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Original Communications.

SOME CASES OF EXTRA- AND INTRA-PERITONEAL INFLAMMATION WITH AND WITHOUT ABSCESS FORMATION; A PLEA FOR THE OPERATIVE TREATMENT OF PERITONITIS.*

BY J. F. W. ROSS, M.D., C.M.

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Gentlemen,—I feel that this paper is very imperfect. It has been thrown together rather hastily, its only merit being its originality. I have not endeavored to pad it from the experience of others as culled from a library, but have made it practical. It includes many cases that bear on the subject of operative interference for cases of traumatic lesions in the neighborhood of the peritoneal cavity, still decried by many of the old school. It simply puts forth a few of my own convictions, to be accepted or rejected by you as you see fit.

No. 1.—While in general practice some five years ago, I was sent for by a gentleman to see his five-year-old daughter, who had been taken suddenly ill, with "pain in the stomach and vomiting." On reaching the house I learned that the child had fallen over the high end of the sofa on the preceding day. She had climbed up on the end, and, on account of her weight overbalancing it, it tipped up and she fell. She felt faint and sick at the time, but soon went on with her play in a half-hearted sort of way. I found her about fourteen hours after with a rapid pulse, knees drawn up, and complaining of severe pain over the

belly. The pain caused her to scream and cry out in a most distressing manner. Tympanitic distention soon set in. I treated the case as one of peritonitis, after the usual method of that time, but she gradually grew worse. For weeks she lay in this condition, hanging between life and death. Many consultations were held, and all agreed that the case was hopeless, though as a matter of policy we held out the barest possibility of a recovery. The father, who was very sanguine, would soon have dismissed any physician who gave no hope. The pulse at times could scarcely be counted. At last a dulness in the right lower portion of the abdomen could be distinctly mapped out, extending to the middle line. The tympanites was still very distressing, the body terribly emaciated, but the patient seemed possessed of enormous vitality. She had been blistered and poulticed very faithfully. Irritation of the bladder set in. The child seemed about to succumb to this last distress when pus suddenly appeared in the urine, and the bladder symptoms were, to some extent, relieved. Pus continued to come in this way for some weeks, but the abdominal symptoms improved. Tympanites disappeared, pulse became slower, and though the temperature still ran high, the patient gained strength. Convalescence was very slow, but the little girl is now the very picture of health.

No. 2.—N. R., æt. 9, a bright, healthy child, was out playing ball with some other children. The ball struck her in the abdomen, giving her pain at the time. Through the night she was seized with vomiting and pain in the belly. Her mother thought that she had perhaps eaten something that disagreed. I saw her the next day, and found her lying with her knees drawn up, abdomen distended, and retching violently. She was screaming out with pain. The usual treatment was adopted. Dr. H. H. Wright saw the case in consultation and agreed with my diagnosis of acute peritonitis. The temperature remained high, and the patient died in a few days.

No. 3.—A little boy was admitted into the Children's Hospital under my care. He had been playing "tip cat," with his companions, a most dangerous game, and the cat, a piece of wood with which all boys are familiar, struck him a violent blow in the right inguinal region. Symptoms of localized peritonitis came on; a large mass gradually developed over the seat of injury and gradu-

*Read before the Ont. Medical Association, June, 1890.

ally disappeared after many weeks. The pus was discovered in the urine or evacuations.

No. 4.—Mr. C., a painter, was visiting in the neighborhood of Woodstock. He was suddenly seized with severe pain in the right inguinal region accompanied by a chill. Opiates and purgatives were administered, but did not give relief. He came to the city and sent for me. I had attended his family and had often seen him. As he had a horror of lead colic he took the greatest care to prevent the entrance of lead into his system. He had some vague idea of having recently knocked his side. On carefully examining the abdomen I could feel a definite resistance in the right inguinal region. His temperature was high, tongue coated, face anxious and pulse accelerated. His condition did not improve. There was no difficulty in moving the bowels at this time and no vomiting. The feeling of definite resistance increased into a tumor, that could be made out. This was evidently deep and pressing inwards towards the abdominal cavity. His bowels became obstructed and vomiting set in. A consultation was asked for. I felt that unless some operation was done for the relief of the pressure on the bowels, the case would be fatal. They were people averse to any surgical interference and the young man was quite prepared to die. I urged operation, but the voice of the consultant overweighed mine, and the case was left alone. Today I would operate on such a case or have nothing more to do with it. He went on in this condition gradually dying of starvation. His was one of the most distressing deaths I have ever witnessed. When he became emaciated the lump could be more distinctly felt, now much increased in size. Unfortunately no *post mortem* could be obtained. The case was undoubtedly one of pericæcal abscess, pressing on and obstructing the bowel.

No. 5.—Mrs. T., a woman 60 years of age, sent for me. I found her suffering from the symptoms of acute peritonitis. Some few days previously she had done a very heavy washing in a very open and draughty shed. No history of injury or of any pelvic trouble. I knew her past history and knew that she had been a robust woman. Fearing expense she had deferred sending for me until the symptoms were well defined. The tympanites was very distressing. Volumes of gas

would belch up from time to time, but without giving relief. The pulse was very rapid and breathing labored and shallow. For about two weeks she lay between life and death, and then some improvement took place. The tympanites began to disappear, but the bowels remained obstinate. Unfortunately some zealous neighbor gave her a whole bottle (25 cent) of castor oil, and she was soon as ill as when first attacked. The tympanites returned and I expected momentarily to receive a telephone message, to say that she was dead. She convalesced very slowly, and remained a semi-invalid for fully twelve months after. No pus could be discovered in the urine or evacuations, or any tumor be felt. The cause of the attack could not be definitely made out.

No. 6. A very celebrated lacrosse player was throwing an over-hand shot with all his force when he felt a sudden pain in his abdomen. It did not last and was not severe. After retiring for the night a very intense pain seized him about two inches above the navel in the median line. He was in perfect health up to this date. I was sent for and found him writhing in agony. In spite of large doses of morphia the pain remained at times almost unbearable. It was paroxysmal but distinctly localized. The case was a puzzling one, and I tried to make a diagnosis by excluding other diseases. It had some features different to both hepatic and renal colic. No bowel symptoms supervened to point to intussusception or internal hernia or volvulus. The bowels moved freely. Typhoid fever could be excluded owing to the previous good health and history of sudden injury. The temperature was during the first week elevated about a degree. The pulse was normal, tongue was, however, from the first furred like the tongue of typhoid. A temporary improvement took place and the patient was so much better that I only visited him every second day. I was once more suddenly called one night to relieve his "awful pain." Had there not been a rise of temperature and the furred tongue, I should have looked on the symptoms as partially nervous. From this second attack, his pulse and temperature both rose higher. No enlargement was to be felt over the abdomen; suddenly the the urine was retained and the catheter was required to relieve the patient. I thought that this was partially due to the long use of the opiate.

But within 24 hours of the onset of this symptom mucus was frequently passed by the bowel, a sign of rectal irritation. I examined with the finger, as I had already done more than once in the former period of his illness, and now found a large fluctuating mass, pressing on the rectum behind and uterine in front. This was distinctly the cause of the retention of urine. I at once called a consultation; Dr. Grasset saw the case with me, and we determined to puncture through the rectum the next day, with the patient's consent. The abscess broke during the night and the patient was once more able to pass water without assistance. During his convalescence he had had a sharp attack of epididymitis on the left side. The convalescence was slow but he can now handle his lacrosse stick with the best. Was this an extra-peritoneal hæmatocele, with subsequent suppuration?

No 7. Miss A. G., æt 18, was in the second week of typhoid fever. A sudden severe pain was felt in the left hypochondriac region about its lower margin. I arrived within five or six minutes by accident, and at once concluded that perforation had taken place. She was collapsed. I ordered absolute quiet, on the back, and at once injected $\frac{1}{2}$ gr. morph. sulph. hypodermically. Stimulants were given by the rectum and the stomach kept empty. The primary retching ceased, and for weeks the patient lay in one condition hovering between life and death. The distention was very distressing. The opiate was given only hypodermically. About a week after the onset of the peritonitis she passed blood twice from the bowels. The bladder symptoms were distressing; convalescence was complete, and the patient has since become a mother without especial difficulty.

No 8. Miss L., aged seven years, was creeping under a low bedstead for a ball, and when turned on her back struck the abdomen against the sharp edge of the bedstead just to the right of the navel. A soreness continued and increased to an unbearable pain before night. I was sent for about 10 p.m., and found her crying with pain, knees drawn up, temperature elevated, pulse rapid and countenance anxious. There had been some sickness of the stomach. Being homœopathic in their belief, I treated her, as a leading chemist leads me to believe they would have done, by giving her a good full dose of morphia to relieve her pain. Slight

distention developed but never increased. A hardness could be felt around the neighborhood of the injury as soon as the sensibility to pressure of the hand was dulled by the opiate. She continued in this condition for about a week, the temperature and pulse then became normal, and the hardness gradually disappeared, so that she was up in about three weeks from date of injury. No darkness was noticeable beneath the skin to indicate a superficial effusion of blood, but I suspect that a sudden hæmorrhage occurred beneath the peritoneum, that is a periperitoneal hæmorrhage.

No. 9. The next case was one of a large extra-peritoneal hæmorrhage, occurring from rupture of the right kidney. Mr. K. was working in a saw mill, sawing a log, when a piece of wood about $1\frac{1}{2}$ inches square and 2 feet long, was thrown javelin-like from the rapidly revolving saw. It struck him just below the margin of the ribs, on the right side of the abdomen. He fell to the ground instantly, and was carried home in a collapsed condition. A large lump developed immediately, and he passed about a pint of blood and water from the bladder. The lump was as large as two fists, and filled the right lumbar region. Fluctuation could be made out. I concluded that the right kidney had been ruptured, and that a large extravasation of blood external to the peritoneum had caused the enlargement. For several days he lay in a desperate condition, but recovered some of his former vigor in a short time. For a year a year he was not robust, but when last seen by me had no complaint to make about his health. Albumen was found in the urine from the first until the last time examined, several months after the injury. The hæmatocele gradually disappeared without evidence of suppuration. Even with this large collection of blood in the cellular tissues there was nothing in the color of the skin to indicate its presence. Now, to summarize the foregoing cases and endeavor to draw some conclusions: In none of them was any operation undertaken. In two, death occurred. Might not these two have been saved by operative interference. I certainly believe that in the one case of obstruction of the bowels from abscess pressure, the life might have been saved. Operation could not have harmed the patient. In the other case, that of the little girl, the opening of an already inflamed peritoneum could not have increased such

intense inflammation, but the local depletion consequent upon the operation, and the relief of congestion produced by hot water, irrigation would have been beneficial. Another question that suggests itself is, "Are not many of these cases due to a traumatic hæmorrhage?" If not, why should such a great amount of hardness supervene in so short a time after the injury. We open the peritoneum, we cause a peritonitis by our operation, but we do not notice such brawny hardness unless we have hæmorrhage from needle puncture in applying sutures, or from some bleeding vessel left unsecured from some part of the wound. This blood burrows in the planes of the connective tissues and occasionally suppuration occurs. I have seen blood tumors form in this way, and, fortunately for the patient, rupture occurred through the wound after the commencement of suppuration and not into the peritoneum. Pure blood is undoubtedly harmless to the peritoneum.

It has always puzzled me to explain traumatic peritonitis in any other way. With this traumatism no germs are admitted so that there can be no septic element in the cases. If we exclude, according to present beliefs, the septic element as a causative factor in the peritonitis following operation, we will not have many cases left to classify. If the mere injury to the peritoneum produces peritonitis, we should have peritonitis after every abdominal section. We tear this formerly dreaded membrane, we cauterize it, we swab it with iron, we injure it with pressure forceps, and yet it escapes inflammation. My own belief is that more is to be dreaded from a stripping off of the peritoneum from the preperitoneal tissues, from which it receives its nourishment, than from any mechanical injury to it, and I believe that what is identical to this stripping off occurs in cases of direct traumatism, by the rupture of small vessels of the peritoneum and the neighboring connective tissue. Another lesson to be deduced from these cases is that there are many cases in which the symptoms are not severe enough to justify operation. This was the case in the post-peritoneal abscess. The patient made a good recovery without operation. But the case of encysted pus in the little girl might at first thought be placed in the same category. The issue was good, but cases in which pus finds its way through the bladder, do not all have such a

happy ending. Only two weeks ago I saw one in consultation, and in spite of operative treatment she died. If the abscess had been opened early, her life might have been spared. In such a case as that of the little girl, I should open the abdomen and drain. Then again, the old woman of 60 could not have been injured by opening her abdomen. By this method of treatment all doubt is dispelled, a perforating gall stone is found, a suppurating ovarian cyst is discovered, a perforated appendix brought to light, and the cause of the disease is at once removed, while the disease itself is having the very best treatment. It is only two weeks since I operated upon a case of peritonitis sent to me, unfortunately too late. Her temperature was 103 and pulse very rapid, but I thought it best to give her the one chance of saving her life by finding out the cause of the inflammation. Through the vagina nothing but a fulness binding down the uterus and ovaries, such as was formerly supposed to be due to that "will o' the wisp" pelvic cellulitis. On opening the abdomen I found the peritoneum thickened and studded with nodules of inflammation, similar to the nodules found in a case of tubercular peritonitis, I had just opened and drained half an hour before. The cavity of the peritoneum was filled with serous fluid. On the left side I found a suppurating ovarian cyst about the size of an orange, and a large suppurating hæmatocele of the broad ligament on the right side. The cyst was very adherent, and with difficulty removed; the hæmatocele was opened, washed out and drained through the abdomen. The patient almost died on the table, but rallied fairly well and lived for 10 hours. Under such circumstances one cannot wonder at the result. Pulse and temperature both dropped after the operation, but the temperature soon rose again and the patient died. How useless it would be in such a case to wait for a spontaneous cure? And yet how often it is done. I believe that it should be the rule of practice to open the abdomen in every case of acute peritonitis. I will relate two other cases to qualify my assertion.

Two years ago I removed a small ovarian cyst bound down by adhesions, and put in a glass drainage tube. The tube was removed within twelve hours, and the patient became suddenly worse. Acute peritonitis set in, temperature and pulse

rose rapidly and distention came on. I determined to re-insert the drainage tube, and, assisted by Dr. Temple, re-opened the abdomen and re-inserted the tube. As soon as the wound was re-opened a quantity of blood-tinged serum, gushed out. Within twelve hours the symptoms improved, and the patient made a splendid recovery.

The second case was one I saw while with Mr. Tait. A young woman with acute peritonitis; abdomen was opened, pus washed out. This pus had a decidedly faecal odor. The peritonitis was caused by extravasation of faecal matter into the abdominal cavity, but the case had been allowed to go on until the girl's abdomen was opened at a time when operation had no fair chance of being successful.

It is only ten days since another case was brought forcibly before me. Some four months ago I saw, in consultation with a brother practitioner, a lady patient of his, in whose abdomen he had discovered a small tumor to the left of the navel, on a line with the level of the tenth rib. The tumor was about the size of a hen's egg, and seemed to fluctuate. It gave her no particular inconvenience, and she would not listen to any proposal of operative interference. Some two weeks ago she was taken suddenly ill. Her physician telephoned to me, so that I might at once open the abdomen. Unfortunately, I was away from home for a few days. Another consultant, unfamiliar with abdominal surgery, was called, at the request of the family, and he advised that she be left alone. She was left alone, and died from an acute peritonitis in from three to four days. There can be no doubt from the description given me by her physician that the tumor ruptured, and that the contents, whatever they were, set up the fatal inflammation.

I might relate other cases of perforating gallstones, ruptured ovarian cyst, ruptured pyosalpinx, perforation of the vermiform appendix by orange seeds, etc. The actual cause of peritonitis in any given case is only to be guessed at, and cannot be ascertained without an intra-abdominal exploration. Such causes as "cold," "chill," are so indefinite that they should not receive any consideration, but the question asked should be, "Is this due to perforation of a gallstone, perforation from ulceration, hæmorrhage from injury, rupture of an

abscess, appendicitis, volvulus, internal hernia, strangulated or suppurating ovarian cyst, rupture of pyo-hydro- or hæmatosalpinx, rupture of ectopic gestation, to rupture of liver, spleen, kidney, or bladder, if due to injury?" And the only method by which the question can be accurately answered is by opening the abdomen.

Cases such as that of the large effusion of blood from rupture of the kidney, and that of the little boy playing with the "tibby cat," and the little girl injured by the bed, are better left alone, unless more severe symptoms supervene. Operation to stop hæmorrhage from a ruptured kidney by removing it, or by packing, might be done if the patient rallied and the hæmorrhage through the bladder continued. If suppuration set in, the clot should be cut down upon and turned out. The perforation accompanying typhoid fever, I fear will be better left alone. I quote the one case in which recovery took place without operation. There was no doubt a perforation. For two days before the patient had the usual symptom of approach of the ulcer to the peritoneum, namely, pain over the very spot at which the violent pain commenced two days later, accompanied by collapse and acute general peritonitis. I have not yet seen reported any case of recovery after abdominal section, done for the cure of peritonitis due to typhoid perforation. One other case of abdominal injury allowed to die without operation, comes vividly before me. A man was kicked in the abdomen by a horse. Symptoms of collapse at once set in. He rallied well, but a mixed set of symptoms set in. Vomiting occurred. It persisted, and was identical with that due to intestinal obstruction. The bowels moved. Hands and feet became cold, pulse rapid, and at the end of a week the patient died. I have always thought that he might have been relieved by an exploratory incision. Operation could have done no harm, and would, at least, have shed much light on the case. The exact nature of the injury would have been made out.

There are then a few conclusions that may be summarized. They are simply the outcome of my own thought, and may not have any value, but they are as follows:

1st.—That in typhoid-perforation operation is useless.

2nd.—That in traumatic general peritonitis,

and in all cases of general peritonitis, the abdomen should be opened, washed out and drained, and the cause of the peritonitis found and removed.

3rd.—That in cases of localized peritonitis, and in obscure cases of injury not followed by general peritonitis, it is better to follow an expectant plan of treatment, unless abscess formation can be made out.

4th.—That in all cases of abscess formation, opening and draining will give the most rapid convalescence, and will prevent unfavorable rupture into other parts.

5th.—That in view of the complications that may be found after opening the abdomen, the best interests of the patient will be consulted by having the operation done by some one accustomed to do abdominal surgery.

REPORT OF A CASE OF ACUTE SUPPURATION OF THE KNEE-JOINT, WITH COMPLETE RESTORATION OF FUNCTION.*

BY H. HOWITT, M.D., GUELPH, ONT.

Although it is now approaching two years since the case which is the subject of my paper was under treatment, yet I have reason to hope that some features of it may prove of interest to you.

Frank F., *æt.* 21, a farm laborer, while engaged with a companion cutting grass, on the 5th of July, 1888, accidentally received a blow from a scythe on the right knee, which inflicted a wound an inch and a half in length, extending backward from a little behind the lower part of the inner border of the patella. It ran parallel with, but was situated a line or two above, the upper margin of the internal semilunar cartilage, and in depth it could not have been extended without opening the synovial cavity.

Within an hour after the accident occurred a medical student carefully washed, sutured and dressed the wound. He also gave excellent advice as to the necessity of keeping the limb absolutely quiet, but failed to make this sure by applying a suitable splint. The result was that in less than three days the patient was again busy in the fields, and owing to the position of the injury the sutures cut through, the wound gaped and became

inflamed and painful. Notwithstanding this, and considerable swelling and stiffness of the part, he refused to quit work.

On the fifteenth day he had a rigor, followed by high fever and a sudden painful swelling of the articulation, which compelled him to remain in the house. For five days various domestic remedies were employed, and these having failed to afford any relief, a message was left at my office. On examination it was easily ascertained that the young man had acute suppurative synovitis. He had severe local pain, and marked constitutional disturbance. The limb was semi-flexed and rotated outward, the knee greatly distended, reddened and œdematous, the patella floating and the circumference of the joint fully three inches greater than normal.

The wound was inflamed, angry in appearance and presented a mass of granular tissue which protruded above the surface of the surrounding skin. From a minute sinus in it, serous pus oozed slowly drop by drop. Doubtless this acted as a safety valve, and prevented a rupture and escape of pus at a less favorable place. Forced flexion or extension of the leg aggravated the constant pain beyond endurance. Anorexia and insomnia were prominent symptoms. His evening temperature was $103\frac{1}{2}^{\circ}$ F., and night sweats and occasional delirium indicated septic intoxication.

Not being satisfied with his environment he was advised to go to the city hospital; he promised to do so, but for some reason failed to put in an appearance there before the 5th of August, or one month after the accident, and fifteen days after the onset of suppurative synovitis.

The whole leg had now become œdematous, and the contour of the limb so changed that it might easily lead one to suppose there was partial backward dislocation of the head of the tibia. Two weeks of acute suffering and high fever, with loss of sleep and appetite had told heavily on his constitution; to be brief, he was in a critical condition.

It was difficult at first to decide what line of treatment to follow, and what object to have in view as to result. According to the teaching laid down in the text books of the day, amputation was a question to be considered, but the knowledge that a poor uneducated farm laborer with

*Read before the Ont. Medical Association, June, 1890.

an artificial limb and without friends, would have up hill work to avoid the poor-house, made me decide to accept considerable risk in order to save the limb. Knowing the wonderful results which attend thorough and complete washing and drainage in some of the suppurative troubles of the peritoneal cavity, I determined to treat the knee in harmony with the principles advocated for such cases.

The synovial sac was certainly in a septic condition, nevertheless the greatest care was taken in preparing everything likely to come in contact with the limb during the operation. A large fountain tank, having a half inch rubber attachment of sufficient length and a suitable nozzle, was placed in readiness for use.

When the patient was anaesthetized the small sinus referred to above was dilated so as to admit my fore-finger, and then a free incision was made into the outer side of the knee. From these considerable watery pus with flakes of lymph and pieces of membrane escaped; and on inserting my finger several large pieces of membrane were found, either free or caught in the folds of the synovial membrane. All the articular surface accessible to the finger had deposited on it a peculiar putty-like substance which made it feel rough to the touch. It was with difficulty removed with the finger and douche.

The nozzle of the fountain apparatus fitted pretty accurately the dilated sinus, and by placing it in position and turning on the water, a constant stream could be maintained through the joint, while the finger by a scraping movement cleaned the walls. Closing the outer opening around the base of the inserted finger while the water was running caused the cavity to become distended. When thus distended the various recesses of the articulation were rendered easy of access; not even excepting that under the tendon of the quadriceps. Alternately flexing and extending the leg during distention was also of service in loosening *debris*.

Upward of an hour was spent with finger and douche before the water came away clear. Until it did so hot water alone was used, but afterward the joint was several times filled and flushed with a 1 to 4000 mercuric solution, in all more than five gallons of fluid passed through the articulation.

A short rubber drainage tube, merely long

enough to reach to the cavity, was placed in each wound, two or three sutures inserted and then a posterior splint and moist mercuric dressings completed the operation.

He slept soundly that night and awoke next morning without either pain or fever, and, while he remained under observation, his temperature never rose again above 99° F. His appetite returned and he gained rapidly in weight and strength. The drainage tubes were not required after the first twenty-four hours.

In two weeks the patient was on his feet and able to walk by the aid of a cane, and in another fortnight, contrary to my advice, he returned to his work on the farm, where, that fall, besides doing other laborious work, he ploughed fully twenty-five acres of land. Except a feeling of weakness and a little stiffness in the knee, for a short time after he left the hospital, he had no inconvenience from it. At the present time all the movements of the important joint are capable of being easily and perfectly performed, and in fact, when we overlook the cicatrices there is not anything abnormal to be detected.

Correspondence.

To the Editor of the CANADA LANCET.

SIR,—In this month's issue of the LANCET you publish a diet table for Diabetics taken from the *St. Louis Med. Herald*. My experience with diabetic patients for some years past, as a manufacturer of Gluten Flour and Hygienic Foods, has enabled me to see the injurious effects of some of the articles of diet recommended in that list. I refer particularly to acid fruits, especially apples. In three particular cases, apples proved very injurious and counteracted the good effects of a diet of gluten flour and other foods in which the starch had been converted into dextrine. In one case, the free use of apple cider was the cause of the diabetic trouble. It is customary for physicians to copy such diet lists for their patients, and, knowing the injury of apples in nearly all cases, I deem it necessary to draw your attention to the facts that have come under my observation. Another important point is that I have known infants and persons under twenty-five years of age who have been absolutely cured of diabetes,

while persons above thirty could have the trouble greatly diminished, but never to the extent that they could eat all kinds of food.

Yours truly, F. C. IRELAND.

Toronto, April 6th, 1891.

Reports of Societies.

GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY OF BALTIMORE.

FEBRUARY MEETING.

The President, Dr. Henry M. Wilson, in the chair.

Dr. Neale reported the following case of "Occlusion of the os uteri during four days parturition."

Mrs. K. W., æt. 26 years, white, 1 para. Past history unimportant. Last menstruation early part of April, 1890. Pregnancy, normal up to Nov. 1st, 1890, when she slipped and fell violently on her right side on the pavement. There was no vaginal discharge at the time and no discomfort except from the jar, bruising, etc., and the patient was up and about all the time. No movement of the child was felt after the fall.

About Christmas, 1890, an offensive, yellowish, vaginal (uterine) discharge occurred, and continued for one week.

On the night of January 12th, 1891, her first labor pains began, and were so severe as to require morphine to be given by her attendant. There was no show or discharge of any kind. The pains increased and the patient was suffering severely when I saw her for the first time Friday evening, January 16th, 1891. She was a large, well-built and well-nourished woman. Could not distinctly map out the child by abdominal palpation. By auscultation gurgling over the entire uterine tumor, and not a trace of fetal heart sounds could be heard.

By vaginal examination: Very short and small vagina, no cervix and no os! A continuous layer of mucous membrane, flush with the vaginal walls, closed over the entire vault of the vagina, and a little dimple in its centre was the only indication of where the os ought to be.

Patient chloroformed, placed in position, hand passed into vagina, finger pressed against the

dimple when it suddenly yielded or burst open like a membranous web, permitting a gush of *not* foul-smelling bloody water to escape, and at once the rapidly enlarging outlines of the os could be felt, then about as wide as a silver half-dollar piece. The soft bagging scalp and loose cranial bones came down upon the enlarging os, and as the expulsive efforts were, almost *nil*, I grasped the head with a Simpson's cranioclast which tore away, and then the blades of a Tarnier basiotribe were adjusted over the head and neck, and a thoroughly macerated, but not decomposed or foul, small child was easily extracted. Perineum intact; os fissured slightly. Small placenta expressed within six minutes. Considerable postpartum hæmorrhage, uterus acting feebly. Os remained open about size of silver half-dollar piece, thick edges, uterus rather small, but not firmly retracted. Two quarts of a hot intra-uterine 1-4000 bichloride douche were injected. Patient rallied well, and, debarring an occasional slight rise of pulse and temperature and faintly fetid lochia, which readily yielded to the antiseptic douche, the puerperum was uneventful and recovery complete. This case was a novel one to me. I am quite sure the membrane I felt was mucous and not the amniotic sac, nor do I think the case should be classed among those of cervical occlusion or stenosis from endotroachelitis.

Dr. J. Whitridge Williams read a paper on "The Induction of Premature Labor in Contracted Pelvis." He pointed out that the comparative neglect of the operation in this country was due to two causes, the absence of large lying-in institutions and the consequent lack of large amounts of clinical material, and the almost total neglect of pelvic measurement.

By the term premature induction of labor, we understand the artificial interruption of pregnancy at such a period that a viable child may be born; that is, any period from the 28th to 30th week to the end of pregnancy.

Dr. W. then went into the history of the operation and showed that it was first rationally employed for this indication in England, as the result of a conference of the eminent physicians of London, in the year 1756.

Within fifty years it was quite generally employed on the Continent, and even enjoyed a popularity which caused it to be resorted to on the most trifling pretexts, and which in 1869 called forth Spiegelberg's forcible denunciation of the operation, by which he showed that the mortality, both of the mothers and children, was nearly

three times greater after the operation, than if the woman went on to term. This was soon followed by articles by Litzmann and Dohrn, who showed that Spiegelberg had painted the picture in colors far too dark.

Litzmann showed that in moderate degrees of contraction, 8.25 to 7.5 cm. ($3\frac{1}{4}$ to 3 in.), the operation was indicated in the interests of the mother, as shown by a mortality of 7.4 per cent. after the operation, compared with one of 18.7 per cent. when the woman was allowed to go on to term.

Dohrn stated that the proper method of appreciating what the operation accomplished was not to compare so many cases of induced labor with so many cases of labor at term, but to compare the results of premature and spontaneous labors in the same woman; by this method he found that twice as many children were saved by inducing labor as by allowing the woman to go on to term.

Consequently they proved that the operation was indicated in properly selected cases, both in the interests of the mother and child.

The introduction of antiseptic methods into midwifery almost completely robbed the operation of danger for the mother, as will be readily seen from the following statistics. Thus, Haidlen reports 44 cases from the Stuttgart clinic, with no maternal deaths and 72 per cent. of the children saved.

In 1889, Korn stated that Leopold lost one woman in 45 cases and saved 66 per cent. of the children, and last July Ahlfeld stated that he had induced labor 118 times with the loss of only one mother, and had saved 62 per cent. of the children. At the Berlin Congress, Fehling stated that in 60 cases he had saved all the mothers and 80 per cent. of the children.

From the above sketch we will readily see that the maternal mortality in properly selected cases is very slight; 401 cases collected by Korn showing a maternal mortality of only 2.9 per cent., or just a trifle more than normal labor in a normal pelvis, while the foetal mortality ranges from 20 to 70 per cent., the average being about $33\frac{1}{2}$ per cent.

So in this operation we have a means of saving about two-thirds of the children, without any risk to the mother. Or, reckoning by Dohrn's method, we save at least twice as many children as if we allowed the woman to go on to term, and then resorted to some conservative operation.

These are the prospects of the operation, but unfortunately the degree of contraction within which the operation is justifiable is very limited, and one can only think of it in moderate degree of contraction. According to Litzmann, in flattened pelvis with a conjugata vera of 7.5 to 8.25 cm. (3 to 3.25 in.); and to Schroeder, 6.5 to 9.5 cm. (2.5 to 3.75 in.).

As pelvis with a conjugata vera above $8\frac{1}{2}$ cm.

($3\frac{3}{8}$ in.) offer a reasonable chance to both child and mother at term, and those below 7 cm. ($2\frac{7}{8}$ in.) offer no chance to the child, I think that the operation should be restricted to these limits; that is, between 7 to $8\frac{1}{2}$ cm. ($2\frac{7}{8}$ to $3\frac{3}{8}$ in.) in simple flattened pelvis.

In the juxta-minor pelvis a conjugata of $9\frac{1}{2}$ cm. ($3\frac{7}{8}$ in.) or less will usually be an indication for the operation. In the rare forms of obliquely narrowed pelvis, whatever its cause, we must be guided almost entirely by the history of previous labors.

We thus have the operation restricted to a very small range, $1\frac{1}{2}$ cm. ($\frac{5}{8}$ in.), which should only be exceeded when the previous history tells us that the previous labors have all ended disastrously. We should not think of inducing labor in a flattened pelvis with a conjugata below 7 cm. ($2\frac{7}{8}$ in.), for in that case the prospects for the child are almost nil and the dangers to the mother greatly increased. Here we come to the relative indication for Cæsarian section, when it is best to allow the woman to go on to term, and attempt to save both mother and child by that operation.

With these contracted indications, we readily see that an accurate idea as to the exact size and form of the pelvis is an absolute prerequisite for the performance of the operation; and the only means by which we can accurately obtain this information is by carefully measuring the pelvis.

We should not content ourselves with simply measuring the conjugata vera; but should also take the external measurements and thereby attempt to determine with what form of pelvis we have to deal. After doing that, we must carefully examine the interior of the pelvis, to determine its height; to see if it is generally contracted, and if contracted, if the contraction increases as we approach the outlet. We must look for exostosis of the pelvic bones, and carefully examine the promontory to see if it is double or not.

If we think the pelvis contracted laterally, we should measure the distance between the tubera ischiorum on each side, as Breisky recommended. We should also attempt to estimate the transverse diameter of the pelvis, which is most difficult to do, and the most that can be expected is to examine alternately with each hand and try to stroke the linea innominata and so relatively to get some idea as to the transverse diameter.

Having decided that an operation is necessary, the next question is, when shall it be done? Of course the younger the foetus, the smaller will be its size, and consequently the easier its delivery. But unfortunately, the smaller the foetus, the less chance will it have of living, even if it survive the operation. Generally speaking, we say a child is viable after the 28th week, but its chances of living are almost nil; indeed, children 30 to 32 weeks old have next to no chance of living. The later

the operation, the more chance has the fœtus of living after it; but unfortunately its size and consequently the difficulty of its delivery, increase with its age. If possible, the operation should be done about the 34th to 36th week, our object being to operate at the latest possible period consistent with safe delivery.

To fulfil this object, we must attempt to gain an accurate knowledge as to the size of the child's head. Unfortunately we are unable to determine its size with mathematical precision, or even with the relative precision of pelvimetry; so we are obliged to take advantage of every possible hint on the subject. Some of the following points may be of assistance in different cases. We must consider the mother's account as to the duration of the pregnancy. Notice the size of the parents, large parents usually having large children. Inquire about the previous labors, particularly as to the size of the head. Endeavor to estimate the size of the head by abdominal and combined abdominal and vaginal palpation; and note the consistency and amount of resistance to compression that the bones of the head offer.

Try to measure the head with the pelvimeter through the abdominal walls, and deduct the estimated thickness of the abdominal walls from the result. Notice the size of the large anterior fontanelle, average with 2 cm.; the width of the sutures, and the distance from the anterior to the posterior fontanelle; for as they are larger or smaller, it indicates a larger or smaller head. Measure the length of the fœtus as it lies in utero, from breech to vortex, double the measurement and it gives, according to Ahlfeld, the length of the fœtus. If a foot is prolapsed, measure it, for Goenner stated that there is a difference of nearly one centimeter between the length of the foot of a child at term and one at 32 to 34 weeks.

One of the most important methods is that of Mueller, who attempts to force the head down into the pelvis by pressure from above. As long as he is able to force the head down, he knows that labor will readily take place, but when he can no longer force the head down and when it bulges out over the symphysis, then he considers that the time for operation has arrived. As the great danger to the mother is from sepsis, one cannot be too careful in one's efforts to guard against it, and consequently one should be most particular in one's preparation for the operation.

For several days previous to operating, the woman should have a warm bath daily, and several times a day be douched with warm water—95° to 98° F.—containing salt or borax, by which the cervix is softened and dilated. Just before operating, the genitals should be most carefully washed with hot water and soap, followed by a 1 to 1000 bichloride solution; the vagina should be most carefully cleansed. The hands of the operator

should be washed for at least ten minutes in hot water and the nail-brush vigorously used, after which they should be placed for several minutes in a 1 to 5000 bichloride solution.

All instruments should be sterilized by steam, or placed in a 5 per cent. solution of carbolic acid for at least thirty minutes.

The most generally approved method is that of Krause, or the introduction of a disinfected flexible bougie between the membranes and the uterine wall. If properly conducted, it is almost entirely devoid of danger for the mother, and will bring about the birth of the child in a period varying from 8 to 214 hours, averaging about 80 hours—or about three days. To insert the bougie, the woman is placed on her back or side as may be most convenient, and the cervix brought down by a pair of bullet forceps and the cervical canal carefully cleansed with bichloride on a pledget of cotton; the bougie is then carefully inserted so that its lower end is within the vagina, care being taken not to wound the membranes or the placenta. Then the vagina is packed with iodoform gauze, care being taken not to wound the cervix, which serves to hold the bougie in place. If at the end of twenty-four hours no labor pains have been produced, the bougie should be removed and another introduced at another point under the same precautions as the first.

If this method fail we may resort to Kiwisch's method, of allowing a current of hot water, 100° to 110° F., to flow through the vagina several times a day for a period of five to fifteen minutes. Or we may puncture the membrane as accessory to these, we may loosen the membranes about their lower pole; tampon the vagina with iodoform gauze, or employ Barnes' bags.

If the pains are weak, Fehling recommends version by Hicks' method and bringing down one leg, whereby increased contraction is produced and one is afforded a ready means of ending the labor if one deems it expedient in the interests of the mother or child.

Dr. Neale:—I regard the chief point in this very able paper to be the endeavor to definitely fix the limits for the induction of premature labor in contracted pelvis, not as opposed to Cæsarian section, but as applicable to a distinct and separate class of cases. This endeavor I strongly advocate, but at the same time must confess that I do not believe the plan is always practicable at the bed-side. There are so many factors entering into the determination of this question, as I stated in my paper, that I can now only repeat what I have quoted, viz., "A given pelvic measurement is useful as an indication of what has been the experience of others under similar circumstances, but is not a final ground for decision."

After the evidence adduced, which doubtless represents the opinion of the best medical authori-

ties, I am sure I only voice the concurrence of this Society in accepting the limits for this operation as stated by Dr. Williams. This is practically in accordance with the teachings of Lusk—probably our strongest American authority—who places the range for the induction of premature labor in contracted pelves at a conjugata vera of from 2½ inches (7 cm.) to 3½ inches (8.75 cm.).

As stated in the paper, I believe the most reliable statistics of this operation are those of Dohrn, who compares the results of induction of premature labor with those of labor at term in the same case, showing a very decided advantage in premature labor. It must be remembered, however, as Litzmann has clearly shown, that children born alive by this operation are far more likely to die early than matured children. The risk to the child does not cease with its delivery.

I cannot recall any reference in the paper to pelves contracted from hip-joint disease, and yet I have met with two obstetrical cases of this character during the past two years in this city; both were in private practice and both were primiparæ. The first case I saw in consultation, during a very severe labor at term, and delivered her of a still-born child by a difficult high (Tarnier) forceps operation. Premature labor was induced on the second case at the eighth month. In this case the bougie was retained under antiseptic precautions (2 per cent. creoline cervical and vaginal douche and iodoform gauze over os), between the membranes and uterine walls, for forty-eight hours without effect. It was then withdrawn, the douche again administered, and bougie re-introduced in a different position and retained for twenty-four hours again without effect. The sac was then punctured high up by the probe, and labor began in about fifteen hours. Thus we see the method of Krause, although the best, may fail, where puncture of the sac will not. As this lady was poisoned to death by an unclean servant who dressed and picked carious bone from her foot and then attended my patient, and handled all her linen, napkins, etc., without my knowledge, it shows the importance of extending our antiseptic precautions to everything coming in personal contact with the case.

As regards the method of delivery, the experiments of Budin and others speak strongly in favor of version and extraction, as opposed to forceps.

Dr. Kelly:—The subject is too large to be discussed formally; I will merely refer to one or two points of interest. A serious complaint is to be entered against the records of foreigners in regard to the statistics of infant mortality after premature labor. Many observers only state whether the child was born living or dead, some few state whether or not it was living when discharged from the hospital. What we want to know for practical purposes, is, whether the children live

any time after they get home. My own experience is but few live. If they are sent out simply to die soon after at home, the induction of premature labor among the poorer classes simply becomes a species of uterine gymnastics.

A method of my own which I have found most successful in inducing premature labor, is taking a flexible whalebone bougie, introducing it between the membranes and the uterine wall, high up into the uterus, and sweeping it gently around for one or two inches in either direction. This has not failed me in any instance in bringing on labor:

Selected Articles.

THE EARLY STAGES OF MELANCHOLIA.

The term melancholia, as applied merely to a mental state, carries with it its own diagnosis. In its more special application, denoting a distinct mental disorder—a disease with a symptomatology of its own, running a variable course, but with a tendency to self-limitation, and of prognosis, usually favorable, the term must be used with greater regard for precision than the majority of general practitioners have been accustomed to apply it. States of mental depression may include more than simple melancholia, and hence, for present purposes, the chief interest in the diagnosis centres in the differentiating of a purely functional disorder from distinct phases of degenerative psychoses, or from the early stages of organic brain disease. Friends and physicians alike do not rest satisfied with a diagnosis which does not carry with it something of prognosis. This leads to certain considerations with reference to etiology, to which we may refer briefly later on.

There is perhaps no disease of the mind which is so often insidious in its onset, so deceptive to inexperienced observers in its course and gravity, so sudden in its occasional tragic and undreamed-of culminations. Mental elation, usually beginning in harmless loquacity or in mere effervescence of spirits, is unable to conceal itself, but the melancholic may, possibly from motives of consideration for friends, nurse in silence morbid fears and fancies or dangerous impulses long before the real truth is suspected. Hence the necessity for prompt recognition of this dangerous malady and for decisive and prompt treatment. It is stated by a writer of authority that "homicidal acts are not to be feared in simple melancholia unless in persons of bad character and ugly temper, or in those few cases with the symptoms in addition of moral insanity or impulsive insanity." I believe that this is dangerous doctrine, and whether the patient is to be treated at home or in an institution, the friends should be warned of the possibility of some sudden violent act. The

mind of the melancholiac is a sealed book to the outsider, and no one can safely ignore the possible existence of concealed impulses. If I were to formulate a caution, I should say never put implicit trust in the word of one suffering from acute melancholia, however intelligent or morally upright he or she may have been. I have known of a mother deliberately smothering her babe in bed by her side under the influence of a religious delusion. I knew an intelligent, religious and thoroughly honest woman to hang herself in the presence of a room full of sleeping companions, where she had begged to be permitted to remain in preference to returning to the customary night ward; and all the time that she was giving to the physician assurances that she had no thought of self-destruction, and that she had a full appreciation of the wickedness of such an act, she had in her possession the skein of yarn with which she strangled herself a few hours later. I knew, also, a gentleman of education suffering from depression without delusions, a man scrupulously honest in his dealings with others, to yield to his impulses while enjoying parole to procure morphine and swallow it with suicidal intent. Such instances are included in the experience of every asylum physician.

The homicidal impulses occurring in connection with melancholia of alcoholic origin are especially apt to be of sudden onset, and are said to differ from those of simple melancholia in being more unconscious. In them the patient seems to lose his identity and to drift along like an automaton. A very good illustrative case is the following:—A young man of dissolute habits, who for some six months previous to the assault had been unnaturally moody and taciturn, a state which his friends attributed to the use of alcohol, one evening quietly entered the sitting-room of a hotel, where he stood for a few minutes with no apparent object in mind. Suddenly, without warning, he stole up behind an occupant of a chair and plunged a knife into the latter's neck. Dropping the weapon he ran to the river, into which he plunged without hesitation. He was rescued and taken immediately to jail, where he slept soundly all night. He had previously been on good terms with his victim, and no possible motive for the crime could be conjectured. Upon his recovery, nearly a year later, he was able to recall vividly every incident of the assault. He asserted that he seemed to have, himself, no initiative in the act. A peculiar sense of buoyancy possessed him; he seemed, as he expressed it, as light as a feather, and to be borne along by some irresistible power outside of himself, which guided the blow. He threw himself into the river, not from remorse, nor with any realization of his crime, but with the same influence behind him, and a feeling of lightness which gave him full confidence that he would float on the water.

Simple melancholia develops slowly. The accustomed vigor gives place to a disinclination to return to daily duties; the patient tires easily, and sooner or later loses his powers of application; but there is not the sudden letting down of all the mental faculties, the total or partial abolition of memory, the confusion of ideas, the loss of sense of locality that marks the onset of organic dementia. The sufferer from melancholia complains of all of these, but in the midst of his confusion he is able to assert himself, and usually he is inclined to exaggerate the extent of his helplessness. Many cases display no delusions—indeed, none are present. To wait for their appearance before pronouncing the patient insane is in many cases to incur great risk. Their presence or absence is more or less dependent upon the previous mental habit and training of the patient, and is not a test of perverted mental action. The intelligent man who is unable to lift himself out of the depression that swamps his energies may be as much out of harmony with his normal state as the one who ascribes such lethargy to the administration of poison by fancied enemies. Usually, however, there are vague fears, and often a distressing sense of impending evil.

It is important to distinguish between the early stages of melancholia and that form of mental depression which marks but one phase of a psychosis whose tendency is to chronicity, usually distinctly circular in type. Melancholia occurring at about the age of puberty should be regarded with suspicion, especially so if there is a history of previous elation. Occasionally the depressed stage comes first. The diagnosis is then even more difficult, and should be made with reservation. Usually, I think, the depression in circular insanity is more stuporous in form from the start, and, even when profound, not apt to give evidence of the presence of definite delusions. Such patients are apt to show an inherited neuropathic taint; as children they are often precocious, frequently self-willed and vain, and usually ambitious. They are peculiar and in a persistent state of unstable mental and moral equilibrium.

One or two illustrative cases will help to make clear some of these points. A young girl on returning from a sleigh-ride one evening seemed much fatigued, and on the succeeding morning looked dull and talked incoherently. This latter condition soon passed away, but for six months following she was restless, and occasionally made threats of suicide if not permitted to leave home. When brought to the asylum she was listless and inclined to lie on the sofa; was unable to frame satisfactory replies to questions, and ate only in response to urging. This proved to be but one phase of a chronic disorder marked by alternating periods of elation and depression. Another patient was committed to the asylum in a state of

quarrelsome elation, but for some time preceding this he had what his friend called "stupid spells," during which he would stand for hours at a time in a condition of insensibility to external impressions.

The early stages of parietic dementia occasionally exhibit a striking likeness to melancholia, as witness the following cases:—A male, age forty, suddenly became low spirited and emotional, apprehensive of injury and filled with unreasonable forebodings. He was particularly fearful of his house being blown up, and of himself and other members of his family burning. He was obliged to discontinue work, and steadily grew more and more depressed, eventually becoming extremely feeble physically. There was an admission of drink, but excess was denied. Bad hygienic surroundings in his shop and overwork were assigned as the cause of his trouble. He was brought to the asylum three months after the first appearance of depression. His pupils were then in a state of unequal contraction; speech was altered and gait incoördinate, both of which latter conditions were possibly attributable at that time to his feeble state. So far as regards the mental symptoms, he presented on admission nothing different from an ordinary case of melancholia with active delusions of persecution, but, in addition to the changes in his pupils, speech and gait, mentioned above, there was noticed a lack of facial expression, and his bladder required catheterization. This man so far improved as to be removed by his friends six months after his admission. There were then no delusions, a slight mental weakness being the only noticeable feature. Three months later he was returned in a state of elation, with parietic symptoms well developed.

In a second patient, whose habits were good, the trouble was attributed to long hours and overwork. He became suddenly sleepless and unable to apply himself to work; developed the delusion that he had committed some great crime, and that his children were to starve, and talked of suicide. Pin-hole pupils were obtrusively apparent, and the knee-jerk could not be elicited; but with these exceptions there was nothing to suggest anything but an ordinary case of melancholia, with agitation. Subsequently there was retention of urine. Some weeks later, when he had become able to compose a letter, his handwriting showed unmistakable ataxia, though there was none present in the grosser movements of the upper extremities, nor in speech nor gait. Once he had an attack of profuse pyalism, and on several occasions critical sweats. In a little less than seven months this patient was removed by his friends, free from delusions, cheerful, but without suspicion or elation, and, so far as outward experiences indicated, restored to health. So his friends considered him, and so he himself thought. The former were

warned of the fears entertained by the asylum officers, and were instructed to regulate his life accordingly. He remained away eight months, returning with every evidence of paresis, and in a state of extreme optimism, out of which delusions of grandeur soon developed. Further details of the history are unnecessary here.

The third case occurred in a man who bore a good family and personal history. For six months preceding his admission he had lain in bed giving evidence of profound mental depression, and complaining of rheumatic pains when taken to task for his inactivity. On admission his pupils were insensitive to variations in light, though responding promptly to changes in accommodative efforts. He displayed an exaggerated knee reflex and a slight tremor of speech. Extravagant ideas did not obtrude themselves until four months following his reception at the asylum. To-day he presents all the typical features of parietic dementia.

We have gone into these cases somewhat in detail, extending the recital of their symptoms beyond the early manifestations of the mental derangement, merely to make more vivid the true character of the trouble, and to discover, if possible, some guide to differential diagnosis. In none of these cases was there any history of inherited neuropathic taint. So far as could be learned they were free from vicious excesses. All had been regarded by their family physicians as uncomplicated cases of melancholia, and their friends had been encouraged to expect a cure. The last one had endured the opprobrium attaching to a diagnosis of hypochondria. An examination a little more careful than certifying physicians are likely to find time to make was sufficient to determine a suspicion of organic dementia, which suspicion brief observation confirmed. As regards the purely mental phenomena exhibited by such cases, I know of no feature which would exclude a diagnosis of a purely functional disorder, and which might not occur in some one of a series of cases of melancholia. As to the physical aspects there are several points worthy of notice.

While an indifference to calls to empty the bladder is a by no means infrequent accompaniment of mental hebetude, a retention of urine to the point of actual stretching of the organ is not so common, and should occasion suspicion of paralysis of the viscus depending upon central causes. An examination for changes in the reflexes, or of the visual field, with possibly a resort to the ophthalmoscope, may render it possible to make a more certain diagnosis. For the sake of scientific accuracy, as well as for the credit of the physician himself, such cases should not be pronounced simple melancholia, and friends should not be deluded into false hopes of eventual recovery.

There is another class of cases dependent upon

organic disease where the prognosis is unfavorable and the diagnosis even more easily made. I refer to cases of melancholia associated with structural disorder of some other organ or organs, as, for instance, Bright's disease, with or without apparent vascular changes.

A clergyman who, partly by reason of certain native eccentricities of character, partly by reason of ill-health, had been forced to relinquish a number of successive charges had become discouraged and despondent. He withdrew to his family, where for a year preceding commitment to the asylum he lived a life of misery, which involved all members of the household. Despondency deepened into gloom, out of which delusions of a personal character gradually took shape. He became haunted with the idea of neglected duty. He became hypochondriacal, and occasionally had attacks of emotional disturbance. A train of dyspeptic disorders was attributed to mental causes, and the invalid never received the full meed of charity to which a knowledge of the existence of an organic disease would have entitled him. On his admission a somewhat hopeful prognosis was offered, which was later modified on the discovery of albumin and granular casts in his urine. The patient lived only four months longer, during which his sufferings were of the most miserable character, his delusions increasing in number and becoming reinforced by all forms of hallucinations. Death came in uræmic coma.

No cases are more exhausting to the physician's resources, or more taxing to his patience than those of mental depression depending upon hypochondriacal fancies. We are regaled with all sorts of subjective symptoms, possible and impossible, ill-defined or well described, within limits determined only by the patient's knowledge of his anatomy or his converseance with medical terms. It is hard to entertain sympathy with such, and the difficulties surrounding a satisfactory coping with their symptoms render it easy to do the patients injustice. I believe that it is the feeling among alienists that as individual experience with such cases accumulates, persistent hypochondria of an exclusively mental origin is rare. Again and again we see such cases developing, sooner or later, evidences of organic disorders of a character likely to impair brain nutrition. The depression of spirits, the often exasperating lack of fortitude, the childish displays of petulance, are not infrequently, I think, due to lack of inhibition depending upon starving or poisoned brain cells. In the absence of a clear history of excesses, structural disease of some one or more of the nutritive or excretory organs should be excluded in making a diagnosis.—E. A. Christian, M. D., in *Physician and Surgeon*. •

NOTES ON THE PATHOLOGY OF PELVIC INFLAMMATIONS.

While the knowledge of the pathology of pelvic inflammation has greatly advanced in recent times, there is still a wide diversity of opinion among authorities regarding its causation, and the relative frequency with which the several organs and tissues become involved.

This difference of opinion results from a difference in the methods of observation. Some have drawn their conclusions from clinical histories and from physical signs obtained by manual and instrumental exploration; others have made deductions from post-mortem examination; while quite recently a number have based their opinions upon the observations which they have made after abdominal section. To reach the facts requires prolonged and oft-repeated observation from all these points of view. One of the difficulties encountered in the observation, and one which has led to many differences of opinion in regard to the pathology, is that pelvic inflammations seldom come singly. Many of them come together, and so complicate one another that it is impossible to ascertain anything definite regarding the lesions, although investigated in every possible way.

It simplifies the subject and gives more definite results to consider separately the pathology of each form of inflammation which has been found to occur, and then to consider the groups which they naturally and actually form.

I. *Pelvic Cellulitis*.—This was at one time regarded as the most frequent of pelvic inflammations, but recent observations show that it does not take first rank in this respect. Extremists have hinted that it is very rare, and that when it does exist it is secondary to peritonitis, or salpingitis. As a matter of fact, it occurs independently of either of these inflammations, and in this respect may be considered a distinct and primary affection. It is generally caused by sepsis, or by gonorrhœal infection derived from the vagina or cervix uteri, and transmitted to the cellular tissue through the blood vessels or lymphatics; or by contusions of the cellular tissues which cause extravasation and necrosis without any apparent extrinsic infection. These conditions are especially operative in the puerperal state but may be due to injuries received during surgical operations. Another known cause, although a very rare one, is the rupture of a vessel in the cellular tissue—a pelvic apoplexy. This does not necessarily cause inflammation of a distinctive character, and only does so, perhaps, when the blood is in a morbid state. These are the causes of primary cellulitis.

The course pursued by the inflammation is the same as in cellular tissue generally. It may end

in resolution or in suppuration, the size and location of the abscess depending upon the extent of tissue involved. Pus is almost always discharged through the vagina, occasionally through the abdominal wall, rarely through the bladder or rectum. In a few cases the pus has burrowed outward and upward to the sheath of the psoas muscle. If the abscess opens at its most dependent part evacuation and drainage are complete, and recovery is sometimes so perfect that not a trace of the former disease can be found upon examination either during life or after death. This fact has been used as an argument to prove that a cellulitis did not exist.

This is not the invariable history of cellulitis. Suppuration may continue indefinitely, because the evacuation is incomplete and the drainage imperfect, owing either to the location of the opening in the abscess, or to the fact that there is a large mass of inflammatory products honeycombed with small abscesses. In some cases the abscess wall is very thick and is a long time in disappearing after the sac has closed. This leaves a solid mass in the cellular tissue and some fixation of the uterus. This condition is called chronic cellulitis by some, but it bears the same relation to inflammation as do ashes and charred timbers in a building to an extinct fire. Most of the extreme modern pathologists diagnose this condition as tubal, ovarian, or peritoneal inflammation.

II. *Pelvic Peritonitis*.—This occurs as a distinct affection. Its presence alone has been recognized clinically and abundantly demonstrated post-mortem.

The cause of primary peritonitis is sepsis conveyed through the lymphatics which run directly from the vagina and cervix uteri to the pelvic peritoneum. In this respect the causes of pelvic cellulitis and peritonitis are somewhat alike. When there are superficial abrasions of the mucous membrane, the septic material in the vagina or cervix causes peritonitis, while deeper injuries, like lacerations, are prone to eventuate in cellulitis. This is only a possible explanation of well-known facts.

Among the causes of pelvic peritonitis are:

1. Certain constitutional conditions which predispose inflammation of serous membranes, the most notable of which are advanced renal disease and tuberculosis.

2. Rupture of the Graafian follicle, presumably having morbid contents.

3. Exposure and excesses.

The relative importance of these is not well established. The fact, however, is known, that inflammation of the pelvic peritoneum and the pleura occur as primary affections when the cause cannot be definitely discovered. Perhaps some pathological state of the blood may be responsible

for the predisposition, and some unnoticed slight traumatism may be the excitant.

Secondary pelvic peritonitis will be referred to later. Pelvic peritonitis may be circumscribed or may involve the whole pelvic peritoneum. In the primary form the process, as a rule, ends with transudation and exudation, and rarely does suppuration occur, unless the cause is sepsis of a virulent character, or tuberculosis. If suppuration occurs, or if there is a large serous transudation, the pus or serum accumulates in the sac of Douglas, and is walled in, if the case does not end fatally, by an exudate which bridges over the sac of Douglas. If the walling-in is complete and protects the subject from fatal septicæmia, the pus is discharged through the rectum in all or the great majority of cases, unless evacuated by the surgeon. Adhesions take place where the inflamed surfaces meet. In mild cases these are generally limited to the abdominal ends of the tubes and their nearest neighbours, and to the most dependent parts of the peritoneum. Recovery follows, but is slow in all cases, and is seldom complete. The structures are more or less damaged by the exudate and adhesions, according to the extent of the disease, and in time the exudate and even the adhesions may be taken care of by absorption. The products of this inflammation have in the past been mistaken for the results of pelvic cellulitis. While they usually cause pain and discomfort and impair the functions of the pelvic organs, they do not tend to a fatal result, and generally yield to prolonged treatment.

III. *Salpingitis*.—This form of inflammation seldom occurs alone. Primary cases are due to tuberculosis, a hæmorrhage or occlusion of both ends of the tube. In the latter condition, the natural secretions accumulate and cause a limited inflammatory process. In the great majority of cases salpingitis is caused by endometritis, either catarrhal or septic. It is sometimes found to exist in the absence of all the other forms of pelvic inflammations which we have considered.

When caused by catarrhal endometritis, salpingitis ends either in recovery or in hydrosalpinx, which may in time excite pelvic peritonitis, or it may, by discharging into the uterus, end in recovery, but leave a more or less damaged tube. Again, it may remain and give trouble until the tube is removed by the surgeon.

When the cause is septic or specific, pyosalpinx usually results. This leads to other and serious complications and has no tendency to recovery, except when after repeated attacks or a single violent one of peritonitis the diseased tube is walled-in above, and, by disintegration of the opposing tissues below, it opens into the rectum or into the cellular tissue, and then finds an exit through the vagina or other pelvic viscera. This

does not always terminate the disease. Prolonged suppuration and septicæmia may cause a fatal termination.

IV. *Inflammation of the Ovaries.*—This occurs in a variety of forms, but there are only two which present distinct clinical histories: (a) The acute, which ends in suppuration, and (b) the degenerative or so-called chronic ovaritis.

(a) *Acute ovaritis.* Acute ovaritis is, as a rule, a secondary affection. The causes are puerperal and specific inflammations and neoplasms, and degenerative disease of the ovaries.

Ovarian abscesses found in connection with puerperal metro-peritonitis are familiar examples of the former, and suppurating ovarian cysts illustrate the latter. The termination of ovarian abscess is in death; at least that is the tendency—the abscess rupturing and causing fatal shock or peritonitis. The exceptions to this are when relief is given by the surgeon, before or at the time of rupture, and when the ovaritis sets up peritonitis before rupture and the ovary becomes walled up in the sac of Douglas. The abscess may also discharge through some of the pelvic viscera or be reached through the vagina or by abdominal section.

The important point to be observed in the pathology with reference to treatment is that there is a difference between these cases in which the diseased ovary is lodged in the sac of Douglas and walled-in by protecting exudate, and those that are not so guarded. This difference should determine whether the interference of the surgeon is to be immediate or delayed.

(b) *Chronic ovaritis.* This is characterized by histological changes rather than by the development of the products of ordinary inflammation, and is a very common affection. It has been claimed that it is caused by endometritis, the assertion being based upon the similarity of structure of the endometrium and the ovarian tissue and the fact that endometritis and this form of ovaritis coexist. Much might be said on this point, but time only permits me to add that this method of causation is not proven. As nearly as can be ascertained the cause is malnutrition, giving rise to certain degenerative changes, which in their pathological histology bear a much closer resemblance to hepatitis and nephritis than to the products of inflammation in connective tissues and in serous and mucous membranes. The ovary is peculiar in this, that each performance of its function entails a certain irreparable destruction of a portion of its tissue. It is an organ that is continually degenerating during its functional activity, and hence it is difficult to find the line of demarcation between the physiological destruction of tissue and the pathological changes which occur from inflammation—difficult, I should say, to all but those who have a pro-

clivity to remove ovaries. Surgeons of that tendency find evidences of disease with a facility which startles skilled pathologists. Ovaritis of this form, in an ovary that is not displaced, does not tend to fatal results, and hence does not call for ovariectomy. In many cases the degenerative changes in structure lead to atrophy, arrest of function, and the disappearance of all symptoms. Such atrophied ovaries are supposed to be the site of neuralgic pain, which is so violent and persistent as to call for extirpation. This is not invariably the condition which causes pelvic pain, if we may judge from the fact that removal of degenerated ovaries does not always give relief.

Any of the inflammations here referred to may lead to one or to all the others—that is, the one, instead of running its course alone and uncomplicated, may excite secondary inflammation in any of the other organs or tissues. But either of them may occur alone, and they may all occur in succession, and even coexist.

Cellulitis often leads to secondary peritonitis, while peritoneal inflammation rarely extends to the cellular tissue. When such an extension occurs it is usually from burrowing of pus that has become walled-in, forming an abscess in the sac of Douglas. This takes place late in the progress of the disease and is sometimes considered a recurrence or relapse of the peritonitis. Along with the acute symptoms, which are lighted up by the burrowing of pus, come the physical signs of the cellulitis. When suppuration takes place in the cellular tissue it is often diffused and does not present a well defined pus sac as in primary cellulitis.

Peritonitis frequently damages the ovaries and outer end of the tubes, but it is seldom that a general inflammation of either is caused by peritonitis. When all of these coexist, inflammation of the tubes and ovaries occurs first, as a rule.

Looking at the subject as a whole, there are a few well-defined facts. The first of these is, that no matter where inflammation begins or what parts it involves, if the process gives rise to the formation of pus, the pus must be removed by the surgeon either through the vagina or by laparotomy in the majority of cases. Still another fact worthy of mention is, that in case the inflammation subsides before suppuration occurs, the resultant lesions are rarely improved by operative surgery—they do best upon general treatment.

By way of making more clear the foregoing statements in regard to the pathology, a word may be said about the lesions which remain or which may develop after laparotomy. The adhesions which surround a tube filled with pus and need to be broken up or divided in order to remove the tube, reunite, and more adhesions

form. This is inevitable and must be tolerated ; but when a laparotomy is done for the purpose of diagnosis or to remove an inflamed organ which is presumed to be offending, the lesions are seldom improved, and the suffering is not rendered less bearable to the patient.—A. C. J. Skene, M.D., in *Med. News*.

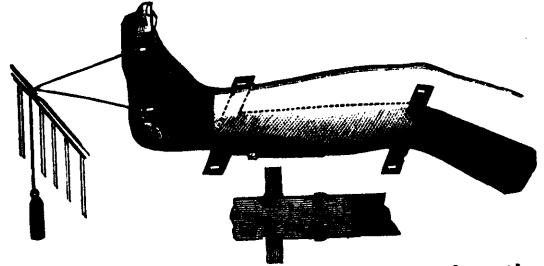
ON A METHOD OF APPLYING WEIGHT EXTENSION IN THE TREATMENT OF OBLIQUE FRACTURES OF THE TIBIA.

That oblique fractures of the tibia often present great difficulties in treatment is, I think, a proposition which no one will deny ; and few will maintain that the methods of treatment in ordinary use are satisfactory in bad cases. To prevent the upper fragment of the tibia riding over the lower extension is necessary in some cases, and three forms have been used :—(1) Extension by means of screw attached to a movable foot-piece ; (2) extension by means of elastic bands ; (3) weight extension. Undoubtedly of these the equable steady traction of a weight has the greatest advantage, both mechanically and physiologically. Hitherto the great difficulty in using weight extension has been the absence of a satisfactory method of applying it to the leg. Messrs. Arnold and Sons have made, at my request, a splint which, I think, meets all requirements, and I have used it in several difficult oblique fractures with excellent results—results which are as good as those obtained in ordinary transverse fractures. The splint, as shown in the engraving, is similar to a Neville's back splint, but has a sliding foot-piece. The "purchase" for the extension is got from a padded leathern "spat" which is laced on to the foot. In applying the splint the spat is placed behind the heel, and the foot and leg are fixed in the usual manner, care, however, being taken that the bandage does not interfere with the free play of the foot-piece. The spat is then laced up, the splint swung from a cradle, and side-splints applied. Next, a weight of from 4 lb. to 8 lb. is attached to the spat by means of a cord and pulley. In the engraving the cord is seen to be attached to two pairs of rings, but in practice it will be found better to attach it only to the lower or posterior pair as then the line of traction is directly in the line of the long axis of the limb, and so the heel is kept down against the foot-piece and the fragments are made to drop into good position.

To illustrate the above I will quote one case in which I used this method while senior house surgeon at St. Bartholomew's Hospital.

W. B—, aged forty-two, was admitted into the Harley ward, under the care of Mr. Willett, on Aug. 11th, 1890, suffering from compound fracture of the left leg. The tibia was very

obliquely fractured about its middle third, and the sharp end of the upper fragment was protruding about $1\frac{1}{2}$ in. through the skin. Attempts at reduction under an anæsthetic failed until the tip of the upper fragment had been sawn off. The wound was irrigated with corrosive sublimate lotion (1 in 2000) and dressed with sal alembroth gauze and wool, and the leg put up on a Neville's splint and side splints, and swung from a cradle. No constitutional disturbance followed, and the leg was not interfered with for fourteen days, when on the removal of the dressings the wound was found to have nearly healed, but the position



of the fragments was far from good ; in fact, the upper overlapped the lower by an inch, and it was not found possible to keep them in good position without extension. The splint above described was then applied with a weight of 8 lb., and the fragments came into good position within twenty-four hours. The weight was reduced to 4 lb. twelve days later. On Sept. 11th the fracture was found to be united in excellent position, and the wound healed, so a Croft's plaster splint was applied. The patient left the hospital three days later.

From the above and several subsequent cases of simple oblique fracture treated in this way I have every confidence that weight extension used with a splint such as I have described may be found useful in cases where other splints fail.—Holden, in *Lancet*.

ON PHYSIOLOGICAL TEACHING AND EXAMINATION.

The British system of examining medical students is still young and still capable of much improvement. In a previous issue we discussed the anatomical side of medical education. It is worth while to consider also the question of physiology.

It is no secret that a very large number of students—in fact, a good many more than half of the total number—are referred once at least in physiology. Nor is it in the least doubtful that the average pass man honors physiology with a larger share of his hatred than anatomy. Now this seems both strange and unfortunate. It is a pity that a study than which nothing can

be more interesting should fail to interest, and it is strange that a subject which affords so good a scope to all the little reason we possess should be less easily mastered than anatomy, which is to ordinary students a mere exercise of memory.

The causes of this state of things lie partly in the subject and partly in the way it is taught. Though physiology is undoubtedly interesting, it is as certainly intricate and difficult beyond the common run. There is hardly a single part of it in which principles almost fundamental do not lie open to revision. Each year brings a refutation of theories which have been honoured for a lifetime, and those who have sat under an original and inquiring lecturer know well the scorn with which he regards the crystallized opinion of an author, or possibly even of an examiner. There is also hardly a part of it in which it is possible to pursue a train of reasoning more than a little way without coming to an unknown point which bars further progress. Instances of the first difficulty will start at once into the memory. As an instance of the second, take the question of capillary resistance. It is unknown whether capillaries can actively contract or no, yet it is impossible to grasp the mechanism of the circulation without this knowledge, and opposed pathological theories are actually founded and maintained upon pure assumptions, either negative or positive, as to this unsettled point.

Another stumbling-block to the student is the immense mass of detail which he is expected to learn. What in the world is the use, even to an oculist, of knowing the various layers of the retina? Their turn may come, but at present they are a superfluity. Or what can a gynecologist do with polar bodies? We have heard an examiner asking questions the practical bearing of which was remote, while failing to give any attention to physiological facts of the first importance.

There is no doubt that in this matter the examiners are to blame. Not only students, but their teachers, who are in a position to know, feel that they are liable to be asked minute details, both in histology and physiology. The result is that students cram this useless knowledge to the exclusion of the broader principles, till they cannot see the wood for the trees, and demonstrators, on whom falls the burden of preparing men for the examination, feel that they have to pack an infinity of small facts into their heads, lest the examiner should ask them something they do not know.

As at present carried on, our educational system is substituting the demonstration for the lecture. Lectures should deal with principles; demonstrations with the facts on which these are founded. There is a danger of insisting so much on students knowing the facts that they leave the principles

unheeded. There is very little that is sure in physiology; there is a good deal that is probable; there is an immense mass of what is hardly more than ingenious conjecture. Of the first two classes, not by any means all bears upon the practice of medicine. Now, in a subject which, like physiology, possesses all the elements of education, engaging both observation and inference, there is no reason for requiring useless or uncertain learning, and, if no reason, then no excuse. If examiners would restrict themselves to what is both certain and useful, the education of the student would be far more satisfactory, and we venture to say the practice of the doctor would be every whit as sound.—*Br. Med. Jour.*

THE REGULATION OF PROSTITUTION.

This is a subject that has been very widely discussed and written upon in Europe during the last few months. The French have taken it up in connection with the question of the depopulation of France. At the International Medical Congress Dr. Thiry (*Le Mercredi Med.*, August 20, and *N. Y. Med. Jour.*) of Brussels, read a paper on this subject, in which he states that prostitution, whether desirable or not, is a necessary evil; and that, if it were possible to suppress it, society would be afflicted by libertinism. Inspection is the sole way to protect prostitutes and those that use them from disease. In certain countries it is ignored, on the fallacious theory that it antagonizes liberty and the dignity of women. Another error is to regard prostitution as a crime. He considered that the regulation of prostitution is necessary to restrain the propagation of venereal and syphilitic diseases. Prostitution that attracts attention by the frequenting of streets, being the most powerful cause of propagating venereal diseases, should be forbidden, and it should be confined to registered houses, with frequent sanitary visits.

Dr. Kaposi said that in Vienna each prostitute receives a book containing a description and photograph of herself, and a copy of the laws relating to prostitution. No one under sixteen can be registered, nor persons afflicted with organic or constitutional disease. Sanitary examinations are made twice a week, all diseased women are put into hospitals, primary syphilitic cases are quarantined for three months, and kept under treatment for two years. Clandestine prostitutes are treated in the same way by their own physicians.

Dr. Nesser had examined 572 prostitutes in Breslau, and found the gonococcus in 216 patients.

Dr. Felix of Bucharest, Dr. Drysdale of London, Dr. Heinzinger of Groningen, and Dr. Crocq of Brussels, opposed Thiry's conclusions, particu-

larly the limitation of prostitution to a few public houses. Felix held that in the future we should instruct, without false modesty, the pupils of higher classes in colleges regarding the dangers to which they were exposed, and instruct them primarily on the various prophylactic measures. The criticism was made that this desideratum was possible, but would not "professor of coitus" be a veritable innovation for the end of the century?

In France, M. Commenge recently stated, at a meeting of the Academy of Medicine of Paris, that he had collected the statistics of the number of diseased prostitutes found in the decade from 1878 to 1887: First, among women registered by houses or cards; second, among those women that—though registered—were the objects of more or less frequent arrests, and constituted a special class under the name of *femmes du depot*; third and lastly, among the uninspected, or women that lived by clandestine prostitution. The result obtained, based on nearly a million visits, showed the number of cases of syphilis in each thousand examined to be respectively 3.1, 2.7 and 23.9. Of other venereal diseases 3.0, 2.5 and 14.5.

The crusade against the Contagious Diseases Act in England results in what would have been expected. From 30 to 40% of troops quartered in garrison towns, were on the sick list with venereal diseases, while during the enforcement of the law the proportion so affected was very small.

It is only by accumulation of such statistics that the fanatical sentiment against the regulation of prostitution can be overcome, and the health of innocent women and children protected.—*Boston Med. and Surg. Jour.*

ERYSIPELAS.

In your issue of the 21st ult. I noticed an article entitled "Pirogoff on Treatment of Erysipelas," in which is recommended the internal administration of camphor. Among other things he says: "Of all internal remedies camphor is the most efficacious."

I have never employed this remedy internally in this disease, but for the past few years have regarded it as a reliable, if not *specific*, therapeutic agent in its local treatment.

Since beginning its use I have constantly employed it in all cases of facial or simple cutaneous erysipelas with the most gratifying results. I usually employ a saturated solution of camphor and tannin in sulph. ether:

- R.—Acid tannic gr. xlv.
- Camphor ʒiiss.
- Etheris sulph. ʒij.

M.—Sig. Apply by means of a camel's hair pencil every three or four hours, until a white, impervious coat is formed

After this I apply it at sufficient intervals only, to keep this coating intact until the disease is completely under control, which is evidenced by a return of temperature to normal, arrest of its progress, and disappearance of the œdema of the affected parts.

If these cases are seen early, before the involvement of much integument, and the development of much constitutional disturbance, a few applications *invariably* cut short the disease. If much constitutional disturbance has already developed, as is often the case, before we are called, I usually administer aconite internally, and mild cathartics if constipation exists. If there is much anæmia, I sometimes follow this with the tinct. ferri chloridi.

I have been able to control the disease in *all* of my cases thus treated in from one to six days, according to the severity of the attack, and extent of the local-inflammatory trouble, and I have always regarded the local application the principal (and often the only) agent in bringing about this speedy resolution. I have had the opportunity to test this local treatment in but one case of *erysipelas neonatorum* which developed in a child within a few hours after its birth, and seen by me within a few hours after its commencement.

It had already involved the whole of the face and scalp when I, in a state of hopeless despair, directed the paint to be applied every three hours, and made an appointment for the following morning. Upon my arrival I found head still almost twice its normal size, eyes tightly closed from the œdema, great constitutional disturbance, and erysipelatous inflammation extended down, involving the whole of the neck. Continued same application, and, upon the third day, disease was under control and patient discharged convalescent.

I look upon the remedy as almost a *specific* in this disease, and with the happy results of past experience, shall, with increasing confidence, investigate the merits of the claims of that distinguished surgeon.—W. H. Nuding, M.D., in *Times and Reg.*

FRENCH NOTES.

The various treatments of tinea tonsurans employed at the St. Louis Hospital:

- I. *Treatment of Bazin.*—1. Epilation of the patches.
- 2. Lotions of sublimate, 4 to 1000.
- 3. The use of a parasiticide pomade of acetate of copper, of sulphur, or of turpeth mineral.

II. *Treatment of M. Vidal.*—This treatment forms the basis of the medications the most used at the St. Louis Hospital since 1888, when Vidal and Marfan demonstrated that the trichophyton

is a parasite found in the atmosphere, and that the principle of occlusion is one of the best means of destroying this growth.

1. Frictions with the essence of turpentine and applications of tincture of iodine on the diseased surfaces.

2. The application over the head of vaseline and iodine (4 to 100), then a bonnet of caoutchouc, or a leaf of gutta-percha.

III. *Treatment of Ernest Besnier.*—1. Keep the hair shaved during the duration of the treatment; epilation of a zone of 6 to 8 millimeters around the patches; remove, by means of a curette, all the broken hairs and diseased products accumulated around the patches.

2. Daily washing with tar soap, with salicylic acid or with sulphur.

3. Cover all the patches with emplastrum vigo.

IV. *Treatment of M. Hallopeau.*—1. Wash the scalp each morning with black soap; then, after having wiped dry, rub with the following solution:

R—Camphorated alcohol, 3 ivss.
Essence of turpentine, 3 vj.
Ammonia liquid, 3 j.

2. Twelve hours later apply vaseline with iodine, 1 to 100.

3. Cover the head with caoutchouc for an entire day; apply the vaseline and iodine at night.

4. Shave the hair each week.

V. *Treatment of Unna (of Hamburg).*—1. Apply over the entire scalp the following pomade:

R—Salicylic acid, grs. xxx.
Chrysarobine, grs. lxxv.
Ichthyol, grs. lxxv.
Simple ointment, 3 iij.

2. Cover the head with an impermeable bonnet, which should be partially removed during four days for a new coating of pomade.

3. At the end of four days remove the chrysarobine pomade, and for three days friction with a pomade of ichthyol (5 per cent.).

4. Re-commence the following week a new period of seven days, and continue in the same manner until a cure results, which will take one month.

VI. *Treatment of M. Quinquand.*—1. Cut the hair very short with scissors, soap the head each morning with warm water, then rub with the following lotion:

R—Binioidide of mercury, grs. ijss.
Bichloride of mercury, grs. xv.

rub in mortar and dissolve with

R—Alcohol at 90°, 3 x.
Distilled water, 3 viij.

2. If necessary, the use of a curette; then, after using the lotion, the following may be applied:

R—Binioidide of mercury, grs. ijss.
Bichloride of mercury, grs. xv.
Emplastrum, 3 viij.

3. At the end of forty-eight hours, remove the plaster; soap the head; rub with the above lotion; renew the plaster, and thus continue until a cure is effected.

M. Quinquand has successfully employed the following pomade instead of the plaster:

R—Vaseline, 3 iij.
Chrysophanic acid, grs. xxx.
Salicylic acid, grs. xxx.
Boric acid, grs. xxx.

—*La Tribune Médicale—Times and Reg.*

THE COLD BATH TREATMENT IN TYPHOID FEVER.

—Mr. F. F. Hare, M.B., resident medical officer of Brisbane Hospital, Queensland, contributes to the *Practitioner* a very well ordered study of the effects of cold baths in the treatment of typhoid fever. The number of cases dealt with is surprisingly large, and affords every opportunity for arriving at reliable statistical results. Thus a contrast is made between the cases treated during the sixteen months, August 1st, 1888, to Dec. 31st, 1886, on the "expectant plan," and those from Jan. 1st, 1887, to Dec. 31st, 1889, when the bath treatment was thoroughly carried out according to Brand's directions. The gross result was an improvement in mortality amounting nearly to 50 per cent. Thus on the expectant plan there were treated 568 cases, deaths 85, mortality 14.50; under the bath treatment 1173 cases, deaths 92, mortality 7.84. Dr. Hare points out certain fallacies which are likely to arise in every such inquiry, particularly those due to a too liberal extension of the term "typhoid," and those to the varying severity of the disease at different periods; and then discusses the special value of the treatment, the success of which is proportionate to its commencement early in the disease. He shows that the liability to intestinal perforation and hæmorrhage is unaffected, so that no reduction in the general mortality below 5 per cent. (the rate due to these accidents) can be expected. The greater liability of males to these complications gives a vastly better prognosis under the bath treatment to female cases; but at the same time he points out that in moderating the diarrhœa and sustaining the vital powers the patient is better able to resist the effects of hæmorrhage and "other not necessarily fatal intestinal conditions." Lastly, he affirms the position assumed by former advocates of the measure as to its chief effect in reducing mortality, for he says: "The vast bulk of the reduction in mortality is due to the prevention of those complications and modes of death which, which being more or less common to the febrile state, however induced, have been termed pyrexial. Thus (a) fatal pneumonia has been less than one-fourth as frequent, this being chiefly

due to the rarity of the bronchial form; (b) brain complications have been less fatal and brain symptoms (delirium, stupor, etc.) enormously reduced in frequency; while (c) it is no exaggeration to say that simple cardiac failure would have been practically expunged from the list had all the cases admitted come under treatment during the first week of the disease.—*Lancet*.

DURATION OF PREGNANCY.—Oliver concludes, after very careful observation, that the duration of pregnancy in the human female varies as much as it does in the case of many of the lower animals. Issmer, reckoning only cases in which the fœtus was well developed, asserts that the duration ranges from 260 to 304 days. But Oliver believes there must be some error in this statement. If we reckon from the last menstruation, we must be careful to ascertain the exact date of the cessation of this, for it will be remarked that where the duration of the discharge varies little, the woman, when asked, is more likely to give the date of the beginning than the date of cessation of the last menstruation, and in this way mistakes may arise in our calculation to the extent of four or more days. The majority of authors are agreed that in reckoning the duration of pregnancy in woman, we ought to fix the probable date of delivery on the 278th day from the cessation of the last menstruation. He is of opinion that the best results will be obtained by ascertaining, first, the date of the cessation of the last menstruation, and then the usual duration of the inter-menstrual period in each given case; the number of inter-menstrual days should then be divided by two, and it will be found that the 260th day from the middle of the inter-menstrual period will most probably be the date of confinement.—*Liverpool Medico-Chirurg. Journal*.

TREATMENT OF CONVULSIONS IN CHILDREN.—In a paper published in the *La Médecine Moderne*, December 18, 1890, the author calls attention briefly to the usual advice of at once removing the clothes of the child affected with convulsions before giving it a warm mustard bath, with cold applications to the head. The seizure is very apt to come from the digestive tube, and thus production of vomiting by tickling the soft palate, or the administration of an emetic may be of service, or a full dose of calomel or of castor oil may be administered. It should also be remembered that perhaps an intestinal parasite may be the starting-point of the convulsion, and that a vermifuge may be indicated. When there is cerebral hyperemia the application of leeches behind the ears may arrest the convulsion, or in very vigorous children bleeding may even be practised with success. Mustard plasters may be perhaps of value applied

to the lower extremities, or even the compression of the carotids, as recommended by Trousseau. Inhalations of chloroform may produce relief, but it will be usually only transient, and a repetition of its employment is not without danger. Bromide of potassium combined with chloral is especially reliable when the convulsions are obstinate, $7\frac{1}{2}$ to 15 grains may be given to young children, 30 to 60 grains to children a little older, and 60 to 90 grains to children approaching adolescence. To new-born children the dose of chloral should only be $\frac{3}{4}$ of a grain; to nursing infants 2 grains; 3 to 5 grains to children of two years of age, and 6 to 13 grains to children between seven and twelve years of age. When the convulsion has been subdued it would be well to continue the use of the bromides, prescribing bathing the head with cold water, general friction, lukewarm baths, and a strict regulation of diet. With this may also be combined small doses of calomel and the valerianate of oxide and zinc.—*Therap. Gaz.*

THE ATMOSPHERIC TRACTOR—A SUBSTITUTE FOR THE FORCEPS.—Dr. P. McCahey, of Philadelphia, by invitation, was to have demonstrated on the manikin the use of the atmospheric tractor, but the manikin at hand was not suitable for this purpose, and he therefore showed the instrument, a kind of cup with handle made of thick, soft rubber, showed its tractile power on the head of the dead baby, spoke of its uses, and compared it with the forceps. The tractor which he exhibited covered an area of about five square inches, and exerted a force, when applied to a wet surface like the head of the newly-born, of from twenty-five to thirty-two pounds, or over one-third of the atmospheric pressure, which is fifteen pounds to the square inch. He claimed that the instrument could be applied with facility, furnished a sufficient amount of force to extract the child, was positively harmless, and could be used with perfect safety in both normal and abnormal labors. In normal labor it was employed to shorten suffering. Of course the os must be dilated to a size as great or greater than that of the tractor. The speaker had employed the instrument in about twelve cases, and had delivered in from five to twenty-five minutes, where nature would probably have required two hours or more.

With the tractor one could direct the head through the canal as might be desired, and one of its chief advantages was in prevention of rupture of the perineum. All objections to the instrument had been offered on theoretical grounds, and had not held in practice.

None of the gentlemen present who discussed the use of the tractor had had experience with it, but all seemed pretty generally of the opinion that it would be useful after the head had entered the pelvic canal, and in preventing rupture of the

perineum, but that it could not be applied at an earlier stage, especially in primiparæ, or, if it could, that it would not exert sufficient force to take the place of the forceps where this instrument had generally been indicated.

In closing the discussion Dr. McCahey extolled the tractor as a means of lessening the pain of labor, claimed that the objections offered during the evening did not hold in practice, that the tractor could be applied at any stage when the os was sufficiently dilated, and while not asserting that it could entirely take the place of the forceps, yet expressed the belief that it would do so in many cases where these instruments had been used in the past, and not infrequently had caused injury to child or mother.—*Med. Rec.*

RAPID CURE FOR TONSILITIS.—In the year 1872, a German woman, twenty-five or thirty years of age, was seized with a painful sore throat, or quinsy. She came to me for relief. Being poor and obliged to do her own house-work, she trembled at the prospect of a long disability. She was given fully two-thirds of a grain of morphine, with ten drops of Norwood's tincture of veratrum viride, which was taken on going to bed.

Knowing our text-books furnished no remedy or plan of treatment that would arrest the course of inflamed tonsils, and taught no way to prevent suppuration thereof, you can judge of my surprise the next morning, after breakfast, to see the patient well and up about her house-work. She was cured, and had no further treatment.

Some months or a year thereafter a robust coloured man, a porter on the Pulman cars, was seized with a sore throat, at Ogden. His run on the Central Pacific railroad from thence to his home in Oakland took two days. I saw him on the morning of the third day. He had fever, a flushed face, with tonsils swollen and painful, as usual.

He was put upon the following prescription, the directions being fully carried out :

Tinct. veratrum vir. . . .	30 drops.
Sulphate morphine	1½ grains.
Distilled water	6 drachms.

Of this one teaspoonful was to be taken every two or three hours, as needed.

This is five drops of veratrum and a quarter-grain of morphine in a teaspoonful of water as one dose. [Rather heroic treatment.—Ed.] The next morning the patient was found to be up and dressed; he had had his breakfast and was smoking his cigar, his throat being entirely well. This to my great delight was a confirmation of the preceding case, described above.

Since then I have seen no case of pure tonsillitis that has not yielded at once to the above

treatment in the same brief time—that is, from eight to twelve hours, and the patient is an invalid but one day after the beginning of the treatment.

If there is any meaning in the common word "cure," that meaning centers in these two words, viz., veratrum and morphine for tonsillitis.

How it is with other medical men I know not, but for me, in a practice of half a century, I know of no drug or drugs which have the power to control inflammation equal to these agents. They harmonize well together. The liability of nausea to follow the use of either of them alone is greatly modified by their combination. Hence there is reason to believe they exert therapeutic powers, when in conjunction, that are absent or lost when used separately.

The last case of quinsy the writer had to manage lasted five or six days. But the subject insisted upon being treated while attending to business. She was medicated at night, and what relief that period brought was lost during the day while she was teaching music. At last, seeing she could not get well on her feet, she lay by for twenty-four hours, took the medicine, and fully recovered without the formation of abscess.—*Kansas City Index.*

TREATMENT OF CHOREA BY SALICYLATE OF SODIUM.—Dresch considers chorea as a microbic infectious disease; and, working from this idea, he has treated the affection for the past six years with salicylate of sodium, which in his hands he asserts has given better results than the classic treatment. The salicylate produces sedation by acting upon the gray central matter of the bulb and medulla. It calms choreic movements in the same way as it quiets the pains of rheumatism; moreover, from its soluble properties, it has the advantage of eliminating organic waste-products, and of preventing the auto-intoxications which they can engender. It is necessary to employ it from the appearance of the first symptoms, and to give it in fractional doses in a slightly alkaline solution for a period of eight to ten days. He completes the treatment in the following way: During the first period, enforced rest in bed, in an airy chamber of mean temperature, darkened and free from noise, the diet consisting of milk and bouillon; in the beginning, free purgation with calomel; later, lavements of warm solution of borate of soda. At the end of ten to fifteen days, if there has been an amelioration in the symptoms, he returns to the usual diet; light, noise and movement can now be tolerated. Baths in tepid water, hydro-therapeutics and appropriate gymnastic exercises complete the cure.—*Annals of Gyn. and Ped.*

CHOREA!—The physician is often at his wits'

end to find some efficient remedy for chorea. Tilden claimed to have obtained great benefit by throwing a spray of ether for five or ten minutes along the spine, at the same time keeping up nerve nutrition by appropriate food and exercise. Clark, surgeon-in-chief of the police department in Newark, N. J., reported some time since in the *Times* an exceedingly aggravated case of chorea treated with entire success by antipyrine. Acting upon the hint, we have recently controlled in children from five to ten years of age serious forms of chorea with 5-grain doses of antipyrine, at first every four hours, and, as the condition improved, three times a day. Very likely there are conditions of the system which would prevent the curative action of the drug, but in these cases it was certainly very effective, acting as a positive curative agent. That this drug is something more than an antipyretic and antispasmodic is seen in its action in renal spasm, the result of calculi, in which it not only controls the spasms, but, continued in 5-grain doses for several days, causes the uric acid and the sand to disappear from the urine.—*N. Y. Med. Times.*

SULPHATE OF ZINC IN DIPHTHERIA.—The article on diphtheria in the *Medical Record* of February 28th induces me to report the success I lately had in that affection by the use of sulphate of zinc. On Sunday, February 8, 1891, I was called eight miles into the country to see two children supposed to have a severe cold with perhaps pneumonia. Upon my arrival they were found to be suffering from diphtheria, the one, a boy of nine years, having a temperature of 103° F., tongue heavily furred and a typical diphtheritic exudate covering both tonsils and all the visible portions of the mucous membrane of the palate and pharynx. The child had been sick three or four days. The other patient, a girl of 11 years, had been sick two days. She had a temperature of 100° F., tongue slightly furred, throat congested, with one small patch of grayish exudate upon the right tonsil not exceeding a line in diameter.

The mother of the children had about a week or ten days previously returned from assisting in nursing the children of her brother, who resided some eight miles from them; five of her brother's children were sick of diphtheria and three of them died of it, the disease seeming to have been especially malignant.

As to the treatment of these cases details will be omitted. Suffice it to say that it was identical in the two cases, with one exception, viz., in preparing a gargle for the boy, who was so much worse off than his sister, the family all watching the procedure, it seemed appropriate that his treatment should be different, in some respects at least, from that of his sister, and for this reason was added to his gargle (an ordinary tumblerful of

water) about fifteen or twenty grains of sulphate of zinc. Upon my visit the next day, my surprise was great to find that one half the membrane (diphtheritic) had disappeared from the boy's throat, while the diphtheritic membrane in the girl's throat had enlarged to about half an inch in diameter, and the throat in every way looked worse. The same treatment was continued, another twenty-four hours, at the expiration of which time the exudate had entirely disappeared from the boy's mouth and throat, while in the girl's throat it had again at least doubled in quantity, and the general appearance of the throat was much worse. Believing then, that the zinc sulphate was entitled to credit for the boy's rapidly improved condition, the girl was supplied with a gargle identical with that which the boy had been using, and twenty-four hours later not only had the diphtheritic membrane disappeared entirely, but all the swelling and distress had gone also, and both patients were now convalescent and speedily recovered. No further opportunity for testing the efficacy of this remedy in diphtheria has been afforded. Whether future trials will give equally favorable results remains to be proven. Some corroborative evidence of its efficacy as an antiseptic in zymotic diseases has been afforded me in cases of exanthematous suppurating inflammations about the finger tips, in which it has since been tried, where its beneficial results were manifested very promptly. I consider the remedy deserving of a thorough test, and shall be happy to learn of its results in the practice of other physicians.—S. L. Kilmer, in *Med. Rec.*

THE BLOOD IN PNEUMONIA.—Dr. Kikodze has published in the *Bolnichnaya Gazeta* of Dr. Botkin some interesting observations on the blood during pneumonia. He found that during the course of this disease the white corpuscles increase in number to as much as double, or even treble, what they are in healthy persons. The increase is observed in the fully mature and over mature corpuscles rather than in the young ones. It is worthy of note that in fatal and very severe cases no increase in the white corpuscles is found. As a rule, however, the increase begins even before the physical signs of pneumonia are detected. It persists from that time onward without any great variations to the crisis, immediately after which it suddenly falls. It appears to be due to the re-entry into the circulation of the corpuscles which have passed out into the alveolar spaces; hence probably the preponderance of over-mature corpuscles. After the crisis this preponderance ceases.—*Lancet.*

OBSERVATIONS ON CERTAIN CASES OF FATTY HEART.—Dr. Clemow read a paper on this subject in which details were given of a case of fatty

heart associated with obesity and hepatic enlargement and severe dyspnoea. The treatment adopted and recommended by Dr. Clemow was rest at first, followed by exercise, Oertel's diet, restricted fluid, digitalis, and strychnia. The patient lost weight and girth and gained strength, being able to take long walks without breathlessness or other untoward result. Dr. Travers agreed with Dr. Clemow, but where there was high specific gravity of urine fluids must not be restricted.—*Lancet*.

ÆTIOLOGY OF BRIGHT'S DISEASE.—Dr. Agnes Bluhm has studied the apparent causation of all the cases of morbus Brightii and albuminuria that were treated in the Cantonal Hospital of Zürich, from the beginning of 1884 to July 1, 1889. The cases numbered in all 8442, and after a careful analysis lead to the following conclusions:— (1) The chief causes of acute Bright's disease are the acute specific fevers, and nearly all of these are liable to be complicated by nephritis. (2) The apparently uncommon occurrence of chronic Bright's disease as a sequel of acute infective diseases is due partly to non-pathological causes, but also in some measure to the latent and therefore undetected course of chronic nephritis. (3) The occurrence of nephritis as a complication does not depend on the intensity of the primary specific disease. (4) The course of the primary affection and that of the nephritis complicating it are not mutually related.—*Pract.*

TONSILLITIS.—A robust colored man, a porter on the Pullman cars, was seized with a sore throat. I saw him on the morning of the third day. He had fever, a flushed face, with tonsils swollen and painful as usual.

He was put upon the following prescription, the directions being fully carried out:

R.—Tinct. veratrum vir . . . 30 drops.
Sulphate morphine . . . 1½ grains.
Distilled water 6 drachms.

Of this, one teaspoonful was to be taken every two or three hours, as needed.

This is five drops of veratrum and a quarter-grain of morphine in a teaspoonful of water as one dose. The next morning the patient was found to be up and dressed; he had had his breakfast and was smoking a cigar, his throat being entirely well.—*K. C. Med. Index*.

BUTYL-CHLORAL IN NEURALGIA.—Dr. A. H. Hare, of Philadelphia, calls attention to the relative value and safety of butyl-chloral in the treatment of insomnia due to neuralgic pain. He found that functional insomnia resting upon no known cause yields very well to this drug, but insomnia due to any advanced systemic lesion, as in phthisis, is not relieved in every instance by its use. Neuralgia of other nerves than the cranial

are rarely benefited by butyl-chloral; but it may give relief in such cases by combining it with ten to fifteen drops of the tincture of gelsemium. In true migraine with hemianopsia it is certainly one of the most useful remedies, given along with antipyrin and caffeine, *cannabis indica* and gelsemium. A great advantage possessed by butyl-chloral is the applicability of moderate doses in cases of heart disease.—*Philad. Medical News*.

The Yankee medical student has not very much to be thankful for. First of all, the medical "diploma mills" turn out their thousands of ill-trained and indifferently educated youths to take part in the professional struggle for existence, and then no kind legislature has interfered for the purposes of restricting the practice of medicine to native graduates. His woes, therefore, are tangible, but now Mr. McKinley has got passed a tariff, in virtue of which the tax on microscopes has been raised to 60 per cent., so that an instrument which costs ninety dollars in Germany will, wholesale, cost one hundred and fifty dollars in the States. This will hardly have for effect to stimulate microscopical work, and the cost will, of course, increase *pari passu* with the minuteness of the object to be magnified, seeing that the higher the power the greater the initial cost, and, therefore, the more crushing the protective duty.—*Hosp. Gaz.*

A VARNISH FOR METALS.—The following varnish will maintain its transparency, and the metallic brilliancy of the articles will not be obscured: Dissolve ten parts of clear grains of mastic, five parts of camphor, five parts of sandarach, and five parts of elemi in a sufficient quantity of alcohol, and apply without heat.

SIGNS OF MEDIASTINAL "GROWTHS."

An anxious look, and sometimes swollen features
And hurried pulse and breathing plague the creatures.
A sternal prominence, and heart displaced,
One-sided dulness by lung-note effaced
(Or, to explain more clearly what's intended,
Percussion dulness to one's side extended,
And meeting pulmonary note—is ended).
Aortic impulse gives a throbbing local,
And o'er the growth there's fremitus and vocal
Resonance increased; and there's a styolic
Murmur, threat'ning results more "diabolic."
There's bronchial breathing, and a strident rhonchus
When air is passing *in* or *out* a bronchus,
An impaired movement of thoracic wall,
And feeble breath sound, or no sound at all
O'er one particular lobe of single lung,
The "Reason Why" should not be left unsung,
And this I will explain without digression
A tumour blocks a bronchus by compression.
And mind! where'er the lung is much affected
Some signs appear, which should not be neglected,
Resembling strongly pleuritic effusion,
Whose *actual presence* may be no illusion.

THE CANADA LANCET.

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TORONTO, MAY, 1891.

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DRAINAGE.

The younger members of the profession in Canada have had the necessity of "efficient drainage" so worn into them during their student days, that it has become like second nature to them to secure it in all cases of operative surgery where fluids of any kind, septic or otherwise, are liable to collect. It may be said that fluids which are not septic are by many believed to be liable to become so when lying in any wound or cavity of the body, even though the strictest antiseptic precautions may have been taken.

Be this as it may, drainage is almost universal, but we believe is resorted to in the vast majority of cases simply because of the traditions of the recent fathers, and of habit, not because the operator, having thought out the problem, believes it necessary to prevent septic intoxication in the patient.

For if the pathogenic germ be so ubiquitous, that in an operation performed with "the strictest antiseptic precautions," it is believed to yet linger in the wound or cavity, or the discharges thereof, thus rendering the removal of such discharges necessary, how can it be possible that, by the formation of one or more inlets to that wound or cavity the said ubiquitous germ shall not, during the indefinite time of healing of the wound, have free access to it? Lawson Tait may be looked upon as the champion of drainage, while Sir

Spencer Wells holds exactly opposite views. In 1885 he wrote, after an experience of 1,100 cases of abdominal surgery, that "drainage should be almost entirely discarded. . . . I have not drained one case in which antiseptic precautions have been taken; and on looking back I cannot believe that there are more than two or three in which if a drainage tube had been used it would have been useful. The simple explanation is, that the mixture of blood, other fluids, and air left in the peritoneal cavity, or oozing into it after operation, formerly went through putrefactive changes, and if not drained off produced septicæmia, whereas now no putrefaction takes place, and absorption is quite harmless." In 1890, in the Bradshaw Lecture delivered by the same eminent authority, he deprecates even more strongly drainage as a routine, and indeed, if we believe in aseptic operations, then surely evacuation of the discharges is not only unnecessary but positively to be avoided, unless for the relief of tension. Serum and blood, if not septic, can surely do no harm by being absorbed, and indeed serum is very necessary for natural tissue repair. Asepsis in surgery has been a boon to mankind, but with all the changes that have been wrought in the routine of operations since the days of the carbolic spray, drainage has held its own. We are of the opinion that the next decade will practically see the end of the custom as a routine.

It is now on trial, and while it can never be entirely discarded, the disadvantages attending its constant use must necessarily limit its use.

THE MICROBE OF RHEUMATISM.

We are not aware that the profession as a whole look upon acute rheumatism as a disease caused by pathogenic microbes, and yet if we take into consideration the results of careful researches as to the etiology of this disease by renowned bacteriologists, we shall be almost obliged to come to the conclusion that it is a specific disease, and caused by the presence of such organisms. So far as we can learn, the earliest literature on the subject was by Dr. Alfred Mantle, who, in a series of investigations made in 1887, concluded to his own satisfaction at least, that the disease was caused by living organisms in the blood and serum of

persons affected. An interesting result of his investigations was the demonstration of lactic acid fermentation in sterilized milk, by cultivations of the bacilli of rheumatism, amygalitis, erythema, nodosum, and scarlatina. It will be a red-letter day for scientific medicine, when the exact relationship of the last-named diseases is clearly demonstrated. We all accept the fact that such relationship exists, but with rather hazy ideas as to its nature, the literature of the subject being very barren.

Since Dr. Mantle's investigations in '87 numerous other observers have studied the subject, with rather conflicting results. Quite lately Dr. Bardas has given definitely the results of his investigation in acute osticular rheumatism, and they certainly confirm those of Dr. Mantle. He has isolated and cultivated a microbe which when injected into the circulation of a rabbit caused endocarditis, with vegetations upon the cardiac valves. He is satisfied that this microbe will be found the specific cause of the disease in man.

ONTARIO MEDICAL ASSOCIATION.

The following are the titles of the papers to be read at the meeting of the above Association in June :

GENERAL DISCUSSIONS.

Medicine.—"The Cardiac Phenomena of Rheumatism," Dr. A. McPhedran, Toronto; assisted by Dr. Mullin, Hamilton; Dr. Henderson, Kingston; Dr. Gillies, Teeswater.

Surgery.—"The Cause and Treatment of Carcinoma," Dr. L. Teskey, Toronto; assisted by Dr. J. Wishart, London; Dr. Groves, Fergus; Dr. I. H. Cameron, Toronto.

Obstetrics and Gynæcology.—"The Treatment of Fibroid Tumors of the Uterus," Dr. Ecoles, London; assisted by Dr. A. A. Macdonald, Toronto; Dr. Fenwick, Kingston; Dr. Mathieson, St. Mary's.

Ophthalmology and Otology.—"Points of General Interest in Otology," Dr. R. A. Reeve, Toronto; assisted by Dr. A. B. Osborne, Hamilton; Dr. Hodge, London.

Therapeutics.—"Modern Antipyretic Methods," Dr. Saunders, Kingston; assisted by Dr. McKay, Ingersoll, and others.

PAPERS BY GUESTS.

"The Surgical Treatment of Intussusception," Dr. N. Senn, Milwaukee. "Gynæcology for the General Practitioner," Dr. Howard Kelly, Baltimore. "Exploration of the Female Bladder," Dr. Jas. F. W. Ross, Toronto.

PAPERS.

"Pathological Weeping," Dr. A. B. Osborne, Hamilton; "The Surgery of Tuberculosis," Dr. G. A. Bingham, Toronto; "Pelvic Cellulitis," Dr. Gardener, London; "Deviations of the Nasal Septum," Dr. Price Brown, Toronto; "The Diagnosis of Typhoid Fever," Dr. J. E. Graham, Toronto; "Hæmaturia," Dr. Wm. Britton, Toronto; "Is Alcohol a Stimulant?" Dr. Arnot, London; "Epilepsy—the Results of Asylum Treatment," Dr. T. Millman, Toronto; "Short Notes on Injuries of the Skull and Epithelioma of the Larynx," Dr. Burt, Paris; "The use of Fluorescin and Pyoktamim in Ophthalmic Medicine," Dr. G. S. Ryerson, Toronto.

REPORTS OF CASES.

Medical.—Dr. Campbell, Seaforth; "Acute Osteo Myelitis." Report of cases and exhibition of cultures, Dr. G. A. Peters, Toronto; "The Symptoms and Cause of Eye-strain, and its Diagnosis by the General Practitioner," Dr. Caldwell, Peterborough; "Injuries from the too long use of Pessaries," Dr. Hamilton, Atwood; "Hydrocele," Dr. E. E. King, Toronto; "Senn's Decalcified Bone-filling," Illustrated by presentation of patient and specimen, Dr. Oldright, Toronto.

Papers will also be contributed by: Dr. Wilson, Richmond Hill; Dr. Irving, Kirkton; Dr. Grasett, Toronto; Dr. Primrose, Toronto; Dr. A. H. Wright, Toronto; Dr. Buchan, Toronto.

MEDICAL EXAMINATIONS.

QUEEN'S UNIVERSITY.

James Brady, James W. Campbell, Andrew Carmichael, Sidney N. Davis, Edmund B. Echlin, B. A., William A. Empey, Ignatius J. Foley, John T. Fowkes, Robert J. Gardiner, William W. Genge, James F. Gibson, Samuel D. Green, Andrew Haig, M. A., Edgar D. Harrison, Dundas [Herald, William J. Johnston, John T. Kennedy, William E. Kidd, Frank C. Lavers, George P. Meecham, John Moore, Allan E. McColl, B.A., John A. E.

McCuaig, Ernest H. McLean, Duncan M. MacLennan, James A. McLellan, J. Edwin Macnee, Janet Murray, John H. Oldham, Margaret O'Hara, Nelson Raymond, Edward B. Robinson, Michael D. Ryan, William J. Scott, James E. Spankie, William A. Stewart, B.A., Archibald J. Vallean, Janet Weir, James W. White, Arthur C. Wilson.

Herbert A. Parkers, Sarnia, has passed all his examinations and will obtain his degrees when he reaches the age of twenty-one years (a few months hence).

The hospital surgeons are: Messrs. Thomas H. Balf, Smith's Falls; Isaac Wood, B.A., Kingston; A. Lockhart, Kingston.

The first year silver medal was won by Walter T. Connell, Spencerville.

The Robson-Roose prize in Pathology was won by Andrew Haig, M.A., Meine.

The Rivers-Wilson prize in Sanitary Science and Jurisprudence was won by J. W. Campbell, of Toronto.

TRINITY UNIVERSITY.

Primary Examination.—Certificates of honor—C. B. Shuttleworth, first silver medallist; J. T. Robinson, second silver medallist; H. J. McGill; C. McPhail; R. V. Fowler; W. Glaister; R. Brodie; C. H. Bird; R. E. Macdonald; A. B. McGill; T. Douglas; E. Tomlinson; F. J. Burrows; W. H. Cartwell; B. N. Coates; D. D. Wickson.

Class I.—W. Andrews; T. J. Dunn; R. E. Darling; J. K. M. Gordon.

Class II.—N. Campbell; E. Orton; R. S. Dowd; W. H. Tufford; J. R. Bingham; H. J. Denovan; W. Doan; J. C. Stinson; J. B. Ferguson; W. J. Ross; Miss M. M. Brander; J. J. P. Armstrong; W. J. Arnott; W. C. Belt; J. A. G. Wilson; F. W. Mulligan; Miss N. Rodger; T. W. Carland; W. A. Thomson; M. S. Lane.

Class III.—R. T. Corbett; J. H. Duncan; G. D. M. Ruthven; P. J. Maloney; Miss J. Ryan; W. J. Proctor; H. H. Alger and H. P. R. Temple equal; J. E. King; J. R. Rosebrough; J. Bowie; C. Carter; A. B. Singleton; N. Anderson; M. J. Farrish.

Final Examination for M. D., C. M.—Certificates of honor—J. Third, gold medallist; J. T. Fotheringham, silver medallist; C. Mackay and J. Sutherland and C. A. Temple equal; R. Knechtel; C. C. Fairchild; J. R. Walls.

Class I.—W. D. D. Herriman and T. C. Irwin and D. C. Jones equal; J. B. Martyn; D. Johnson; W. Montgomery; J. J. Moore; W. G. Sprague and R. H. White equal; G. D. Farmer and F. A. Quay equal; A. A. Sutherland; G. R. Mark and H. A. L. Reid equal.

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Class III.—W. E. Brown, Miss M. A. Griffin, A. E. Henry, W. A. Macpherson, J. T. Kennedy, F. L. Switzer, D. B. Alexander, A. W. Bell, F. E. Spilsbury, A. J. Murray, W. J. Awty, L. E. Bolster, D. B. Bentley, A. H. Hough, J. P. Russell,

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WESTERN UNIVERSITY, LONDON, ONT.

L. M. Ardiel, J. M. Creighton, J. W. Leininger, W. O. Murray, J. P. Kennedy, T. J. McBlain, F. McCrimmon, H. McIntyre, T. P. McLaughlin, D. G. McNeil, L. Pelton, M. Sharp, H. Wilson.

THE FATHER OF A FAMILY INDEED.—Says *Annals of Hygiene*, Were it not part of the records of the Berks County courts, we could hardly credit the history of John Heffner, who was accidentally killed some years ago at the age of sixty-nine. He was married first in 1840. In eight years his wife bore him seventeen children. The first and second years of their marriage she gave birth to twins. For four successive years afterward she gave birth to triplets. In the seventh year she gave birth to one child and died soon afterward. Heffner engaged a young woman to look after his large brood of babies, and three months later she became the second Mrs. Heffner. She presented her husband with two children in the first two years of her wedded life. Five years later she had added ten more to the family, having twins five times. Then for three years she added but one a year. At the time of the death of the second wife twelve of the thirty-two children had died. The twenty that were left did not appear

to be any obstacle to a young widow with one child consenting to become the third wife of the jolly little man, for he was known as one of the happiest and most genial of men, although it kept him toiling like a slave to keep a score of mouths in bread. The third Mrs. Heffner became the mother of nine children in ten years, and the contentment and happiness of the couple were proverbial. One day, in the fall of 1885, the father of the forty-one children was crossing a railroad track, and was run down by a locomotive and instantly killed. His widow and twenty-four of the forty-two children are still living.

THE PYREXIA OF PHTHISIS.—Dr. Williams writes on this subject in the *Br. Med. Jour.* Now that not a few of the profession think fever is not in all cases harmful, but rather helpful in the disease it accompanies, his words will be of great interest in regard to the pyrexia of phthisis. He says :

A natural question arises here : Is it advisable to reduce the pyrexia of phthisis at all ? We do not thereby stop the tuberculous process ; and as regards the wasting, I have shown elsewhere that pyrexia in phthisis is compatible with gain of weight, provided the diet be of a sufficiently abundant and nutritive character. In most cases the reduction of temperature is attended with a certain degree of comfort to the patient. But even to this statement there are exceptions, for occasionally patients, when the pyrexia is reduced by antifebrin or antipyrin, experience such uncomfortable sensations—chiefly of oppression—that they prefer the high fever to the effect of the antipyretic.

Two agencies which sometimes prove powerful antipyretics must be mentioned. One is confinement to bed. This I have seen by itself reduce temperature to the extent of 2° or 3° F. The other is sleep which will reduce temperature 2° and more at a time without any medicines. My conclusions as to the treatment of pyrexia in phthisis are :

1. The pyrexia due to tuberculization is best dealt with by derivative measures, such as counter-irritation, salines promoting secretion from other organs, and assisting expectoration.

2. That in the treatment of the pyrexia accompanying softening and excavation, measures which hasten these processes are found to be most suc-

cessful, especially if combined with antiperiodics, such as quinine, salicin, or salicylate of sodium to moderate the fever.

3. That the use of medicines solely directed to lowering the temperature of the body without promoting increase in the natural secretions is generally inadvisable.

4. That our object in the treatment of phthisical pyrexia should be, not the reduction at all hazards of the temperature, but its lowering to the limits compatible with the comfort and well-being of the patients, and for this end that much may be done, in addition to the discriminating use of medicines, by the simple means of frequent food combined with stimulants and rest in bed.

MALFORMATIONS OF THE EXTERNAL EAR IN THE SANE, AND IN IMBECILES AND IDIOTS.—In order to determine whether abnormal formation of the pinna actually possesses such value as an indication of degeneracy as is attributed to it by many writers—notably alienists—Dr. Váli (*Allgem. Wien. med. Zeitung, Br. Med. Jour.*), examined 500 healthy men, an equal number of healthy women, and several hundred imbeciles and idiots. Of the healthy persons, 26 per cent. males and 15 per cent. females had malformed pinnae. Only 50 per cent. of the idiots and imbeciles had normal pinnae. Amongst the numerous variations observed, Dr. Váli found that prolongation and pointing of the tip of the ear were twice as common in the mentally defective class as in the sane ; shortening, elongation, or bridging of the scaphoid fossa followed the same rule. Projection of the antihelix above the level of the helix was especially frequent in imbeciles ; in idiots it occurred about three times more frequently than in sane persons. Partial or complete fusion of the helix with the antihelix existed twice or three times as often in imbeciles and idiots as in sane individuals. His observations further showed that in most cases the anomaly is bilateral ; if confined to one side, that side usually is the left. It is rare for more than one species of deformity to exist in the same pinna.

TREATMENT OF CORNEAL ULCERS.—The Paris correspondent of *The Lancet* says : M. Valude, one of the ophthalmic surgeons of the Qqinze Vingt's Eye Hospital, communicated to the Académie de Médecine on Feb. 10th a new method of

treating those troublesome cases—ulcers of the cornea—so simple in its application, and, according to its inventor, so successful in its results that it cannot fail to be generally adopted. Hitherto corneal ulcers complicated with hypopion have been treated by puncture either by the knife or thermo-cautery, this operation having frequently to be repeated, and too often leaving behind it opacities, if not actual staphyloma. For this unsatisfactory method M. Valude substitutes a simple dressing, consisting of a pad of salol gauze, which, with a moistened gauze bandage, effectually seals the eye and maintains a certain amount of compression. Before being applied the eye is carefully disinfected. The dressing is not renewed until after three or four days have elapsed, when the ulcer is found to be already healing, and the collection of pus in the anterior chamber much diminished. M. Valude states that the cornea tends to regain its original transparency without any opacities. In corneal ulcers, uncomplicated by hypopion, M. Valude, relying on his experience of fifteen successful cases, asserts that this new treatment is *the treatment par excellence*.

THE ANTISEPTIC PROPERTIES OF BLOOD SERUM.

—In a paper read before the Société de Biologie, of Paris, Dr. Roger (*International Jour of Surg.*) reported some experiments which tend to show that blood serum has the property of greatly diminishing the virulence of microbes. As is well known, complete immunity against erysipelas may be conferred on animals by inoculating them with fairly virulent cultures of the erysipelas-cocci. One month after an inoculation Roger collected the blood of an animal experimented upon, as well as the blood of a healthy animal, and made cultivations of erysipelas-cocci upon the serum of both, for purposes of comparison. He found by microscopical examination that the cultures developed to the same extent, and in the same manner in the blood-serum of both animals, with the single exception that in the serum of the inoculated animal the chains of cocci were somewhat longer than in the other. Rabbits were then inoculated with streptococci which had been cultivated upon the normal serum, and if the cultures were sufficiently virulent, death always took place from general infection. On the other hand, this result was never observed when the cultures used were taken from

the serum of the inoculated animal. If less virulent cultures were employed, the cocci derived from the healthy serum usually gave rise to a moderate grade of erysipelatous infection, while those from the serum of the inoculated animals produced only small abscesses.

THE TREATMENT OF INFANTILE PARALYSIS.—

The following is an outline of treatment of infantile paralysis recommended by Simon (*La France méd., N. Y. Med. Jour*). At first counter-irritation over the spinal column at a point corresponding to the origin of the roots of the nerves affected. For this purpose the least painful agents should be chosen. The functions of the skin should be stimulated at the same time by means of baths of hot water or vapor given in the bed. Chloral, aconite and conium may be employed to calm nervous excitement. After the first eight days, electricity should form the basis of the treatment. Simon uses a weak galvanic current, applying the positive pole to the shoulder and arm, the negative pole being placed in a basin of water in which the child's hand rests. The sitting should never last more than eight or ten minutes. At a later stage faradism may be used, always with the greatest caution. Among drugs, nux vomica is of the greatest service. A drop of the tincture is given twice daily at the two principal meals. At the end of ten days, or earlier if indicated, the nux vomica should be replaced by arseniate of sodium a sixty-fifth of a grain at a dose. The use of these two remedies alternately is to be continued throughout the case. Salt and sulphur baths are recommended, but only in the late stages of the disease. Above all, Simon enjoins us never to be discouraged, as the treatment must necessarily be very long.

JAPAN (says *The Times and Reg.*) is moving for the abolition of licensed prostitution," as some well-meaning, but bigoted fanatics (weak-minded men and strong-minded women mostly), term the Contagious Diseases Act. Meantime the prevalence of venereal diseases among the troops in England, that was very small while these acts were in force, has mounted to 30 and 50 per cent. since their abrogation. In France the ratio of syphilis in registered and clandestine prostitutes was 31 and 239 per 10,000, respectively.

ACUTE DYSENTERY.—Strong testimony as to the value of Dr. Roberts Bartholow's method of treating acute dysentery by a saturated solution of Epsom salts, is given by Dr. A. W. D. Leahy, of India. *Columbus Med. Jour.* He cites ninety-five cases with only two deaths. The solution is made as follows :

R—Magnes. sulphat. . . . q. s. to saturate.
 Aquæ. fl ʒ vii.
 Acid. sulphuric. dilut. fl ʒ i.—M.

Sig.—Tablespoonful in water every hour or two, until it operates.

Morphine, or starch enemata with laudanum, may also be used if indicated. Under its use fever, if present, disappears; mucus and blood are wanting in the stools, which become copious, feculent and bilious; the tenesmus ceases; the patient's anxiety diminishes; the skin acts well and sleep follows the administration of the first few doses. It is especially in the acute cases that sulphate of magnesia is so valuable; the more chronic the case becomes, the less apparent are the advantages of this treatment. After the stools have become normal in color and appearance, an ordinary mixture of acid with laudanum or tincture of cannabis indica is all that is needed to complete the cure.

FORMULÆ FOR PRURITUS.—The following are given by *La Semaine Méd.* for pruritus :

R—Pure resorcin, ʒ j.
 Glycerin, ʒ ij.
 Water, ʒ iv.—M.
 Sig.—For external use.

R—Menthol, ʒ iij.
 Glycerin, ʒ ij.
 Water, ʒ iv.—M.
 Sig.—For external use.

VOMITING OF PREGNANCY.—The following is highly recommended :

R—Menthol, grs. xv.
 Alcoholis, ʒ v.
 Aq. dest., ʒ iv.—M.
 Sig.—ʒss every hour.

LAPAROTOMY IN PERITONEAL TUBERCULOSIS.—Dr. Parker Syms says statistics show a very small death rate—three per cent.

Sepsis is not so likely to occur in these peri-

toneal cases as in laparotomy on healthy ones, on account of the pathological changes which have taken place in the membrane.

Tubercular infection of the wound does not occur.

Disinfectants are useless, and drainage should not be used, as it is likely to result in a permanent sinus.

In unsuccessful cases the operation at least does no harm. Most of the patients who have died at a time remote from the operation, have succumbed to general tuberculosis, or to a tuberculosis of some other organ.

Established—not advanced—pulmonary tuberculosis is an indication for, and not against the operation, for the improvement gained enables the patient to better resist the phthisis, and if this latter is but incipient, recovery may take place.

Laparotomy is the proper form of treatment for these cases. In some unknown way it exerts a most beneficial influence upon the disease, resulting in a cure in a large proportion of cases, and marked improvement in nearly all.

FRANCE (*Weekly Med. Rev.*) has one physician to every 3,000 people; Germany, one to 1,500, or twice as many; the United States, one to 600, five times as many as France; and California, that boasts of her climate and the good health of her people, one to 500, or six times as many as France. One year since Los Angeles had one physician to 301 of her people.

HYDROCELE.—Prof. John A. Wyeth says, *Practice*, always cures hydrocele by injections of pure carbolic acid. All the liquid must first be drawn off with an aspirator. About thirty minims of carbolic acid is a sufficient quantity to sear the sack. This is not as painful as might be supposed. The first effect is to cause swelling, which soon subsides. In fifty operations two cases only have failed to be cured by the first injection.

THE CURE OF CANCER.—Says the *Med. Rec.*, Prof. Moseitig, of Vienna, announces that in pyoktanin or methyl-violet, he has found a remedy for cancer. He does not assert that any cases are quite cured yet; but the results have been so satisfactory as to lead him to think a cure will be found in the aniline dyes.

TREATMENT OF CHRONIC GASTRIC ULCER.—In a recent number of the *Lancet*, Dr. Robt. Saundby says :

As a general rule, I order at first half an ounce of milk and lime water every hour as the only food, with the sulphate of iron and magnesia mixture in purgative doses three times a day. Ziems. sen and Leube use sulphate of soda or Carlsbad salt in purgative doses, with the object of removing all remains of food from the stomach ; but I use this mixture simply to remedy the anæmia and constipation so generally present. If hæmatemesis actually occurs, or the patient is admitted with a very recent history of it, I order ice to suck, and feed per rectum for a day or two, and then proceed as before. When, as usually is the case, vomiting and pain cease under this treatment, I double the allowance of milk and lime water, then change the diet to soft bread-and-milk, getting on through pounded chicken to ordinary diet as rapidly as possible. The good results are attested by the table. It may be objected that these cases are not cured, but that there is only a temporary remission of the symptoms. I do not think this is true—although one case did undoubtedly relapse three times—as all these patient were made out-patients under me, and attended for a longer or shorter time, continuing to take the medicine. Had they relapsed it is most probable they would have reapplied for admission to this hospital, where, according to the rules, they would have been placed under my care. It may be thought that there is danger, by this plan, of exciting hæmorrhage, or causing perforation, but I think this fear is sufficiently answered by the record.

THE DRY TREATMENT OF CHANCROIDS.—The following treatment in use in the surgical divisions of Bellevue Hospital, New York, is recommended : After the prepuce has been retracted a small quantity of absorbent cotton is made to surround the penis just behind the corona, and is held in place by a rubber thread-band. The sulcus behind the glans is thus obliterated, and no longer forms a receptacle for secretions. The ulcerated glans is free from irritation, the prepuce being held back, and the cotton absorbs the exudation almost as soon as formed. The dressing can be changed as often as is necessary to keep the parts dry.

SPECIFIC TREATMENT OF TYPHOID FEVER.—Dr. J. H. Van Eman, in the *Jour. of the Amer. Med. Assoc.*, thus writes of the treatment of typhoid fever : Having concluded in 1889 that pathogenic germs cannot exist or increase in an acid medium, he at once began the treatment of his typhoid cases as soon as he was reasonably certain of his diagnosis, as follows : For the first 36 to 48 hours he gave calomel in 5 to 10-grain doses until he had very thoroughly cleansed out the alimentary canal, for the purpose of either sweeping out or destroying all germs that had not migrated from the intestine. While doing this he sterilized all foods and drinks, thus preventing the ingress of new germs. This being done, he put the patient on half-drachm doses of dilute muriatic acid in syrup and water, every three hours, day and night. In six cases thus treated all recovered. In all the diarrhoea was promptly arrested and never gave any further trouble ; in fact some little attention was required to keep the bowels open. In no case did the delirium occur, neither sordes nor dry cracked tongue. In five of the cases the duration was under 21 days. No complication existed, and convalescence was uninterrupted and unusually rapid. The evening temperature did not exceed 103° in any case.

ALCOHOL IN ERYSIPELAS.—Dr. Stembarth, of Cracow (*St. Louis Med. and Surg. Jour.*), emphatically recommends the treatment of erysipelas by means of freely painting the affected area and adjacent apparently healthy zone with absolute alcohol. The painting should be made with a brush or cotton wool swab and repeated every two or three hours. Of twelve consecutive cases treated by the author after this simple, easy, safe and highly efficacious method, eleven recovered in two or three days. The remaining case (that of an extensive puerperal erysipelas of the lower limbs and lower part of the body) was cured on the tenth day.

ECZEMA IN CHILDREN.—Use a 5% lanolin and bismuth salve, thickly spread on linen, and bandage it upon the part morning and night. Lanolin forms but a small amount of fatty acids on the skin, while vaseline and other fats readily produce fatty acids which are very irritating to the child's sensitive skin.

THE ONTARIO MEDICAL ASSOCIATION.—The eleventh annual meeting of this Association is put down for Wednesday and Thursday, 3rd and 4th June. There will be the usual reduction of railway fares. By reference to another column the full list of papers, etc., may be seen. It is to be hoped that the members attending may be commensurate with the importance of the meeting, and the bill of fare as set forth. In our advertising columns will be found all necessary information for members and intending members.

BURLINGTON AND HURON DIVISION.—Owing to the resignation of Dr. Jas. Russell, of Hamilton, representative of above Division in the Ontario Medical Council, an election to fill the vacancy will be held in May, 1891. See the Registrar's advertisement in another column.

Books and Pamphlets.

TEXT-BOOK OF MATERIA MEDICA FOR NURSES.
Compiled by Lavinia L. Dock, Graduate of Bellevue Training School for Nurses, Superintendent of Grace Memorial House. New York: S. P. Putnam's Sons. Toronto: Carveth & Co.

The work of compilation has been well done. Now that the study of Materia Medica is made a part of the course in nearly all training schools, the work is timely, and will be invaluable to both teachers and students in this field. There is no attempt to do more than discuss the main points concerning the most commonly used medicines, therapeutics being wisely left entirely alone. The symptoms of poisoning and antidotes are given for many common drugs, as also a table of comparison between minims and drops. The work is one which every nurse engaged in her profession, should have constantly at hand.

APOLOGY.—On account of pressure on our advertising pages, we have been obliged to utilize space generally devoted to reading matter. Our readers will kindly bear with us.

1891.

Medical Council Election for the Burlington and Home Division.

Extracts from the By-Law for conducting the Elections of the Medical Council of Ontario.

Election to take place on the 27th of May, 1891.

THAT any member of the College of Physicians and Surgeons of Ontario presenting himself for election as a representative to the Medical Council for the Territorial Division of Burlington and Home, must receive the nomination of at least twenty registered Practitioners resident in such Division, and that such nomination paper must be in the hands of the Returning Officer for the Division not later than two o'clock on the afternoon of Wednesday the 13th May, 1891.

"In the event of only one candidate receiving such nomination, it shall then be the duty of the Returning Officer to declare such candidate duly elected.

"That the Registrar shall send to every registered member of the College entitled to receive the same, a voting paper (in accordance with residence given on register) by Wednesday the 20th May, 1891.

"Any member of this College not having received a voting paper by Wednesday the 20th May, 1891, when more than one candidate has been properly nominated for the Division of Burlington and Home, will send by post to the Registrar his or her name and address, and a voting paper will be forwarded at once for the Division."

Certified a true copy of extracts from By-law passed by the Medical Council of Ontario.

By order,

R. A. PYNE, Registrar.

College of Physicians and Surgeons of Ontario,
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