge, the bleached tongue, the colorless conjunctivæ and finger nails, tell well the tale of impoverished blood. Combine the history with the objective symptoms and the diagnosis is clear of chlorosis or green-sickness. The absence of cough or pulmonary symptoms excludes the dreaded "consumption," but we have instead a condition of the blood in which the essential constituents are diminished and the whole quality of the life-giving current so depreciated that the various organs of the body are unable to perform their normal functions. The uterus is small and illy developed, and the supply of rich blood it so urgently requires in its developmental state is not to be had. Is it any wonder, then, that the chlorotic girl does not menstruate regularly? It is a great wonder that she ever menstruates at all. Correct the anemic or impoverished condition of her blood and the physiological function of her uterus will be resumed as naturally as that of any other organ.

How this chlorotic condition can best be corrected is the next question, and one which because of its frequency concerns every practising physician. Countless remedies have been presented to the profession, but far and foremost above them all is iron, notwithstanding certain high authority to the contrary. Arsenic is certainly valuable, but it ranks far below iron or even manganese in the therapeutics of anemia. In order to be most efficacious, however, the iron should be in its most readily assimilable form, and until recently the carbonate and albuminate have been supposed to present this requisite in the highest degree. But since manganese has grown in favor as an adjuvant to iron, a new preparation has been submitted to the medical profession and in every way it has proven itself an ideal one. I refer to Dr. Gude's preparation of the peptonate of iron and manganese, known as peptomangan. This admirable combination of iron and manganese is readily taken into the human economy and appropriated to its needs, without deranging the weakest alimentary tract, or hindering in any way the normal processes of digestion, assimilation and excretion. It should be given in water or milk in teaspoonful doses after meals, and its administration is invariably followed by the results desired.

But in order that the medical treatment of chlorosis may be most valuable and efficient, it should be augmented by auxiliary treatment, consisting of careful attention to diet and exercise. It goes without saying that the food of an anemic girl should be most nutritious and particularly abundant in albumen, while the exercise should aim to provide greater quantities of oxygen in the form of pure air, without lowering the vitality. Walking, skating, tennis or bicycling in moderation are all able to supply the demand for exercise.

Treatment laid down on the above lines, followed out in every instance with good habits of hygiene and a careful observance of nature's demands, will regulate the various functions of the body, and the menstrual function will prove no exception to the rule.

The following cases will substantiate the above :

CASE I.—Miss C. S. K., seventeen years old ; decidedly anemic and much troubled with constipation. First menstruated at fourteen, since which time she has never been regular, flowing profusely sometimes twice a month, and other times going three or four months without menstruating at all. Has frequent fainting spells and a decided anemic heart murmur. At time of coming under observation had not menstruated for two months and ten days.

Treatment consisted of a regulated diet, tablets of aloin, strychnine, belladonna and cascara, sagrada, one each evening until bowels were regular, and teaspoonful doses of pepto-mangan (Gude) after meals. Gradually the fainting spells and heart symptoms disappeared, and on the fifteenth day after commencing treatment she began to menstruate, the flow being natural in quantity and continuing four days. Treatment was continued and twenty-nine days later she menstruated again, continuing this time five days. Soon after this the pepto-mangan was stopped. From now on, up to the present time, a period covering three months, her menses have appeared regularly every twenty-eight days.

Her whole appearance has changed and in every respect she appears well and strong. Period of administration of pepto-mangan, fifty-five days.

CASE II.—Miss K. M., aged twenty. Menstruated first at age of fifteen, and was fairly regular for three years, but since an attack of typhoid fever, two years ago, has never known when she was going to be unwell. Patient was not thin, but face was pale and yellowish, hands and feet were cold "all the time," and her whole condition was one of "blood poverty." Complained of frequent attacks of diarrhea following constipation.

Treatment consisted of plenty of outdoor exercise, good food with abundance of milk, and pepto-mangan (Gude) teaspoonful doses after meals.

Her restoration to health has been rapid and satisfactory. She has menstruated three times since beginning treatment, the longest interval being thirty-one days. Says she is all right, and her appearance certainly sustains her words.

In this case the administration of pepto-mangan covered a period of thirty-six days.

CASE III.—Miss D. L.; school girl; aged fourteen. For two years she had been troubled with headaches, dizziness and short breath, fainting away at the slightest provocation. Had no appetite, and, as her mother expressed it, "for the last six months has been going down hill pretty fast." Had been treated by a physician for heart disease, but received no benefit. Menstruated first seven and a half months ago, "but had not seen anything since."

Examination showed heart to be normal, although it was a trifle fast, and a slight murmur could be determined when patient was in a recumbent position, evidently anemic in origin. Lungs proved to be all right.

Her general condition was anemic, and she was put on pepto-mangan (Gude), a teaspoonful after meals, and sent into the country where she could be out doors most of the time and have plenty of eggs and milk. A letter from her mother says that she has changed so that she can hardly believe that it is the same girl. Furthermore, her menses appeared twenty-one days after starting the pepto-mangan and returned again twenty-nine days after. The pepto-mangan was ordered stopped, and since then I have not heard direct from the patient, although from her father I learn that she is "perfectly well" and coming home soon.

Period of administration of pepto-mangan, fifty-six days.

CASE IV.—Miss L. Aged eighteen. Had never menstruated. Her general appearance was one of profound anemia. A careful examination eliminated any abnormality of genital apparatus. Organs normal in relation, but undersized. Prescribed pepto-mangan in teaspoonful doses after meals and gave general directions as to diet, etc. Began to menstruate thirty-two days after beginning treatment, the flow continuing one week. Twenty-nine days later she menstruated again. At the present writing she is still under treatment and is due to menstruate in seventeen days. Her whole condition is very much improved.—*Vermont Medical Monthly.*

MONTHLY REPORT.

Issued by the Provincial Board of Health of Ontario for August, 1899. Showing the deaths from all causes and from Contagious Diseases in the province, as reported to the Registrar-General by the Division Registrars throughout the Province.

Issued Sept. 25, 1899.
F. H. BRYCE, Secretary.

YEAR.	MONTH.	Total population of province 2,283,182	Total population of municipalities of province 777,777	Total deaths reported from all causes.	Rate per 1,000 from all causes.	Scarlatina.	Rate per 1,000	Diphtheria.	Rate per 1,000	Measles.	Rate per 1,000	Whooping cough.	Rate per 1,000	Typhoid.	Rate per 1,000	Tuberculosis (Consumption).	Rate per 1,000
1898.....	August	2,235,326 98%	730,917	2,088*	11.4	8	0.04	25	0.1	5	0.03	16	0.07	55	0.3	172	0.9
1899.....	July	2,168,115 95%	670,867	1,613*	9.5	7	0.04	26	0.1	4	0.02	6	0.03	15	0.08	178	1.0
1899.....	June	2,108,606 92%	675,877	1,521*	9	12	0.07	22	0.1	5	0.03	4	0.02	13	0.06	157	0.9
YEAR.	MONTH.	Total population reporting.	Total municipalities reporting.	Total deaths reported.	Rate per 1,000 from all causes.	Scarlatina.	Rate per 1,000	Diphtheria.	Rate per 1,000	Measles.	Rate per 1,000	Whooping cough.	Rate per 1,000	Typhoid.	Rate per 1,000	Tuberculosis.	Rate per 1,000
1898.....	August	2,183,168 97%	694,600	230	....	10	0.05	16	0.09	6	0.03	12	0.06	34	0.2	152	0.8
1898.....	July	2,157,387 95%	683,887	224	..	15	0.09	16	0.09	18	0.1	12	0.05	20	0.1	143	0.8
1898.....	June	1,987,783 88%	621,807	222	....	9	0.05	29	0.2	7	0.04	7	0.04	10	0.06	160	1.0

* The months of June, July and August, 1899, include deaths from all causes, but the other months from contagious diseases only.

DOMINION MEDICAL MONTHLY

AND ONTARIO MEDICAL JOURNAL.

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Toronto, Canada.

VOL. XIII.

TORONTO, OCTOBER, 1899.

NO. 4.

THE PASSING OF MARMORECK'S SERUM.

The American Gynecological Society, through the medium of a special committee, has just issued an unfavorable pronouncement upon the efficacy of the anti-streptococcic serum of Marmoreck in that particular form of puerperal fever due to streptococcus infection. During the past year the whole question has been gone into most thoroughly; the voluminous bibliography on the subject—one hundred and thirty odd articles—has been carefully and conscientiously examined, and individual personal experience and the consequent acquired knowledge combine with these to make the report exhaustive, complete and valuable. The *personnel* of the committee is such and sufficient to command confidence and attention: Dr. J. Whitridge Williams, Baltimore; Dr. Wm. R. Pryor, New York; Dr. H. D. Fry, Washington, and Dr. Edward Reynolds, Boston. In this connection a brief history of the serum may be interesting. On February 23rd, 1895, Marmoreck presented his first communication on the subject to the Société de Biologie, of Paris, and demonstrated before that body, that streptococci retained their virulence when cultivated in a mixture of one part of human blood serum and two of bouillon, and that when this culture was repeatedly passed through the bodies of animals the virulence was so enhanced that the one hundred billionth of a cubic centimetre would destroy a rabbit in twenty-four hours. This exceedingly infinitesimal dose did not, however, produce death in all rabbits; but further experiments elicited the fact that

the one hundred millionth would do so. Marmoreck's next communication on streptococcus therapy, two weeks later, gave the results of the employment of this treatment on 413 cases of erysipelas in Chantemesse's clinic, with a mortality of only 3.4 per cent. The treatment of sixteen cases of puerperal fever was also reported, in all of which the uterine discharges had been examined bacteriologically, and local treatment refrained from. Quoting from the report: "In seven cases he had to deal with a pure streptococcic infection, and all of them recovered. In three other cases the streptococcus was combined with the colon bacillus, and all of them died. In four other cases the streptococcus was associated with the staphylococcus, and of these two died. While in the last case in which the infective agent was the colon bacillus, the serum appeared to have no effect." From his findings in these sixteen selected cases the scientist deduced that the remedy was efficacious in pure streptococcus puerperal infection, was of no effect whatever in either mixed cases or in those cases dependent upon other forms of bacteria, and that a bacteriological examination of the uterine discharges was essential and imperative in all cases before the injection of the serum. It followed as a natural sequence also, that all local treatment such as douches, curettage, etc., was to be strictly prohibited from the time of the employment of the serum. Other faithful and conscientious experimenters in the same field now came rapidly to the front and put upon record detailed statements of their beliefs or disbeliefs on the subject. Charpentier was probably the first to look somewhat askance at its value, and he was backed up by a goodly army of "doubting Thomases"; one in particular going so far as to assert that the serum was absolutely valueless. This, however, did not prevent large numbers both in France and Great Britain from prosecuting experiments still further, although on this side of the Atlantic, in the United States and Canada, it was as yet very little in use. One physician of note in Germany, Savor, the only one who reported on the employment of the serum in any number of cases from that country, records one death in a total of fifteen treated; but, strange as it may appear—on what he bases his conclusions is not given—with these good results he finds adversely to the use of the serum. Up to the 1st of April, 1899, 352 cases in which the serum had been employed, were reported. Twenty-seven experimenters in France recorded 214 cases; one in Germany recorded fifteen cases; many observers in Great Britain and America reported 123 cases. Of the continental observers fourteen reported favorably and the balance adversely. It appears from the table given in the report that in 101 of these cases a bacteriological examination was made, and in the balance 251 cases there was no such examination in any case. Of the first

class there were thirty-three deaths, or a mortality of 32.69 per cent.; while of the second class forty died, thus giving a mortality of 15.85 per cent. All told there were seventy-three deaths out of the 352 cases treated—a mortality of 20.74 per cent. After a very careful and searching examination of the whole of the literature on the subject the committee has come to the conclusion that "The only positive fact which has thus far been satisfactorily demonstrated is the possibility of markedly increasing the virulence of streptococci by appropriate methods."

Turning to the personal individual experience of the committee in the treatment of this disease we find that Dr. Williams has treated twenty-three such cases, Dr. Pryor fourteen, and Dr. Fry eight cases—Dr. Fry being the only one who employed the serum. In the past three years Dr. Williams, out of a total of ninety-one cases of puerperal fever, has only been able to discover the streptococcus in twenty-three cases, of which sixteen were those of pure culture. The treatment followed in these cases after a digital examination, and the demonstration of the bacteria in the uterine lochia, obtained through Doderlein's tube, was a single douche of sterile salt solution, the patient being then left alone as much as possible. If exhaustion supervened she was kept on the verge of strychnia poisoning and drunkenness with large doses of strychnine and alcohol. Out of these twenty-three cases one died. Dr. Pryor reported his experience with fourteen cases in which the germ was demonstrated in pure culture; one died. The uterine cavity was thoroughly cleansed and sterilized. Then a broad incision was made into the pouch of Douglas, any effusion present liberated, adhesions separated, and iodoform gauze packed firmly in so as to isolate the uterine body. The interior of the organ was similarly treated. Dr. Fry believes that the serum proved beneficial upon several of his cases; one case resulted fatally. Summing up: out of the forty-three cases there were three deaths, or 7 per cent. These results, when compared with the ordinary mortality, and with the 101 cases (*vide ante*) with a mortality of 33 per cent., appear in a most favorable light. The committee condemns hysterectomy for acute puerperal infection, also curettage, and finds that Marmoreck's claim for the serum is unsubstantiated. They advise as follows:

"In puerperal infections a portion of the uterine lochia should be removed by Doderlein's tube for bacteriological examination, and an intrauterine douche of four to five litres of sterile salt solution given just afterward. If the infection be due to streptococci, the uterus should not be touched again, and the patient be given very large doses of strychnine and alcohol if necessary. If the infection be due to other organisms repeated douchings and even curettage may be advisable. If the infection extends towards the

peritoneal cavity, and in gravely septicemic cases, Pryor's method of isolating the uterus by packing the pelvis with iodoform gauze may be of service. The experience of one of the members of the committee with antistreptococcus serum has shown that it has no deleterious effect upon the patient, and, therefore, may be tried if desired. But we find nothing in the clinical or experimental literature, or in our own experience to indicate that its employment will materially improve the general results in the treatment of streptococcus puerperal infection."

In the opinion of the committee and many other eminent observers there appears to be an inherent natural tendency to recovery in these cases where Nature's work is not balked by too energetic, mischief-producing local treatment. It is stated that the remedy is being rapidly abandoned in France, its birthplace; and the fact that the Pasteur Institute has made no pretensions to conceal its dissatisfaction has given the employment of the serum a deadly blow.

News Items.

THE Niagara Medical Association met on Wednesday, the 11th inst., at St. Catharines, when several valuable and interesting papers were read and discussed.

It is stated that several leading physicians of the city have personally contributed towards the establishment of a consumption sanatorium near the civic boundary, and that it will be immediately completed and perfected and a visiting and consulting staff appointed. Lieut.-Colonel Mason, Church Street, is receiving subscriptions, several having already been received; amongst others favoring the enterprise in a tangible manner with a \$100 subscription, being Mr. E. B. Osler, M.P. Drs. Sweetnam, A. Jukes Johnson and Mr. I. H. Cameron are on the Provisional Board of Directors.

THE Medical Health Officer of Winnipeg, Dr. Inglis is agitating for the submission of a by-law to the people of that city at the next municipal elections for the erection and maintenance of a crematory. Under the present system the garbage is collected in a great mountain of filth on the western confines of the city, and at times its stench circulates broadcast throughout the city, reaching even to the precincts of the General Hospital.

AN "institution" styling itself the Medical Alliance of America has been recently exploiting the public and profession in the city of Montreal. In the September number of the *Montreal Medical Journal* there is a clever *exposé* of the whole business and the general profession are warned to have nothing to do with the agents of this Alliance.

IN the September number of *Maritime Medical News*, Dr. A. P. Reid, Middleton, N.S., Secretary Provincial Board of Health, writes on the sanitary progress of that province. In this matter he thinks his province is away behind the times and advocates the appointment of county medical health officers and a better system of reporting contagious diseases; also a statistical bureau for the registration of marriages, births, deaths, etc., which has been allowed to lapse since 1867; and also the construction of sanatoria for the treatment of consumption, both for those who are able and those who are unable to pay for such treatment.

THE Protestant Hospital, Ottawa, has indeed found a benefactor in the person of Mr. E. B. Eddy, who recently gratuitously undertook to raise sufficient funds to wipe out the debt of that institution. Altogether he has collected, by his own personal efforts, some \$15,500, which sum will be amply sufficient to liquidate the hospital's indebtedness. He states that he found very little difficulty in his solicitations, as the people subscribed willingly, some subscriptions being received from non-residents of the Capital.

DR. J. F. W. ROSS attended the twelfth annual meeting of the American Association of Obstetricians and Gynecologists, held at Indianapolis, Ind., on September 19th, 20th and 21st. He took part in the discussion on Dr. J. F. Baldwin's paper on "Rare Cases of Kidney Cysts," and also on Dr. D. Tod Gilliam's paper on "What shall we do with the Post-Operative Hemorrhage of Celiotomy."

THE new Jubilee addition to the General Hospital, Winnipeg, has just been completed, and is now ready for the reception of patients. The rate for the intermediate surgical wards is \$1.00 per day, payable in advance. Patients may be treated by any physician they may engage who is licensed to practise in Manitoba, and for his fees they must be responsible.

MONTREAL is to have a new maternity hospital. Through the munificence of Lord Strathcona, who has contributed the handsome sum of \$10,000, a new building will be at once put in the course of erection. McGill and the Royal Victoria and the General Hospital will participate in and have equal representation in the re-organized governing board.

IT is said that the ambulance drivers of the city are now equipped with a physician's bag, supplied with bandages, gauze, needles, silks, artery forceps and other perquisites; and that in attendance upon accidents they are not at all backward in giving instructions to any physician who may be present as to where and how to place a bandage (*verb. sap*).

DR. PRIMROSE, Secretary of the Faculty of the medical department, Toronto University, delivered the opening lecture on Monday evening, the 2nd inst., on the "Life of John Hunter, the Father of Surgery." Amongst those present were the Chancellor, the Hon. Edward Blake, and the Minister of Education, the Hon. G. W. Ross.

THE Minister of Marine and Fisheries has handed over the Marine Hospital in St. John, N.B., for the purpose of a home for incurables; and in connection therewith, Dr. Walker has been in Toronto looking into the working of the Home in this city. Hamilton is also about to erect a similar institution.

DR. GEORGE ARMSTRONG PETERS, F.R.C.S., (Eng.), Associate Professor of Surgery and Clinical Surgery, University of Toronto, was married in the first part of September, to Constance, daughter of Sir William R. Meredith, Chief Justice of the Supreme Court of Ontario. We extend our congratulations.

TRINITY Medical College opened its doors for the session of 1899-1900 on Tuesday the 3rd inst. Professor Clark, D.C.L., delivered the opening address, speaking particularly upon the alcoholic and tobacco habits in their effects upon student and professional life.

DR. J. P. ROTTOT, Dean of the Faculty of Medicine, Laval University, cedes his place as Professor of Clinics to Dr. Demers, who will be replaced by Dr. Benoit. Lectures were resumed on the 4th inst.

"RUPTURE of the Puerperal Uterus with Cases" was the title of a paper read by Dr. J. F. W. Ross at the recent meeting of the American Association of Obstetricians and Gynecologists held at Indianapolis.

TYPHOID fever is very prevalent at Campbellford, Ont. The Secretary of the Provincial Board of Health has advised the passage of a by-law for a better system of sewerage disposal.

DR. N. E. FAREWELL, Cobourg, Ont., late house physician at the Toronto General Hospital, has been appointed resident physician on the staff of the Protestant Hospital, Ottawa.

IN response to the request of the Six Nations, the Provincial Board of Health has organized a Health Board for the Grand River Reserve.

DR. JOHN MCCRAE has been appointed to the research and teaching fellowship in pathology at McGill.

DR. H. B. ANDERSON has returned from a six months' sojourn in England.

Physicians' Library.

Progressive Medicine. Volume III. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, handsomely bound in cloth, 440 pages, 11 illustrations. Lea Brothers & Co., Philadelphia and New York.

The third volume of *Progressive Medicine* presents carefully prepared and exhaustive papers upon the following subjects: "Diseases of the Thorax and its Viscera, including the Heart, Lungs and Blood Vessels." By WILLIAM EWART, M.D., F.R.C.P., Physician and Joint Lecturer on Medicine, St. George's Hospital, London. "Diseases of the Skin." By HENRY W. STELWAGON, M.D., Clinical Professor of Diseases of the Skin, Jefferson Medical College, Philadelphia. "Diseases of the Nervous System." By WILLIAM G. SPILLER, M.D., Professor of Diseases of the Nervous System in the Philadelphia Polyclinic. "Obstetrics." By RICHARD C. NORRIS, M.D., Instructor in Obstetrics, University of Pennsylvania, Philadelphia. *Progressive Medicine* presents in an original, narrative form a full and clear statement of all practical advances made in every department of medicine and surgery during the year, each specially being dealt with by a single authority whose reputation gives ample assurance of accuracy and completeness. The personal impress of the contributor marks every page, the narratives present their data in due and instructive connection, enchaining the interest, economizing time yet giving ample and detailed consideration to all matters which are of interest in actual practice. The ready application of all recent advances in improvements, discoveries and methods thus becomes a portion of the mental equipment of the reader, prepared for instant use when emergency arises. The volumes are handsomely bound and abundantly illustrated in the best manner. At the subscription price *Progressive Medicine* undoubtedly offers the best investment available in medical literature.

A Treatise on Surgery by American Authors. Edited by ROSWELL PARK, M.D., Professor of Surgery in the University of Buffalo, N.Y. New condensed edition in one royal octavo volume of 1262 pages with 625 engravings and 37 full-page plates in colors and monochrome. Cloth, \$6.00, net; leather, \$7.00, net. Lea Brothers & Co., Philadelphia and New York.

Although it was reasonable to assume that a thoroughly modern treatise on surgery by the most experienced teachers and surgeons

of America would not fail of appreciation, the success achieved by this work has exceeded the most sanguine expectations. The great demand for the work in its two-volume form brought with it sufficient indications to warrant the belief that a somewhat condensed edition in a single volume and at a correspondingly lower price would add to its popularity. That two editions of a work should be simultaneously extant is a novelty worthy of comment. Practitioners and many students desiring the fuller information in the two-volume edition will naturally prefer it, but the condensed edition maintains the convenient division into general and special surgery and thus preserves the conformity of the work with the surgical courses rapidly becoming universal, and it will answer the needs of students as well as of those who desire a comprehensive and practical single-volume work on the subject. The reduction in price is proportionately much greater than the reduction in matter, and is an advantage which purchasers will appreciate, and one which has only been rendered possible by the exceedingly wide sale already achieved.

The Treatment of Pelvic Inflammations Through the Vagina. By WILLIAM R. PRYOR, M.D., Professor of Gynecology, New York Polyclinic; Consulting Surgeon, City Charity Hospital; Visiting Surgeon, St. Elizabeth Hospital, New York City. With 110 illustrations. Philadelphia: W. B. Saunders, 1899. Toronto: J. A. Carveth & Co., Canadian Agents. Price, \$2.00.

A timely and valuable little contribution for the general practitioner, who has neither the time nor the inclination for the reading of larger works on the same subject. The writer's well-known experience as a gynecologist will no doubt create a desire in many to familiarize themselves with the author's methods and technique in pelvic inflammations by vaginal section. The work is a special plea for the vaginal, over the abdominal route, in the operative treatment of these pelvic inflammations, and as such will be found both serviceable and valuable. The illustrations number over one hundred and are fully up to the times in that class of work; and the directions which accompany the several operations are clear, precise and readily comprehended.

The Hygiene of Transmissible Diseases: Their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D., Professor of Hygiene and Bacteriology and Director of the Laboratory of Hygiene, University of Pennsylvania. Octavo, 311 pages, illustrated. Philadelphia: W. B. Saunders. Canadian Agents, J. A. Carveth & Co., Toronto, Canada. Price, \$2.00.

This work, which is essentially a portion of the subject-matter of the author's lectures on "General Hygiene" at the University of

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Pennsylvania, will serve as a valuable adjunct to the student of preventive medicine; and the general practitioner will profit much by a perusal of its pages. We read with increasing interest the chapters on Typhoid Fever, Tuberculosis, Diseases due to Animal Parasites, Anthrax, Rabies, Bubonic Plague, which display the careful and polished diction of a graceful writer. Section III. Prophylaxis in General against Infectious Diseases, including vital, chemical and physical processes, the management of contagious diseases and quarantine, is worthy of more than a passing notice, and one will be amply repaid by a careful study of the whole section.

A Text-Book on Diseases of the Nose and Throat. By D. DRADEN KYLE, M.D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist and Otologist, St. Agnes' Hospital; Bacteriologist to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases; Fellow of the American Laryngological Association, etc. With 175 illustrations, 23 of them in colors. Philadelphia: W. B. Saunders. Toronto: J. A. Carveth & Co., Canadian Agents. Price, \$4.00.

This is a voluminous work on the subject of diseases of the nose and throat, but at the same time will be found that, while it embraces much matter, each disease and condition is treated of in a concise and practical manner. It is a work prepared more especially for the student and general practitioner than for the specialist in this branch of medicine and surgery; and as such will no doubt be met with considerable favor. In dealing with treatment the author is not by any means prolix, but concise and to the point, and in this will be found one of the merits of the book. The young practitioner will find this a profitable investment and a good addition to his nucleus.

Reprints Received

"Some Observations, mainly Clinical, upon the Uric Acid Diathesis." By ISAAC J. JONES, M.D., Austin, Texas.

"Some Remarks on Chronic Bright's Disease." By ARTHUR R. ELLIOTT, M.D., Chicago.

"Chronic Interstitial Nephritis, Treatment of the Heart Therein." By ARTHUR R. ELLIOTT, M.D., Chicago.