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CONTENTS.

Original Communications.

NINE CASES OF SEVERE DYSMENORRHŒA CURED BY THE INTRA-UTERINE APPLICATION OF THE NEGATIVE POLE OF THE GALVANIC CURRENT.

BY DR. A. LAPTHORN SMITH, *Professor of Gynecology in Bishop's College, Gynecologist to the Montreal Infirmary.*

On looking over the last six hundred cases in my note-books at the Montreal Dispensary, and my last four hundred cases in private practice, of diseases of women, and excluding all the women who have borne children, I find that the principal symptoms for which I have been consulted by the remainder—that is, by all the non-parous single and the sterile married women—was dysmenorrhœa. Dysmenorrhœa is, of course, a symptom and not a disease, and used formerly to be divided by classical authors into five kinds, according to the cause on which it depended, namely—(1) neuralgic or sympathetic, (2) congestive or inflammatory, (3) mechanical or constructive, (4) membranous, and (5) ovarian. In Pozzi's new work, however, the author, very wisely I think, reduced this classification to two groups: according to whether the pains occur during the ovarian and tubal period (ripening of the follicles), or during the uterine period (expulsion of the menstrual blood). In other words, the pain is either due to the appendages or to the uterus. Under the first class may be mentioned ovarian congestion from whatever cause, varicocele of the pampiniform plexus, which is generally accompanied by chronic ovaritis, followed by atrophy of the ovaries, just as varicocele in the male is followed by atrophy of the testicle, also inflammation of the tubes and of the pelvic peritoneum covering the appendages, always followed by more or less exudation, which becomes organized and binds the tubes and ovaries down in abnormal positions, so that the tubes have to make spasmodic efforts in order to reach the ripe egg and to pass it down to the uterus. In other

words, the peristalsis of the tubes is interfered with.

Under the heading of dysmenorrhœa of uterine origin we may put down everything which offers a mechanical obstruction to the expulsion of the blood, whether this be an organic or functional stricture, or whether it be due to an anterior or posterior flexion or to the blocking up of the canal by a polypus, a fibro-myoma or merely by the mucous membrane of thi, uterus thickened by inflammation (endometretis). A recent writer, whose name for the moment I forget, states that out of one thousand cases of dysmenorrhœa, in over nine hundred there was undoubted endometritis. My own experience, although much more limited, fully bears out the correctness of this statement. In nearly all of my cases which required examination I found the uterus sensitive to the touch, there was backache, very often trouble with the bladder and rectum, a uterine leucorrhœa diagnosed by means of a dry tampon of sublimate cotton left for twenty-four hours against the os, and in a great many there were reflex disturbances, through the great sympathetic, of such distant organs as the stomach, heart and eyes. On passing the sound I have invariably found that as soon as its extremity reached the level of the internal os severe pain was caused, which these patients invariably stated was exactly similar to that which they suffered every month. On the other hand, I have seen so many cases of acute flexions without endometritis, in which there was no dysmenorrhœa, that the opinion has been gradually growing in my mind that it is only when the above-mentioned conditions are associated with endometritis that they cause dysmenorrhœa. Moreover, my experience in the matter of treatment has been that in the majority of cases the most satisfactory results have followed the use of such measures as have been found to be most effective in curing endometritis, such as curing habitual constipation, removing other obstructions to the pelvic circulation, improving the circulation generally, improving the circulation in the pelvis by very hot douches and boro-glyceride tampons, rapid dilatation, curetting, with and without the intra-uterine tampon and with and without an intra-uterine stem, the external application of the galvanic current, the application of the same current with one pole in the vagina, against the uterus, and the other on the abdomen or on the sacrum as a tonic to the vaso-motor plexus of the pelvis, and last, but most important of all, by the application of a mild galvanic current to the inside of the uterus by means of the ordinary uterine sound insulated to within two and a half inches of its end, and to the handle of which the negative pole of the battery is attached.

I have given a fair trial to all these methods in succession, with many cures and some failures, and I have come to the conclusion that the negative galvanic pole will cure endometritis and dysmenorrhœa when any and all of the above valuable measures have failed. It requires very little argument to prove that dysmenorrhœa is a symptom well worth curing; we all know that a great many of the unhappy inmates of the asylums are women who became opium eaters by the prescription of the physician who attended them for dysmenorrhœa, so that I only mention that form of treatment to condemn it. On the other hand, the condition is one which is exceedingly difficult to cure. Hear what Winkel says in his last work: "Dilatation of the uterine cavity, discision of the cervical canal, cauterization of the uterine mucous membrane with nitrate of silver, tannin, tincture of iodine and carbolic acid, curetting the uterus, scarifying its mucous membrane, and the application of leeches to the vaginal portion have all been recommended and used by the author. I have also had under my care the patients of colleagues who had likewise employed all these remedies, but also without avail. I have never seen a cure result from the sole use of these means."

In fact, the treatment of dysmenorrhœa has been hitherto so unsatisfactory that a great many sufferers have become convinced that it is incurable, also that their pain must be endured. In the majority of cases the physician is not sent for during the period, but if consulted at all, it is generally when the period is over, so that he has no means of estimating the amount of the pain in severe cases. From the independent description of it by a great number of women, I should judge that in many cases the pain is really terrible. In some cases which I have seen, the suffering seemed to be much greater than that caused by the first stage

of labor, the young girl tossing wildly about on her bed and screaming with agony. I believe, as a rule, we underestimate what we call the physiological pains which women have to bear, but which are now no longer physiological but pathological. In the opinion of many gynæcologists and several general practitioners who have a natural tendency to "have at their patients with the knife," dysmenorrhœa is considered as a symptom quite severe enough to warrant them in performing a mutilating operation which is not always unattended with risk to life. Although the operation puts a stop to the periodical exacerbations of pain, it does not always cure the endometritis on which the dysmenorrhœa depended, so that the patient still has her backache and headache and other reflex nervous symptoms which she had before.

The treatment which I am advocating does not mutilate the patient, is absolutely without danger, requiring no anæsthetic, because it is absolutely painless if carefully carried out, and not only cures the periodical suffering, but at the same time improves the general condition, producing a feeling of well-being from the first or second application. As compared with other methods of treatment, I have found it immeasurably superior to them all. As I have already said, the treatment by narcotics should be out of the question; we are all pretty well agreed that there is only one chronic disease which we are justified in treating with opium, namely, cancer. Treatment by extirpation of tubes and ovaries in which there is no organic disease is or should be also out of the question. Dilatation by tents and discision should also be discarded, as they have been proven, even in the hands of the most careful, to be fraught with more danger than laparotomy. The only method of treatment which can at all compare with the treatment by galvanism is rapid dilatation, with subsequent application of a mild caustic to the interior of the uterus, and drainage either with iodoform gauze or with a vulcanite or glass stem or tube so arranged as to remain for some time and to allow perfect drainage of the uterus. But even this comparatively safe method sometimes fails, and has therefore to be repeated. As will be seen by the report of one of my cases, I have performed this operation twice without affording more than temporary relief, namely, for only one period each time. Some of the New York gynæcologists recommend repeating the operation many times. This may be practicable with patients who have unlimited time and money, but is out of the question with the average patient here, even if the dread of operations did not offer a barrier to all further treatment after one or two failures.. The treatment by negative galvanism does not require any but the mildest currents which can barely be felt, but which cause no pain. This is very different from its use in arresting the growth of fibroids, where the result is very much in proportion to the strength of the current and where galvanic punctures are employed by many. On the contrary, this treatment is actually less painful than the mere passing of the sound, as will appear from the following brief description of the method which I employ. After a careful bimanual examination for the purpose of excluding pregnancy and of ascertaining the position and condition of the pelvic organs, the vagina is disinfected by a douche if this has not already been done at the patient's home. An ordinary Simpson's uterine sound of large size is then bent to the ascertained curve of the uterine canal, passed through the flame of the spirit lamp, cooled and insulated with a clean piece of rubber tubing to within two and a half inches of its extremity, or less if we have reason to think that the uterus is undeveloped. In the handle of the sound a hole has been bored just large enough to hold the tip of the conducting cord from the negative pole or last zinc of the battery. The sound is then guided into the os uteri on the tip of the finger, until it meets with some obstruction, when a current strength of ten milliamperes is turned on. In a minute or two the obstruction will seem to melt away and the sound will glide into the cavity of the uterus. The current is now gradually raised until the patient says she can feel it in the uterus, generally between twenty and fifty milliamperes, being at once lowered on the slightest complaint of pain. At the end of five minutes the current is gradually turned off again, when the sound will be found to drop out of its own accord almost, and very much easier than it entered. This may complete the seance, or as an adjuvant and safeguard, a boro-glyceride tampon may

be inserted. The patient may return home on foot and resume her duties forthwith, as such mild applications do not require any precautions in the way of resting, etc. The positive pole of the battery is attached to the ordinary clay abdominal electrode.

With these few preliminary remarks I will now report a few cases of dysmenorrhœa cured by this method.

Case 1.—Miss W. was sent to me 3rd June, 1888, by Dr. Reddy, with a uterine fibroid and enormous hypertrophy of the cervix. Her sufferings every month were unendurable. She had been employed as cook in a private family, but had to give up her situation, as during menstruation she was totally incapacitated. She described her pain as agonizing, her screams being heard all over the house. I gave her two applications a week from then till the 28th July of the same year, less than two months, when she reported that she had had a period absolutely free from pain. I continued to treat her for another month, but she had never had a painful period since, and was still menstruating regularly up to a few months ago, when I saw her last, in perfect health and doing all the catering and cooking for a large boarding house.

Case 2.—Mrs. D., a nullipara, 46 years of age, was brought to me in June, 1888, by Dr. Jeanotte. Menstruation was always painful, but became much more so since her marriage, growing worse and worse until for the last ten years she had to be kept under the influence of a hypodermic injection of morphine night and morning for eight days every month. This had completely broken down her general health. The cervical canal was so blocked and tortuous that I was unable, after six sittings, to introduce the sound further than one and a half inches. I then turned on the current, when to my surprise the sound slipped in a distance of five inches. This was the first time I had observed what had been known already for a long time, that the negative current had a marked dilating influence on a stenosed canal. After sixty five applications she was discharged cured of her fibroid and her dysmenorrhœa, and six months later Dr. Jeanotte reported to me that menstruation was regular like a healthy girl's and absolutely free from pain, never having had a dose of morphine since commencing the treatment. I have since heard that she has remained well ever since.

Case 3.— Miss B. Endometritis, menorrhagia and dysmenorrhœa cured by eight applications of the positive pole, which I employed in this case on account of the hemorrhage.

Case 4.—Failure with rapid dilatation repeated twice; cured by seven applications of negative galvanism. Mrs. T., aged 25, began to menstruate at the age of 12, was regular every four weeks, and lasted three days, but has always been from the very beginning terribly painful. She has been married two years, but has never been pregnant. I performed rapid dilatation a year ago according to Goodell's method, gradually extending the blades of his instrument during twenty minutes, until they registered a distance of an inch and a half at the end of the blades in the uterus. The next period was even more painful, so before the next one I again dilated the uterus to the full extent of the instrument, and endeavored to introduce a glass stem pessary, but owing to the rapid and powerful contraction of the internal os I was unable to do so. In January of this year she returned worse than ever, and I therefore gave her an application of negative galvanism, with the result that the next period, which came on in a few days, was only half as painful and was the easiest she had ever had. After this period was over I gave her six more between this and the next one, with the result that her flow came on without her knowing it, and continued so for three days, absolutely without pain

Case 5.—Mrs. G., aged 27, married five years, no children; never pregnant. First curetted her early in March of this year. Menstruation had begun at the age of 13, and had always been very painful, but has been much worse since her marriage. Uterus small and sharply flexed forwards and to the right. After five applications of about 25 milliamperes negative galvanism, next period came on without her knowing it. Uterine and peri-uterine tenderness greatly diminished, and she feels better generally than she nas done for years. Still under treatment.*

Case 6.—Mrs. O. While writing the history of the previous case a lady walked into

* This patient has remained free from pain ever since.

my office to engage me to attend her in her confinement. I recognized her as an old patient, and on hunting her up in my old case books I found her name and the following history: She came under my care in March, 1888, and was then 26 years of age, six years married, and never pregnant. She had been under the care of a surgeon for some time for dysmenorrhœa without benefit, but she only left him because he urged her strongly to have her ovaries out, and this she was reluctant to do, because it was the great ambition of her life to have a child. She had always suffered from dysmenorrhœa ever since puberty, but the suffering had become almost unendurable since her marriage, while locomotion and coitus were exceedingly painful. On examination, I found the left ovary enlarged, prolapsed and very tender, the uterus inflamed, and the cervical canal small and blocked with catarrhal secretion. Her periods were lasting eight to ten days. I applied fine wire faradism to the vagina with the bipolar electrode on the 19th, 22nd and 29th of March. Her next period only lasted two days, and the pain only lasted four hours instead of several days. On the 16th of April she had her first intra-uterine application of negative galvanism, the sound entering with great difficulty, but coming out very easily. The next menstrual period was almost free from pain, but I gave her negative galvanism again on the 2nd and 9th of May, 1888, after which I lost sight of her for two or three years, when I saw her on the stairs of the Woman's Hospital for a few minutes as she was on her way to visit a sick friend, when she informed me that she had not returned because her periods had been absolutely painless ever since. I did not see her again until this afternoon, 20th April, 1892, when, as already stated, she came to engage me for her confinement, stating that she had had no pain with her periods or at any other time ever since. She is now five months pregnant, and says she never felt better in her life. She attributes her having become pregnant, ten years after marriage, for the first time, to the effects of the electricity—of course, combined with the effects of natural causes; and although even if this be denied, this case is one more to add to over a hundred others published of women conceiving after having gone through Apostoli's treatment, contrary to the preposterous claim of Danion and others that Apostoli's method condemns the patient to sterility.

Case 7.—Miss X., a young lady of 26, and a great society favorite, came under my care a year ago, when, at the request of her physician, I performed rapid dilatation. The following is a brief outline of her case: She began to menstruate at the ageof 16, and though not regular the first yea r, became so after that, the flow generally lasting eight days. For the last four years her periods have been terribly painful during four days of the eight in every month, so much so that she has had to remain in bed the whole of that time, and she hardly recovered from the prostration caused by one period before the next one was due. At the operation I found the uterus very long and anteflexed; I took half an hour to dilate it up to one and a quarter inches, and painted the canal with iodized phenol. At the first period after the operation the pain only lasted three hours instead of four days, but at the second period the pain lasted two whole days; the third period was entirely free from pain; the fourth and fifth were almost painless, but the November, December and January periods were so painful that she had to go to bed for two whole days. I ordered dioviburnia for the three days preceding the February period, during which she only had one whole day of pain. As she was becoming discouraged I decided to try the negative galvanic pole in the uterus, so between this and the next period I gave her four applications of 30 milliamperes, without causing any pain, except for a moment while the sound was passing over the internal os. The result was that the March period caused her only two half hours of pain. Between this and the next period she had four more applications, the April period coming on without her knowing it, while she was at a party. The flow this time was steady and not in gushes, and was not dark and clotted as before. I think she is cured, but I intend to give her one more application a few days before the next period is due

Case 8.—Mrs. G., a lady from Three Rivers, 27 years of age, married seven years, but never pregnant, consulted me on 3rd February, 1892. She had first menstruated at 13, always normally until after her marriage, since

when the periods have become prolonged to eight days, scanty and exceedingly painful, and accompanied with the expulsion of pieces of skin after strong bearing down cramps. I at once commenced treatment by galvanism, and gave her in all eight applications between the 3rd of Feb. and the 18th of March, with the result that there was very slight pain with the February period, and absolutely none whatever with the March one. Neither were any membranes passed with the latter.

Case 9.—Mrs. B., aged 28, married six years, never pregnant, consulted me on the 22nd January of this year for dysmenorrhœa. Menstruation had begun at the age of 13, and had only been painful occasionally, always regular, and lasting three days. Since marriage it has always been very painful, and sne has suffered from dyspareunia. On examination, the uterus was found sharply anteflexed and very sensitive to touch. Previous to connecting the battery to it the sound could not be passed owing to the exquisite pain and spasmodic contraction of the internal os. But on connecting the negative pole to it and turning on 15 milliamperes, it easily glided in a distance of two and a half inches. From the 22nd to the 29th January inclusive she received four applications, 25 to 40 milliamperes negative, with the result that she told me on the 29th Jan. that she was now able to sleep all night, and that the pain in the pelvis was about half as bad as before. On the 2nd February she informed me that she had had a period with half the usual amount of pain. During February she received five applications, with the result that her March period was absolutely free from pain, although she had a heavy feeling in the pelvis which warned her that it was coming. During March she only received two applications, but her April period came on without her knowing it, or being prepared for it, while she was out walking. She stated that it was absolutely free from pain or even discomfort. I gave her two more applications, and discharged her cured.

I shall not try your patience with any more cases at present, although I could give a great many more, several of them followed by pregnancy. I could also report several other cases in which rapid dilatation failed at first, but succeeded after a second dilatation combined with the introduction of a glass or rubber tube. But enough has been said to convince you, I trust, that this is the easiest, safest and most satisfactory method of treating dysmenorrhœa we have ever possessed. At any rate, I maintain that the treatment by mild intra-uterine negative galvanism should be tried before and not after other means, as in that case the latter would seldom or never be required. Please take notice that some of these cases were treated nearly four years ago, and have remained well ever since.

Amer. Journal Obstetrics.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL,

Stated Meeting, April 1st, 1892.

F. BULLER, M.D., PRESIDENT, IN THE CHAIR.

Bothriocephalus Latus.—DR. JOHNSTON exhibited for Dr. Sutherland a specimen of this variety of tapeworm. The patient who had passed it is a woman aged 23, a native of County Cavan, Ireland, and has lived in Canada since October, 1885. She is a servant, and has lived during that period with the same family, and, with the exception of the three summer months in 1890, always in Montreal. It is difficult to date the onset of her symptoms, which were voracious appetite, headache, vertigo and vomiting. Dr. Sutherland gave her a purgative, and she passed the worm. The case is of intense interest on account of the extreme rarity of this variety of tapeworm in America. Dr. Leidy knew of no case indigenous in America, and all the cases he had seen were in immigrants. The worm is very common in Europe, especially Russia, Belgium, Switzerland and Ireland. This patient had, in all probability, brought the worm with her from Ireland six years ago. The cysticercus is found in the pike, perch, salmon and trout; but how it gets into these fish is uncertain, probably through some intermediate host, as a small shell-fish. Dr. Johnston gave a short account of the other varieties of tapeworm.

DR. F. W. CAMPBELL said he had lately seen a great many cases of worms, and he thought that many persons are affected and do not know it, and that the symptoms do not amount to anything until attention is drawn to them. The treatment is the same for all the varieties.

DR. MILLS said that all worms when passed should be burned and not carelessly thrown away, so as to prevent the lower animals becoming affected. Symptoms may range all the way from nothing to partial paralysis and

lameness. He cited the case of a dog that was lame, and which, after a purgative, passed four worms, and immediately recovered. He asked if pecan or areca nut had been tried in human beings, for it has long been looked upon as the best remedy for tapeworm in the dog.

DR. PROUDFOOT said that kamala, 60 grains three times a day or inside of five hours, was very efficacious.

Intercranial Cyst.—DR. HINGSTON showed before the Society a young woman who had been brought to him suffering from intense pain in the head and down the side of the face, and was at the time screaming violently. She was in an ensanguine condition, pulse very feeble, and apparently dying. He sent her to the Hotel Dieu Hospital, and the next day she was put under chloroform, and a horse-shoe-shaped incision was made on the right side of the head. about 2½ inches above the ear; the flap was turned up and a piece of bone about the size of a 25 cent piece removed, without injuring the dura; this was then cut through, and in the cavity of the arachnoid he found a small cyst, like a limited serous effusion or limited arachnoiditis; on opening this, fluid of the consistency of olive oil, but not pus, escaped, the membrane collapsed, and pulsation was observed. The wound was closed with fine silk, and union took place by first intention. She now has no pain, sleeps well, eats enormously, and has gained 20 lbs. in weight.

DR. SHEPPARD asked why the operation had been performed at that particular spot, if there was any history of injury, if there were any motor symptoms, and how such a condition could be distinguished from hysteria.

DR. LAFLEUR asked if the patient had been an epileptic.

THE PRESIDENT asked if the fluid had been examined, and if an ophthalmoscopic examination had been made.

DR. HINGSTON, in reply, said that there had been no motor symptoms, and the reason he had chosen that particular spot was that the pain seemed to be a little more intense there than in other parts of the head. She was not an epileptic, but there was a history of an injury twelve months before, when she was struck on the affected side of the head by a falling ladder. He replied in the negative to both the questions asked by Dr. Buller.

DR. SHEPHERD exhibited the following specimens obtained from the dissecting-room:—

(1) *Fissured Sternum.* The fissure was of small size, and was situated about the centre of the meso sternum.

(2) *Fracture of the Scaphoid Bone of Foot.* This was taken from a male subject who had lost his great toe and the terminal phalanges of the two next, due, evidently, to a crushing injury. The portion of the scaphoid articulating with the external cuneiform was separated. It was much increased in size owing to the throwing out of new bone, and had a large surface articulating with the cuboid bone.

(3) *Fracture through the Laminæ of the 5th Lumbar Vertebra.* This was found in a male subject. The separation of the neural arch found from the body of the 5th lumbar vertebra was complete, the arch being kept in place by the articulations with the first sacral vertebra. A false joint united the neural arch to the body, and there was no evidence of new bone having been thrown out. It was not a failure of union, as the separation was not in the line of the neuro-central suture. Dr. Shepherd could find no record of such a fracture in works on the subject.

(4) *A Displaced Abnormal Kidney with six Renal Arteries.* This specimen was found in the left side of a female subject. The kidney was an abnormal one with an anterior hilum; its lower end was situated near the commencement of the internal iliac artery, the hilum being opposite the bifurcation of the aorta. It received two arteries from the abdominal aorta, two from the common, and two from the internal iliac arteries; these vessels entered it on the internal border from the superior to lower end. One artery of large size, however, wound round beneath the kidney and entered its convex external border. This vessel came from the internal iliac, and was opposite the hilum. The veins were also multiple. The supra-renal capsule was in its normal position, and did not descend with the kidney, being separated from it by several inches. The right kidney, although normal in position, was supplied by three arteries. Dr. Shepherd remarked that multiple renal arteries occurred in his experience in about 10 per cent. of subjects, and were due to a persistence of the primitive condition, where a separate artery is supplied to the kidney opposite each vertebral segment. These anomalies were of great importance to surgeons, and night give rise to serious trouble in extirpating the kidney. Dr. Shepherd related a case where he had met with these supernumerary vessels in operation on the living subject.

Five Laparotomies with four recoveries and one death.—DR. LAPTHORN SMITH said: I have to report the following five cases in addition to those I have already reported to this Society, although the pleasure of doing so is marred by my having to acknowledge my second death:—

Mrs. S., aged 64, a patient of Dr. Aubrey, of Côte St. Paul, came under my care on the 17th July, 1891, giving me the following history: Menstruation had commenced at 16, and had always been regular, though painful the first two days, and always profuse, lasting a week. She was married at 21, and has had only one child, who is now 42 years of age. Since the

birth of her child menstruation has been almost painless until it stopped at the age of 46. Twenty-four years ago her left breast was removed for cancer, by the late Dr. R. P. Howard, and there has been no recurrence of the disease. Three years ago she began to have trouble with her water, being unable to hold it, and six months before my seeing her she had noticed a lump growing in the abdomen. On bi-manual examination I found a hard, oval tumor rising to the level of the umbilicus above and projecting into the pelvis below, and it had a nodule on either side of it the size and shape of ovaries. The abdominal wall was very thin, and the tumor was freely movable in the abdomen. On pushing up the cervix uteri, motion was communicated to the tumor, and pressure on the tumor caused motion of the uterus. It presented the symptoms of a fibroid tumor in the fundus uteri, with portions of it in a cystic condition. Fearing that the tumor might be cancerous, the patient was very anxious for an operation. Accordingly, with the assistance of Drs. Perrigo and Springle, and in the presence of Drs. Aubrey and Mitchell, I performed abdominal section at Strong's Hospital. On opening the abdomen the tumor was found to be fibro-cystic, but there were a great many very tensely filled loculi, the larger ones of which I emptied. But it had no connection whatever with the uterus or ovaries. It seemed to spring from the mesentery about the level of the second lumbar vertebra. On endeavoring to find a pedicle to tie I found that a coil of intestine was so intimately connected with it that it would have been impossible to have enucleated it down to the vertebra without tearing the peritoneum off the intestine. The tumor was behind the peritoneum, and in endeavoring to peel the latter off it I exposed the right ureter and right common iliac artery. As I was prepared for hysterotomy I had a *serre-nœud* with me, so I passed the cord of it around the base of the tumor as far back as I could without catching the above-mentioned coil of intestine, and tightened it up and cut off the tumor. In freeing it from adhesions a good deal of oozing occurred, which required a great many silk ligatures to arrest, but finally the abdomen was cleaned dry and the *serre-nœud* was brought out with its very short stump, which was not more than three-quarters of an inch long from the spinal column. In fact, it would be more correct to say that the very slack abdominal walls were brought under the *écraseur* so as to embrace the stump, and two pins were passed through the stump above the *serre-nœud* to prevent it from slipping off. The abdomen was closed with silkworm gut and no drainage tube was used, the wound being dressed with dry boracic acid and absorbent cotton. The *écraseur* came away about the twelfth day with a small slough, the temperature never going above 100°. About the fourth day a clear, slightly yellow, watery discharge was noticed welling up from the inferior angle of the wound in considerable quantity. It had no odor, and I was uncertain of its nature, although I thought it might be lymph coming from the thoracic duct, which I feared I had included in one of my ligatures which had been placed very near the duct. On the other hand, it might have been urine escaping from a possible wound of the bladder. I therefore introduced a glass catheter into the bladder, and left it for some hours without at all diminishing the flow from the wound. In order to be certain about it, I placed the patient on her face for a few hours, and collected a few ounces of the fluid, which I handed to Dr. Bruère without telling him where it came from. He next day handed me the result of a careful chemical analysis, clearly proving that it was urine, and convincing me that it was due to a wound of the ureter. The patient made an excellent recovery for her age, being able to walk about outside in two months, and frequently driving into town since. I devised a great many contrivances for catching the urine and conveying it into a rubber bag attached to her leg, but none of them was satisfactory ; but after a few months the fistula gradually ceased to flow, and now there is only a slight moisture.

Mrs. W., æt. 36, came under my care in January, 1891, for a very close stricture of the rectum, which would hardly admit a No. 8 catheter. Her abdomen was enormously distended. She had no previous history of syphilis, nor did the stricture present the appearance of being malignant. It seemed rather to have been due to simple ulcer of the rectum, which had been repaired by cicatricial retracting tissue. She called my attention to a lump in the abdomen extending across from one hypochondriac region to the other, and extending downwards and backwards in the direction of the descending colon. I took her into my ward at the Women's Hospital, and called a consultation of the staff. In the opinion of the majority, myself among the number, this lump was thought to be an accumulation of fæces due to the impossibility which existed of anything but liquid motions passing so small an opening as her rectum. I divided the stricture backwards towards the sacrum in the middle line, and opened it up to two inches in diameter. She took a powder containing 40 grains of compound jalap and 10 grains of calomel, with the result that she passed a great many very copious stools with great relief of the distension and partial disappearance of the tumor. The purgation was repeated a few times with still further benefit, and she was discharged feeling remarkably well. She remained so for about a year, when, having

neglected to pass the bougie, her stricture returned and the abdomen filled up as before. I again divided the stricture and cleared out the bowels, but the abdomen remained distended with ascitic fluid, and the lump between the umbilicus and the ensiform cartilage could now be felt very distinctly. She was very anxious to have this fluid drawn off, but declined any serious operation for the present. I therefore decided to make an incision to let out the water, and at the same time to settle the diagnosis of the tumor, whether it was fæcal accumulation or malignant disease of the intestine. Accordingly, assisted by Dr. England, and in the presence of my class, on the 20th of February, I made a two-inch incision between the ensiform cartilage and the umbilicus, allowing a quantity of straw-colored serum to escape. On introducing my finger and raising the omentum, a hard, slightly nodular tumor could be felt occupying the situation of the head of the pancreas, which was enlarged to the size of an orange. As I had not been able to obtain the patient's consent to removal of the tumor at present, I replaced the omentum and sewed up the incision with silkworm gut, obtaining union by first intention and without the temperature ever rising above 99¼° during the next two weeks, when she was discharged. In fact, she was sitting up next day. It is my intention, as soon as she consents, to undertake this rather formidable operation of removing the tumor, as it is evidently beginning to endanger her life very seriously.

Miss X. came under my care at the Women's Hospital on the 27th February, 1892, with the following history: She had always been healthy, with the exception of having lost the use of one eye and ear after scarlet fever. She was seduced by a commercial traveller, and was delivered at term on the 29th January. The perineum was very unyielding, and a laceration of both it and the cervix occurred, the former being torn through into the rectum, which latter, however, was promptly sewed up by Mr. Hackett, the house surgeon. On the 30th her evening temperature was a little over 99°, on the 31st it rose to 103°, and next day to 104°. From that time till the 24th February, her temperature oscillated between 104° at night and 97½° in the morning. As soon as the temperature began to rise, Dr. Reddy ordered the stitches to be removed from the perineum, which was found to be suppurating, and every antiseptic measure was employed, such as bichloride intra-uterine injections, etc. She was transferred to my care on the 27th February, when, on examination, I found the uterus and appendages all glued together in a mass of peritonitic exudation, as though they had been set in plaster-of-Paris, the roof of the vagina feeling like a solid board. In Douglas's cul-de-sac could be felt a prominent oval body extremely sensitive to touch, which was thought to be the ovary. I diagnosed pus tubes leaking into the peritoneal cavity, and strongly advised abdominal section, in which my colleagues concurred. Accordingly, as soon as the consent of the patient and her friends was obtained, which required eight or ten days, during which her condition became more and more alarming, I opened the abdomen, with the assistance of Dr. England, on the 5th of March, in the presence of twenty members of my class and visitors. After cutting through the abdominal wall I was unable to get into the peritoneal cavity owing to omental peritoneum being glued to the parietal peritoneum by solid cheesy exudation. On extending my incision a little lower down I came upon an abscess cavity containing half an ounce of pus apparently between the omentum and the parietal peritoneum, which had been walled off by exudation. After cleaning this out with a weak bichloride solution I tried to get into the pelvis by that road, but could make no headway. I then tried to enter by the upper end of my incision, which I managed to do. By pushing aside the omentum above the point where it was adherent half way up to the umbilicus, I was able to introduce my finger into the abdomen. I then dug away for a quarter of an hour in Douglas' cul-de-sac, and succeeded in extracting the two ovaries, which I brought to the surface. The patient had given her consent to the operation on condition that I would spare her ovaries if they were not seriously diseased, and as they appeared healthy I returned them. I then made a search for the tubes, but it was impossible to distinguish them from the solid lymph in which they were imbedded. At one time I dug out with great difficulty what seemed to be one of them, and tied and removed it, but no trace of the tube could be found in it. On the left side of the uterus I could feel about a half an inch of the tube. On the right side I could not distinguish it from the solid material in which the uterus was imbedded. Even the space between the uterus and bladder was filled in with this lymph cement, so firmly, that I could plough a furrow with my finger tip between them, but could not tear this material off the uterus. By this time I felt that to continue longer would be endangering the patient too much, so I washed out the abdomen with several gallons of hot water, introduced a good sized drainage tube, and closed the wound with silkworm gut. The patient vomited a good deal, but reacted nicely, and on the fourth day the drainage tube was removed, by which time the bloody exudation had changed to lymph. On removing the tube I had to rotate it, when something gave way, and on examining the tube I found a tiny segment of intestine in one of the holes. The day following, my attention was called to the

dressing, which had been kept for me, and which I found to be saturated with bile coming from a small intestinal fistula. This, however, gradually diminished, and at the end of a week had closed entirely. The temperature did not fall to normal until the fifth day, since which it has never gone above 100°, and it has reached that only once or twice. This is now the 26th day, and the patient is walking about the ward eating heartily, and free from pain and fever, and is to go home to-morrow. The stitches were removed on the 20th day.

Mrs. L., a very stout Indian woman, 35 years of age, came under my care at the Montreal Dispensary with all the complete set of reflex symptoms which would have filled the programme for either an umbilical hernia or a lacerated cervix, both of which conditions act as irritants to the great sympathetic nerve. In order to cure her, I determined to remove the two sources of irritation at the same time; so after a few weeks preparatory treatment I took her into the Women's hospital, and, with the assistance of Dr. England, performed abdominal section. The incision was begun four inches above the round opening in the abdominal wall, and had to go through more than two inches of fat before reaching the external oblique. In continuing my incision downward on the director inserted under the skin I suddenly came upon many coils of the intestine over which there was absolutely nothing but the parietal peritoneum and the skin, which was not thicker than the finest kid. If I had made my incision as usual through the skin I would certainly have gone through the intestine, of which there was much more than one would have any suspicion of there being, judging from the outside appearance. Just above the hernial sac the abdominal wall was fully three inches thick, while over the sac it was not more than one-sixteenth of an inch thick. The intestine was returned and the hernial opening was closed with carefully prepared catgut. Previous to closing the opening, three silkworm gut sutures were passed about an inch from the edges of the opening, and they were only tied after the opening was closed with the catgut. My object in not dissecting out the sac was, to obtain a larger area of adherent surface than could be obtained by leaving only the clean cut edges of the peritoneum. The wound was dressed with dry boracic acid, and the patient being drawn down to the edge of the table, her cervix was repaired according to Emmet's method. The two operations consumed less than an hour, the A. C. E. mixture being used. She had no vomiting afterwards, and she was up and about on the 14th day, and is going home to-morrow, the 21st day.

Mrs. B., æt. 36, came under my care at the Montreal Dispensary, suffering from pain and other symptoms which appeared to be due to a tumor filling the right vaginal fornix and pushing the uterus to the left, which was very tender on pressure and firmly fixed to the floor of the pelvis, and which I took to be ovarian. Acting on the principle that all ovarian tumors should be removed as soon as diagnosed, I advised operation, to which the patient consented, owing to the severe attacks of pain and reflex symptoms. My colleagues concurred in the advisability of this course, and, accordingly, on the 5th March, assisted by Dr. England, I made a section. The adhesions proved to be very dense, and snapped like violin strings. When near the surface the tumor burst, and its contents escaped into the abdominal cavity. The cystic ovary and tube of the right side was ligated and removed. The abdominal cavity was well irrigated with boiled water, a drainage tube inserted, and the wound closed with silkworm gut. There was a great deal of vomiting and thirst, and I allowed her to take considerable water. She was very restless on the third day. There being nothing but a little clear serum coming from the tube, I removed it, and ordered salines to start the bowels; and that night they suddenly began during the temporary absence of the nurse, when the patient raised herself in bed to reach to the bed-pan, but fell back in a faint. During the night they were moved a great many times, and she complained a great deal of pain. When I saw her on the morning of the fourth day she was very comfortable, although her pulse was weak and rapid. There were no other symptoms of hemorrhage, but her face appeared haggard. That evening I was hurriedly summoned and found her sinking fast. She did not appear blanched, and I did not feel justified in opening her. This was a mistake, for she died a few hours later, as I believe, from hemorrhage, although the friends absolutely refused to allow a post-mortem.

Dr. Hingston had met with a somewhat similar condition, though there was no hernia, and the patient enormously fat, and that he had come down on the peritoneum when he least expected to.

Gastro-Enterostomy.—Dr. James Bell then read a paper on this subject,

The patient, a young married woman, 31 years of age, was admitted to hospital, under

care of Dr. George Ross, on the 24th of February, 1892. She complained of headache, dizziness, constipation, vomiting and pyrosis. The first appearance of these symptoms dates back to the fall of 1890, when they seem to have come on rather suddenly. The vomiting at this time is described as coming on in periodical attacks, at no particular time of the day, sometimes on rising in the morning, and at other times during or after meals,—never before. The vomited matter consisted of partially digested food, but never contained any blood. These symptoms continued practically unchanged until about four months prior to admission to hospital, when she consulted a physician, who examined her and diagnosed pyloric obstruction with consequent dilatation of the stomach, and had the stomach washed out every morning with great relief to the symptoms, especially the vomiting. Only about one month before admission to hospital was the tumour discovered by the patient herself. She thinks it has not increased in size since she first discovered it. She has been steadily losing weight since the illness began, but has never suffered any pain except a slight distress before vomiting, which was always relieved by evacuation of the stomach contents.

Personal History.—Patient was born in Scotland, and came to Canada at the age of two years. She was brought up in the country and lived on a farm until twenty years of age, when she came to Montreal as a general servant. Five years ago she got married and returned to the country. She has had two children and one miscarriage. The youngest child is five months old. She has always enjoyed good health, with the exception of an attack of inflammatory rheumatism when twelve years of age. Has never used alcohol in any form.

Family History.—Father dyspeptic; no history of cancerous, tubercular or neurotic disease.

Present condition.—Patient poorly nourished, though not emaciated; pale and anæmic. Bowels constipated, moving only every two or three days. Temperature 97°F.; pulse 92; respirations 30. Heart and lungs normal. Urine: sp. gr. 1028; clear amber colour, free from deposit, no sugar nor albumen. Abdomen somewhat distended, particularly about the umbilical region. A dilated stomach with a hard, nodular, movable and painless tumour at the pylorus is easily recognized; the tumour is apparently about the size of an orange, and lies below and to the right of the umbilicus. Hepatic and splenic dullness normal. The stomach was washed out daily, and on the 2nd of March the patient was transferred to the surgical side. Careful examination on two different occasions failed to show any free hydrochloric acid in the stomach contents. The only important point in diagnosis which could not be decided was whether the growth was malignant or simply cicatricial. The patient was prepared for operation as follows. On the 3rd of March the bowels were thoroughly cleared out by a saline purge. On the 3rd and 4th she was allowed only peptonized milk (three pints daily), and the stomach was washed out twice daily with warm water. The last food was given by mouth at 5 o'clock p.m. on the 4th, and the stomach was washed out at midnight with boro-salicylic solution (Thiersch's). This was repeated on the morning of the 5th and again re-12.30 p.m., just before operation, the last washing being very thorough. The patient had two enemata of peptonized beef-tea on the morning of operation, the last being at 12 o'clock, and consisting of four ounces (the first of five ounces, at 8 o'clock a.m.). Her weight was 95 lbs. When the stomach was emptied the tumour was found to have receded up beneath the lower costal margin, and was only evident on expiration, when it came down below the border of the ribs. The patient was etherized and an incision made in the median line from near the ensiform cartilage to the umbilicus. The stomach was drawn up through the wound, when it was found that the tumour consisted of an infiltrating growth of the stomach wall at the pyloric extremity, involving its whole circumference and more than a third of the organ in length. There were no adhesions, and the growth was sharply defined by the pylorus, the duodenum being quite free. Hard, infiltrated and enlarged glands were found in the gastro-hepatic-omentum, the mesentery, and behind the peritoneum (retro-peritoneal glands). The tumour was evidently carcinomatous, and the disease had spread widely along the neighbouring lymphatics. On this evidence the question of excision of the growth was promptly negatived, and the decision arrived at to establish an anastomosis between the stomach and the jejunum. The transverse colon and the great omentum were drawn upwards and the jejunum found without any difficulty. It was then approximated to the anterior wall of the stomach about an inch above the greater curvature, and an inch and a half beyond the margin of the growth. They were attached by a curved line of fine silk sutures (continuous), including the peritoneal and muscular coats only, which was intended to strengthen and perfect the approximation of the peritoneal surfaces below the inferior borders of the incisions. (These sutures could not be introduced after the rings had been inserted.) A longitudinal opening about 1½ inches long was now made into each viscus about a quarter of an inch above the line of suture, which brought the incision in the jejunum to within a quarter of an inch of its free border and about 8 or 10 inches from the end of the duodenum. There was free bleeding when the incisions were made, but this was arrested as soon as the rings were introduced and a little pressure made upon them. Abbé's catgut rings were now inserted, each

having an opening 1¾ inches long. The surfaces were then brought together and the threads tied, and another line of Lembert sutures was carried along the superior border of the rings to connect with the extremities of the one already introduced. Towards the pylorus this was continued for about an inch to prevent the too abrupt flexion of the distal extremity of the bowel. These manipulations were conducted practically entirely outside of the abdomen, and the whole operation, from the first incision until the closure of the abdominal wound was completed, occupied fifty-six minutes. The anastomosis was completed in forty minutes. The original intention was, of course, if the condition of the parts had justified it, to excise the pyloric end of the stomach, invert the edges, and close the wounds in both stomach and duodenum, and then to establish the anastomosis as above described. As already stated, the intention of excising the tumour was abandoned on account of the extensive involvement of the neighbouring lymphatics. The patient's condition remained good throughout the operation. She was allowed nothing whatever by the stomach for 48 hours. She was then allowed a little water and a little peptonized milk alternately in gradually increasing quantities. On the fifth day she was allowed plain milk, and on the eighth day chicken broth and porridge. For three days after operation the beef-tea enemata were continued, and for the first 48 hours saline injections were given by rectum to relieve thirst, which was not excessive. Patient had a small stool on the night of the 5th (day of operation), and passed flatus by rectum freely next day. On the 7th there was some hiccough and patient vomited twice small quantities of dark liquid with a heavy, offensive odor (not fæcal). Bowels moved again in the night.

March 8th.—Coughed some during the night. Vomited once 18 ozs. of yellow liquid with offensive odor. Temperature, which had hitherto been normal, rose to 99½F.; pulse also rose to 100. Bowels moved three times. Complained of great pain in right side of pelvis after last enema.

9th.—Patient much disturbed by cough, otherwise comfortable and inclined to sleep. Bowels moved once. Pulse 108; Temperature 101°.

10th.—Cough very troublesome. Bowels moved three times. Patient slept well in intervals of coughing. Temperature reached 100°; pulse 96.

11th.—Cough continues troublesome. Temperature reached 99.2°; pulse 108. Patient slept well.

12th.—Temperature 99°; pulse 108. Patient comfortable except for cough.

13th.—Temperature 98½°; pulse 104. Patient slept well; still coughing.

14th.—Vomited porridge, first vomiting since the 8th (five days). Slept well. Temperature reached 99½°; pulse 104.

15th.—Vomited again. Slept well.

16th.—Vomited 28 ozs. fluid. Temperature 99.3°; pulse 110.

17th.—Patient woke up in the night complaining of severe pain in the abdomen, which lasted 25 minutes. Slept two hours and awoke feeling cold, but had no chill nor rise of temperature. Pain continued at intervals. From this time till the afternoon of the 24th, when she died, the course was gradually downwards. Pain, requiring morphia for its relief, weakness, emaciation some vomiting (not frequent nor severe), cough and perspiration were the symptoms observed. The pulse became weaker and ranged from 100 to 112, and the temperature remained practically normal, sometimes reaching 99.5°.

There were thus two distinct events occurring in the twenty days during which the patient lived after the operation. First, a troublesome cough coming on on third day, accompanied by rise in temperature and rapidity of pulse, but which gave rise to no physical signs; and second, sudden seizure of pain in the abdomen on the night of the twelfth day after operation, at which time, I have no doubt, the fatal peritonitis began.

The following is Dr. Lafleur's report of the autopsy made four hours after death:—

Report of Autopsy in Case of Carcinoma of the Stomach, Operated on by Dr. Bell.—"Body emaciated, sallow and anæmic. Visible tumor in right hypochondrium and epigastrium. Linear scar in median line, in epigastrium and upper umbilical regions. On opening peritoneal sac the peritoneal coat of the intestines was found reddened and turbid. Loops of small intestine adherent to the floor of the pelvis. Adhesions recent, and composed of yellowish fibrinous material; a few fragments of the same material were found on the surface of the spleen. A firm tumor mass, freely moveable, occupied the pylorus and the part of the stomach immediately adjoining it. The operation-wound between the first portion of the jejunum and the lower and anterior part of the stomach was completely united and in a healthy condition. The jejunum, a short distance above the anastomosis, is adherent to the transverse colon, and, on tearing through a few recent adhesions, a small pocket of thick, yellowish-green pus, about 2 x 1 inches, was exposed, which lay partly in the meso-colon, which was thickened and infiltrated. In doing this a portion of the proximal jejunum, which was softened and necrotic at this point, was torn away. At this point the end of the duodenum appears to have been twisted into a sharp S-shaped curve, and was slightly strangulated. On opening the stomach the little finger could be forced with some difficulty

through the pyloric orifice. This and a portion of the wall of the stomach were occupied in their whole circumference by a firm, pinkish-yellow, infiltrating mass of new growth. The exposed surface of this was irregularly nodular, and showed in places a distinct loss of substance. On section it involved all the coats of the stomach, was firm and resisting, and of a yellowish-white colour. The opening between the stomach and jejunum measured 1¼ x 1 inch, and was perfectly patent. Around the edges, in the stomach, and in the jejunum were the remains of the plates used at the operation; the plate in the stomach was still firm and scarcely altered in three-fourths of its periphery, while the plate in the jejunum was disintegrated and soft. The duodenum, from the pylorus to the point of constriction above mentioned, was moderately dilated, and contained fluid material of a greyish-yellow colour. The lymphatic glands nearest the tumour were slightly enlarged and infiltrated, and were somewhat firm and of a yellowish-grey colour. There were no metastases in the liver, kidneys, spleen, lungs or peritoneum. The spleen was enlarged and soft. Cover-slip preparations from the small abscess cavity showed a variety of bacteria, chiefly short, thick bacilli in pairs, longer, thick bacilli, and a few cocci. There were no chain-cocci observed. The absence of stitch abscesses and the healthy condition of the anastomotic wound, the appearance and diversity of the bacteria found in the pus, the late development of peritonitis, and the occurrence of an abscess in proximity to a necrotic portion of the intestine, point to infection from the intestinal tract. The microscopic examination of a portion of the tumour shows it to be scirrhus."

The peritonitis, which was the direct cause of death, was not due to any failure in the technique, nor to any yielding of parts and escape of contents. In fact the union is particularly good, as the specimen shows. According to Dr. Lafleur's explanation, it was due to kinking of the first part of the jejunum from having been doubled up too acutely upon itself. This is an interesting observation, as the rules laid down are to unite the jejunum as high as it can be attached without dragging. Ten or twelve inches are mentioned in several reports of successful cases as the point of attachment. In others where the jejunum could not be easily found, any convenient loop of small intestine has been attached. In one such case, mentioned by Lauenstein of Hamburg, the patient died of inanition, and at the autopsy the loop of bowel attached was found to be the lower part of the ileum. In the case which I have just reported, I judged that the incision was made about eight or ten inches from the end of the duodenum. There was no dragging, and the loop seemed quite long enough and showed no tendency to acute bending or kinking. Probably if I had continued my line of suture along this loop, as I did along the distal end to form a spur, the fatal result might have been averted. I cannot help thinking, however, that the acute bending of the bowel may have been due to some special cause—possibly, for instance, the regurgitation of part of the fluids taken into the stomach backwards into the duodenum, and the dragging of this weight especially during the paroxysms of coughing which began on the third day. The dilated condition of the duodenum shows that such regurgitation occurred, and, in fact, it cannot fail to occur in this operation. Again, it is, I believe, a recognized fact that patients in advanced malignant disease are more prone to inflammatory attacks of this kind.

There was in this case no room for any choice of operation. Had the growth been cicatricial and non-malignant—a condition which before operation we felt that there were some reasons for hoping that we might discover—Loreta's operation of dilating the pylorus or the operation of incision and transverse suture would have claimed consideration in selecting the best method of re-establishing communication between the stomach and the intestines. As it was, however, having decided not to remove the growth, it only remained to establish the connection by lateral anastomosis, and for this purpose I used Abbé's catgut rings, which seemed to me to be the best of the various devices of the last few years for approximation purposes.

The operation recommended by Dr. Bernays of St. Louis, of curetting the pylorus in malignant disease, would have been quite impossible in this case owing to the great density and firmness of the growth, even if it could, under any circumstances, be considered a scientific or justifiable operation. This method of approximating the hollow viscera by means of plates or rings, which was introduced by Senn and adopted, until quite recently at least, by most American surgeons to the almost entire exclusion of other methods, has, since writing the above, been discussed in the New York Academy of Medicine. The reports of the discussion show that a number of objections were urged against the use of plates and rings and the method generally, while the tendency seemed to be towards a return to the older method of direct union, or, in suitable cases, lateral anastomosis by suture alone.

DR. SHEPHERD thought that this was the first operation of the kind performed in Canada, and regretted that the result had not been more successful, for the technique was without fault. He had been interested to note that the American surgeons are discarding rings

and going back to the immediate suturing of the two openings in the intestine.

DR. MILLS asked what was the reason that a loop of intestine had been retained, and how was the digestion affected in these cases?

DR. BELL said that rings alone without layers of sutures are insufficient; the advantage in the use of rings is that it greatly shortens the operation. In answer to Dr. Mills he said that it would have been impossible to remove the affected tissue, and that the digestion must be more or less impaired.

Stated Meeting, April 15th, 1891.

F. BULLER, M.D., PRESIDENT, IN THE CHAIR.

Double Hydro Salpynx.—DR. FINLEY exhibited the specimen, and gave the following account of the autopsy: A woman, aged 40, a confirmed drunkard, with evidence of syphilis in the thickening of the skull-cap. The uterus was pushed to the left side by a large cyst on the right. The right tube passed into the cyst; the ligament of the ovary was seen, but the ovary itself was closely blended with the walls of the cyst; the cyst contained a clear yellow fluid. A smaller cyst was seen on the left side. The woman had evidently born children, as there were seen scars on the os uteri and lines on the abdominal wall.

Cerebral Hemorrhage.—DR. FINLEY gave the history of an autopsy performed on a patient who had died suddenly. A large hemorrhage was found on the right side of the brain, and which had ruptured into the ventricles. It was outside the optic thalamus, and was as large as a hen's egg. The kidneys showed granular degeneration, and the left ventricle of the heart was hypertrophied. The arteries of the brain showed plaques and much thickening of the intima. It was a case of granular kidney with sclerosis of the cerebral arteries, but no miliary aneurisms were found.

DR. ARMSTRONG related the clinical history of the case. The patient, who was a middle-aged woman, hardly 40, had first come under his care a year ago for dyspeptic symptoms. The urine was free from albumen and the specific gravity was normal. He did not see her again until a week before her death, when she consulted him for lowness of spirits, melancholy, loss of appetite, and general weakness. The urine was then found loaded with albumen, granular and hyaline casts; he had not detected any sclerosed condition of the arteries. The history of the attack, as given by her friends, was that she had been at church, and owing to the nature of the discourse had become very excited; while she was walking home her right leg gave way, and she took a few dragging steps, and within a few minutes lost consciousness. Dr. Armstrong had seen her just before death; respirations ceased first, the pulse remaining good.

DR. HUTCHINSON had seen the patient immediately after the seizure. She was in a convulsion like that due to uræmia, and he was in doubt whether the hemorrhage occurred in the first place or followed the convulsion. He had found her in a state of opisthotonos with rigidity of the muscles of the arms and legs.

Vesical Calculus.—DR. JAS. BELL exhibited a small calculus which he had removed from the bladder of a boy of 14, who had exceedingly slight symptoms for six months, there being only a little pain after micturition. No pus or blood was ever present in the urine, which only differed from normal by containing a somewhat larger quantity of suspended mucus.

Renal Calculi.—DR. BELL also exhibited six small calculi removed from the kidney of a woman. The patient is doing well.

Photographs of Lepers.—DR. WESLEY MILLS exhibited two photographs of Chinese, from the leper colony near Victoria, British Columbia. One showed the tubercular form with the anæsthetic areas distinguished by the light patches on the skin; it also showed well marked flattening of the side of the face. Dr. Mills remarked that leprosy is now generally admitted to be due to a bacillus, which is characterized by being present in greater numbers in the affected parts than any other micro-organism. The disease is characterized by great hypertrophy, nodules and anæsthetic areas of the skin, and the lengthened period of latency, which often extends over years. The onset is marked by great langor of both mind and body. Whether the flatness of the face seen in one of the photographs was due to paralysis or atrophy of the muscles it was impossible to say.

DR. JAS. BELL also exhibited a number of photographs of lepers in the colony of Honolulu. They had been presented to him by Dr. John Brody of Honolulu, and were duplicates of photographs presented by Dr. Brody to Prof. Arning of Hamburg, who had spent some years in the study of leprosy in the Sandwich Islands.

DR. SHEPHERD said that leprosy is on all hands admitted to be of bacillary origin. The different forms are but different stages of the disease. Inoculation has been performed with success on criminals in Honolulu. He had met with three cases in Montreal, all being from the West Indies.

DR. FOLEY said that it was essentially a germ disease, and not of nervous origin. Though the germs have been found in the tissues, they have not, as yet, been found in the blood.

DR. MCCONNELL said that lowered nervous vitality favored the production of all infectious diseases. The slow progress of the onset may account for it not being looked upon generally as infectious.

Discussion on Appendicitis.—DR. ARM-

STRONG brought before the Society a man on whom he had operated for recurrent appendicitis. In 1883 the patient had an acute attack, from which he recovered in a fortnight. He was well for six months, when another attack occurred, and a third in another six months; then they occurred every two or three months, becoming more and more frequent, until latterly he had one every three weeks. Each attack consisted of pain and vomiting, and kept him in the house three or four days. Two years ago, assisted by Drs. Roddick and Bell, Dr. Armstrong removed the appendix, which was whole and surrounded by numerous adhesions. The recovery was rapid, and the man has been perfectly well ever since. Speaking on the subject of appendicitis, Dr. Armstrong said that as a cause of mortality it is far greater than is generally believed. He had obtained the Canadian Government mortality tables, and found that for months there would be no record of a death from this cause, but from his experience he believed it to be a very common disease. It is now generally conceded that if attacks recur with such severity as to incapacitate the patient for business, an operation is necessary, and should be performed a few days after an attack. It is often a difficult question to decide whether it is right to operate or to wait. He had searched the literature on the subject and found the advice so varied and so different, that he deemed it the wisest plan for each one to follow the course his own experience indicated. The medical or catarrhal cases have not been so frequently met with by him as the severe forms which end fatally. The symptoms usually are distinct pain, which may be general or may be referred to the region of the umbilicus, with distinct tenderness over McBurney's point, rigidity of the muscles, vomiting, increasing rapidity of the pulse, and an elevated temperature. If these symptoms are still on the increase at the end of twenty-four or thirty-six hours, he advised operation, and on no account to look upon this procedure as a *dernier ressort*. Mikulicz of Königsberg has divided the peritonitis following this condition into general and progressive. In the latter form the peritonitis is localized, with a wall of inflammatory tissue about it. Every twenty-four or thirty-six hours a new area is invaded; if operation is performed early it prevents this local condition from becoming general. He (Dr. Armstrong) greatly deprecated the use of purgatives, for if there is rupture and escape of septic matter, the active peristalsis will prevent the peritonitis from becoming localized, and tend to diffuse the septic matter throughout the cavity and set up a general peritonitis. He had met with two cases in which, at the autopsy, purulent matter could be traced up the portal vein, with abscesses in the spleen and liver. In another case there was a septic thrombus in the lung. So from his experience of cases that are severe, he thought that a thoroughly aseptic operation is much less dangerous than to allow the trouble to go on.

DR. SHEPHERD related a case upon whom he had operated in the interval between the attacks. The operation had been performed some weeks ago on a gentleman who, during the past eighteen months, had had nearly a dozen attacks of appendicitis. Some of these were very severe, being accompanied by chills, fever and vomiting, and also severe pain in the right iliac fossa. Latterly the attacks have been coming on about every six weeks; he could not attend to his business, and dared not leave town for a day, for fear of having an attack out of reach of skilled surgical assistance. So he decided, on the advice of Dr. Geo. Ross and the speaker, to have the appendix removed. The operation was performed on March 28th, and the appendix found without difficulty. Strange to say, there was scarcely any evidence of inflammation about it; it floated quite free, but was rather larger than normal, and tense and fluctuating. It was tied off near the cæcum and removed, the cut end being cauterized before being returned into the abdominal cavity. The wound was closed with silkworm gut sutures, a small drain being left at lower end. This tube was removed at the end of forty-eight hours. Convalescence was uninterrupted, and patient left for home at end of three weeks. The appendix, on examination, appeared full of muco-pus, but no infective bacilli were found in it. Dr. Shepherd stated that he believed that this was a case of catarrhal appendicitis, and would probably have ultimately ended in perforation and abscess. He remarked that he now felt much more inclined to operate in the interval in cases of recurrent appendicitis than formerly.

DR. JAS. BELL related the history of a somewhat similar case. A young man, aged 21, was first seized in the early part of December last with the ordinary symptoms—pain, vomiting, fever, localized tenderness, and a mass to be felt in the fossa. He never got well enough to resume his work, though he twice attempted to do so, but was only able to work for about half an hour. It was an almost continuous attack, but with remissions. At the operation Dr. Bell found the appendix large, very adherent, and constricted about three-quarters of an inch from the cæcum. It was full of muco-pus, the exact counterpart of that found in Dr. Shepherd's case. Since the operation his patient has done well. Dr. Bell also mentioned a case under the care of Dr. Roddick, and operated upon about the same time, which was of another type,—rapid, acute symptoms, with more or less evidence of general peritonitis. At the operation there was found pus or sero-

pus about the appendix, which was not walled off from the general peritoneal cavity, and the patient died. And still another type existed of which he had recently had three cases, two of which were operated on; they were old cases with frequent recurring attacks, with indefinite symptoms in the intervals, and were finally stricken with an attack distinctly septicæmic, and in which, at the operation or autopsy, burrowing abscesses were found, generally in the pelvis. The simplest type of the disease is that in which the inflammatory area is cut off from the general peritoneal cavity by adhesions between the neighboring coils of small intestines, and such cases should always do well after operation. From these cases he felt disposed to recognize at least four distinct types of appendicitis.

DR. SHEPHERD related the history of a case, under the care of Dr. Blackader, upon whom he had operated after the fourth attack, and the patient died of pulmonary embolism. Here there had been no septic condition, no peritonitis, normal pulse and temperature, so that, as far as he could see, the cause of the thrombus was not septic. Another fatal case was in a young man of 18, on whom the operation was performed forty-eight hours after the commencement of the attack. A remarkable feature of the case was the size of the appendix, which was over seven inches long; it was gangrenous and bound down by firm adhesions. There was also a gangrenous patch on the lower end of the cæcum, but not a drop of pus was seen. The operation did not relieve the patient, who was already profoundly septic, as evidenced by the incessant bloody vomit. Now, in this case, if operation had been performed in the interval, the patient's life would no doubt have been saved. The conditions are in most cases more favorable for operation than during an acute inflammatory attack.

DR. ENGLAND had seen two virulent cases; both were recognized early, and in one case operation was performed on the third day by Dr. Roddick, but terminated fatally on the fourth. In the first case the onset was insidious, the patient suffering from wandering pains in the abdomen for two days before seeking advice. When first seen he had a pulse of 84, temperature 106, and localized tenderness over the cæcum; the next day there was beginning a general peritonitis. Dr. Armstrong was called in consultation and advised immediate operation, the condition then being good. No decision was arrived at by the patient until the afternoon, when another consultant was asked for, who thought it would be well to wait and treat the patient medicinally; this was done, but on the seventh day of the attack the patient was seized with collapse, and died. Towards the end operation was solicited, but it was then deemed too late. These two cases are of the virulent type. Both patients were in excellent health beforehand, and operation seemed to have been their only chance. It is very difficult to tell at the onset whether a case is going to be of a mild or virulent character.

DR. WILKINS related the history of a fatal case. A young man of 17 complained slightly of pains over the region of the cæcum. Four grains of opium for the twenty-four hours were ordered, which relieved the pain, and for the next few days he was quite free from it. On the first day his temperature had been 1020, and on the second 980. He remained well until the sixth day, when he was seized with sudden pain accompanied by slight tenderness. Dr. Wilkins advised calling a surgeon in consultation, but the parents objected, so he temporized, giving two grains of opium in two days; during this time the temperature had been 980, but the pulse began to run up. On the eighth day there was a rapid pulse, vomiting, and a condition approaching that of collapse. Drs. Ross and Roddick then saw the patient, but thought that it was too late to operate. An important point was the absence of all serious symptoms up to twelve hours before death, when probably some adhesions had given way. From his experience in this case, Dr. Wilkins doubted the advisability of giving way to parents and postponing consultation. About the same time he had under his care a young man of 28, who had four attacks within the space of three years. Early in the last attack operation was advised, but both parents and friends objected, and palliative measures were used. During five or six weeks there were symptoms pointing to the absorption of pus, but the patient recovered, though the symptoms were much more severe than in the first case. These cases indicate the great difficulty in knowing the exact course the disease will take. At present there is in the hospital a girl, aged 21, who has a history of symptoms which point clinically to appendicitis; there had been well marked pain in the region of the umbilicus, with swelling and tenderness of the abdomen. She had had rigors, sweating, and rapid pulse, all of which symptoms are now disappearing, and recovery is almost certain to take place. If he saw a case beginning suddenly, and with no history of a previous attack, he would give full doses of opium for the first twenty-four hours; it keeps the bowels at rest, but after that time obscures the symptoms.

DR. BELL supplemented Dr. Wilkins' hospital case by a few remarks. When he saw her she had undoubted general peritonitis. She had a large quantity of albumen in her urine, and over the left hypochondriac region certain frictions due to peristalsis of the bowel could be heard. As there was no evidence of a localized

course, and as there was a strong tubercular history, he thought it might be tubercular, and advised waiting, but in a few days found the swelling, and advised her removal to the surgical ward so that he could watch her and be prepared beforehand for any emergency, but this was not done.

DR. MCCONNELL remembered three cases in which, if he had acted promptly, the patients might have lived. The first, an athlete, sick three days; autopsy showed perforated appendix and general peritonitis. This case occurred before the time that this operation was performed. The second case was a child in whom, at the autopsy, a localized collection of pus was found, and he thought that operation would have saved it. The third case occurred three months ago. A man, aged 31, had an attack six weeks before, from which he recovered and went to work; a second attack occurred; Dr. McConnell was sent for and found fever and a hard localized mass, in which fluctuation was detected four or five days later. It was well lined off, and seemed to be pointing. Dr. Perrigo operated, and found the appendix at the bottom of the cavity; the temperature fell and remained down for eight days, and the cavity was closing; on that day, about ten minutes after leaving him, Dr. McConnell was summoned by telephone, and on his arrival found the patient gasping, and in ten minutes was dead. Dr. Perrigo had suggested an embolus, and at the autopsy there was found a localized peritonitis, and in the right iliac vein a freshly formed thrombus. During the evening he had been complaining of numbness of the right leg, and it was while the nurse was applying light massage to the leg that the onset of the fatal symptoms occurred.

DR. MILLS thought that from the discussion this was a disease of the young, and asked if any one had experience in cases beyond middle life.

DR. SHEPHERD referred to the two cases already reported by him occurring between the ages of 50 and 60.

The PRESIDENT said that as far back as 1870-71, while he was attending Virchow's autopsy class, there was hardly a week that there was not an autopsy on a case of this disease, and its occurrence was by no means in young people only.

DR. GEO. ROSS said that this disease presents a large number of interesting problems, and cases have been cited which bear more or less on all of them. In referring to the diagnosis, he did not know how anyone could, at the onset, distinguish a case which is going to be fatal from one in which there will be only a small localized inflammatory condition. A case occurred to him during the summer. A young girl had an attack at the seaside lasting two or three days; when he saw her he found her the subject of a violent attack, so violent that he thought operation was called for, and that very soon; he sent at once for a surgeon, and it was thought advisable to wait for twenty-four hours; at the end of that time the symptoms had not increased in severity, and a second delay was agreed upon, when the condition was slightly improved. This improvement in the general state showed that there was no profound constitutional poisoning and no operation was performed, and the child got well, but she got well after a very great risk and after a large discharge of pus from the rectum. There were symptoms of general peritonitis, but he did not think that this condition existed, for he had seen this general pain, when on operation only a localized inflammation was found. The operation in the interval is a most interesting field for surgical practice, and he believed it is going to be the operation of the future. When allowed to go on, the disease presents dangers so real and so rapidly fatal, while, on the other hand, everything can be arranged for an operation in a thoroughly aseptic manner. The operation sometimes presents difficulties such as finding the appendix. Can you judge what kind of operation you are going to meet with? In one of the cases related by Dr. Shepherd it was thought beforehand that the operation would be difficult from firm adhesions about the appendix. But what did he find? The appendix was very easily found and easily removed.

DR. SHEPHERD thought that in Dr. Ross's case the appendix had sloughed off. It was an illustration of nature's method of cure. He thought this was a good rule to go by, viz., when in doubt, operate.

DR. SPENDLOVE had observed several cases, and one fact he had noticed was that they all occurred in persons of a rheumatic temperament; this led him to think that diet might have some influence on the disease. A man, aged 35, came to him from the country, who, during the last fifteen months, had seven attacks—at first at intervals of four months, then three, two, one, and finally every two weeks. The man indulged in habits decidedly rheumatic; he was a high liver, using meat thrice daily. A radical change in diet was suggested, and he was told to avoid all animal food and to adopt a vegetable diet, with large quantities of water. These instructions were given in September, and in January he came to town and said that he had followed the instructions, and as a result had no attack, had no return of the pain, and had gained 20 lbs. in weight. May not diet, by keeping the amount of uric acid low, have some effect on these cases?

DR. MCCONNELL said that the rheumatic diathesis depends more upon lactic acid than

upon uric acid, both depending on deficient metabolism of nitrogenous food; and if it be so, vegetable and sweet diet should be prohibited in order to permit of more perfect oxidation of proteids.

DR. SPENDLOVE said that he had ordered those vegetable foods that contained much nitrogen, with instructions to avoid those containing starch.

Discussion.—DR. F. W. CAMPBELL thought that the paper was of much interest. He recently had some experience in the use of viburnum. In one case, a lady, who suffered much from dysmenorrhœa, had, after a short time, experienced most marked relief from this remedy. He knew that great benefit was to be derived from the electrical treatment, and if Dr. Smith's claims are true, it should always be tried.

THE PRESIDENT had found that the negative pole, instead of acting as a sedative, was a powerful irritant, and asked what battery and galvanometer Dr. Smith used.

DR. J. E. MOLSON asked if dysmenorrhœa was due to endometritis, would Dr. Smith attempt to cure the endometritis by electricity or by some other method, using the galvanism only if the dysmenorrhœa continued?

DR. SMITH replied that the battery he had been using consisted of sixty cells of Laclanché's pattern, and were changed every few months; recently he had put in sixty law telephone cells. The current from all the cells passes through a water rheostat, by which the strength is regulated. The galvanometer he used was of Gaiffe's make, as he considered that it was the only one to be relied upon. As to the negative pole being an irritant, he thought that it all depended upon the size of the electrode, that used by Dr. Buller being a very point, while the one he used was the large clay electrode suggested by Apostoli, and under such conditions he considered the negative pole sedative. Many gynæcologists treat endometritis by the galvanic current, and alone think it immeasurably superior to any other form of treatment.

Stated Meeting, April 29th, 1892.

F. BULLER, M.D., PRESIDENT, IN THE CHAIR.

Excision of the Wrist.—DR. JAS. BELL brought before the meeting a boy, aged 14, in whom he had excised the right wrist for tubercular disease of seven or eight months standing. He had removed all the carpal bones (with the exception of the pisiform bone), the styloid process of the ulna, the articular surface of the radius, and the heads of all the metacarpal bones. The result has been very satisfactory. The boy has good movement of the distal and fair movement of the proximal phalanges. Dr. Bell remarked that of all the joints subject to tuberculosis which are excised, the wrist is the least promising. No matter how slight the disease may be, a partial excision is almost impossible, and when the disease is extensive the inflammatory condition about the sheaths of the tendons renders the hand useless unless very great care has been taken to exercise the hand. From all appearances, this case promises to be the best result he has yet obtained after this operation.

THE PRESIDENT asked Dr. Bell if he apprehended any return of the disease in the joint.

DR. BELL did not think that it would return; but no matter how thoroughly the disease has been eradicated, there is a strong tendency towards its recurrence in some other part of the body.

Stated Meeting, May 13th, 1892.

F. BULLER, M.D., PRESIDENT, IN THE CHAIR.

Gunshot Fracture of the Skull.—DR. JOHNSTON exhibited two entensively fractured skulls, the first from a man who had been found dead a few weeks before under suspicious circumstances, there being a gunshot wound of the left orbit, the course of the shot being upwards and outwards to the vertex. A partial autopsy had been performed by a physician, who thought that the fracture of the skull had been produced by external violence in addition to the gunshot injury. Dr. Johnston had been called upon to make a second examination and came to the conclusion that the gunshot was quite sufficient to produce the fracture. He had searched the records of gunshot injuries but had found no mention of such an injury under exactly similar circumstances, for though the skull was very extensively fractured there was no scalp wound. He was able to produce a like condition experimentally. A dissecting room subject was selected, and the gun found beside the deceased was used, the charge of powder and shot being measured by the measure in the flask found on the body. The gun had been fired into the left orbit from a distance of about three feet, and the fracture produced imitated closely in nature and extent the original case, though much more severe owing to the difference in the thickness of the skulls. A peculiarity in both cases is the tendency to separation of the sutures, that of the sagittal and coronal being most marked. There is a branched fracture extending anteriorly through the frontal bone, and one through the perietal bone on the right side. A most interesting feature was the absence of any tendency for the fracture to spread through the base. A blow on the vertex will usually produce fracture of the base, but in both the cases with the exception of a fracture through the ethmoid and lesser wing of the sphenoid, the base was entire; this is readily explained by

the direction of the force of the blow, which was from below upwards. The distribution of the fractures was so similar that he had no doubt that a shot fired from the deceased's gun at a distance of two and a half or three feet was quite capable of producing such an injury without inflicting other signs of violence. The grains of shot had been much scattered through the brain, extending over an area of eight square inches, but non penetrated the bone.

Microscopical Sections.—DR. MCCONNELL exhibited sections of sarcoma of the skin removed from the forehead of a man aged 65. The tumor had been growing for some years, and was not painful; there had been no change in color, but vessels were seen coursing over it. It was so very soft that Dr. McConnell thought at first that it was a lipoma, but on microscopic examination it proved to be a round-celled sarcoma. There was little or no connective tissue between the cells, and very little pigmentation.

Dr. McConnell also exhibited a section from a tumor of the breast removed by Dr. Reddy, and which showed all the microscopic characters of schirrus. The patient was 30 years old. The whole breast was involved, but the nipple was not retracted. He also exhibited a very typical section of epithelioma removed from the hand of a patient aged 40. A wart had appeared on the back of the hand about ten years ago, and an attempt was made to destroy it; three years ago it took on rapid growth, which had spread all over the back of the hand, it having a fungoid appearance with an indurated base and everted edges. Dr. Armstrong had removed the hand.

DR. SHEPHERD thought that the first specimen was not a true sarcoma of the skin, but a sarcoma secondarily involving the skin. In cancer of the breast, retraction of the nipple is not now looked upon as such a constant feature as it was formerly, for surgeons operate earlier before the breast becomes so seriously involved as to produce this appearance.

Nephrectomy.—DR. SHEPHERD exhibited the kidney from the patient from whom he had previously removed a large branched calculus.* He, at the time, thought that he had removed all the calculus, and the patient did well for some time, but in about six weeks she began to have elevated evening temperatures, and pus began to run from the wound. No blood or pus was ever found in the urine, which led him to think that the ureter was occluded and that the kidney would shrivel up. The patient gradually got worse, and he decided to remove the kidney. At the operation he found a tremendous amount of inflammatory tissue, which was due to the previous operation, the hilum was imbedded in tissue two inches thick, and several supernumerary vessels had to be tied. The kidney consisted of a number of sacs, only a small amount of kidney substance remaining, and several small calculi were found.

The ureter was distended to the size of the thumb, and a probe could pass down but two inches. This cavity was thoroughly scraped and packed with iodoform gauze. In his other cases of removal of the kidney Dr. Shepherd had found that at the time of the operation the other abdominal contents immediately filled up the space from which the kidney had been removed; but in this case, owing to the amount of cicatricial tissue, this did not occur. In the first report of the case Dr. Shepherd said that he had been led to prefer removing the stone and free drainage to complete removal of the kidney, but he now doubted his conversion, and still adhered to his old opinion, that a very much disorganized calculous kidney should be removed.

Arterio-Sclerosis.—DR. FINLEY exhibited a fibroid heart, and DR. G. T. ROSS read a paper on Arterio-Sclerosis, based upon the case from which the specimen had been taken. (See Record page 481.)

Discussion.—DR. F. W. CAMPBELL had been greatly interested in the paper. Arterio-sclerosis has claimed more attention within the last few years than ever before. It is unfortunate that there are so few indications of the presence of this serious disease of the blood-vessels. He was especially struck with the remark that though the superficial vessels may show indications of the disease, yet the interior vessels may be healthy, and *vice versa*; this is a most important point in connection with life insurance. A few years ago he had placed a very large sum of money on the lives of four men, and during that summer one of the four was stricken with apoplexy. A most careful examination had been made of all the superficial vessels, and they were all in a perfectly healthy condition, yet some deep vessels in the brain must have been diseased.

DR. FINLEY said that the case before the Society fully bore out Dr. Campbell's statement. No one could have rejected the man for life insurance; his peripheral vessels were quite sound, the changes seemed to have picked out the coronary arteries only in a peculiar way.

DR. G. T. ROSS said that he had not mentioned tobacco as a cause of this change, by raising the arterial tension. This patient was in the habit of smoking many strong cigars in the day.

DR. F. W. CAMPBELL thought that if tobacco was a cause, it must be in persons in whom exist the peculiar type of tissue that predisposes to the disease.

DR. JOHNSTON said that bleeding was very beneficial, and seemingly fatal attacks may be averted by it. Dr. Lafleur had recently published some cases on this subject. He (Dr.

Johnston) remembered having seen Dr. Bell bleed a man in the hospital, and the seeming corpse revived and spoke, and lived three days. At the autopsy an extensive sclerosis of the vessels was found.

DR. MCCONNELL said that he had seen it stated that all men over 30 should be careful how they over-exerted themselves, and for physicians to advise persons known to have this disease to be especially careful was a most important point in treatment.

DR. G. T. ROSS pointed out that Dr. Osler has extracted 25 to 20 ounces with marked benefit, but he thought that this should be done only in selected cases.

An Inquiry into the Causation of Local Motor Paralysis after Poisoning by Charcoal Vapor.—DR. BRUÈRE then read a paper on this subject.

DR. JOHNSTON asked if these local paralyses followed other substances, as pyrogallic acid, potass. chlorat., potass. bichrom., all of which produce met-hæmoglobin. He had administered these drugs to dogs and other animals without noting any recognizable paresis. In horses with hæmoglobinuria, paralysis of the hind legs and retention of urine had been noted. Did Dr. Bruère consider the action specific or due to deprivation of oxygen?

DR. BRUÈRE did not think that the paralysis was due to any specific action.

SIXTH ANNUAL MEETING OF THE AMERICAN ORTHOPEDIC ASSOCIATION.

To be held in Room 39, at the New York Academy of Medicine, September 20, 21 and 22, 1892.

The Association will be called to order daily at 9 a. m. There will be an afternoon session at 2 o'clock.

At noon on Tuesday and Thursday the Association will go into executive session for the transaction of business.

On Tuesday evening at eight o'clock, Dr. Lewis A. Sayre will receive the members and guests of the Association at his house, No. 285 Fifth Avenue.

At 8 o'clock on Wednesday evening the Annual Dinner will be held in the banquet-room of the Academy of Medicine. The charge will be five dollars per plate, and members are requested to notify the Treasurer at the earliest possible day of their intention to participate, and accompany this notification with a check for the number of places desired, with names of guests.

FIRST DAY—TUESDAY.

1. The President's Address. Dr. Benjamin Lee, Philadelphia.

2. Report of a Case of Spontaneous Dislocation of the Hip Joint. Dr. B. E. McKenzie, Toronto.

3. Adduction following Fracture of the Neck of the Thigh Bone. Dr. H. Hodgen, St. Louis.

4. Osteitis Deformans; with a report of Two Cases. Dr. Henry Ling Taylor, New York.

5. Lateral Dislocation at Knee Joint due to Local Disease, or Paralysis, with especial reference to treatment. Dr. T. Halsted Myers, New York.

6. Plaster-of-Paris Orthopedics. Dr. A. J. Steele, St. Louis.

7. The Orthopedic Treatment of Infantile Spinal Paralysis. Dr. John Ridlon, Chicago.

8. A Report of Two Years' Operative Work in the Hospital for the Ruptured and Crippled. Dr. V. P. Gibney, New York.

9. Lateral Curvature. Dr. E. H. Bradford, Boston.

10. The Classification of Hip Disease. Dr. R. W. Lovett, Boston.

11. A Study of some of the Problems in the Mechanical Treatment of Hip Joint Disease. Dr. Newton M. Shaffer, New York.

12. Experiments demonstrating the Etiology of the Various Deformities in Hip Joint Disease. Dr. A. M. Phelps, New York.

13. Some remarks on the Etiology of Club-Foot. Dr. Samuel Ketch, New York.

Discussion to be opened by Dr. J. K. Young, of Philadelphia.

14. At what Age shall the First Treatment of Congenital Club-Foot be Instituted? Dr. H. Augustus Wilson, Philadelphia.

Discussion to be opened by Dr. C. C. Foster, of Cambridge.

SECOND DAY—WEDNESDAY.

The following papers will be discussed together:

15. The Non-Operative Treatment of Congenital Club-Foot. Dr. A. B. Judson, New York.

16. The Non-Operative Treatment of Club-Foot in Young Infants. Dr. R. W. Lovett, Boston.

17. Manual Replacement in the Treatment of Club-Foot. Dr. Ap. Morgan Vance, Louisville.

18. The Treatment of Club-Foot by Continuous Leverage. Dr. Henry Ling Taylor, New York.

19. The Place of Traction in the Treatment of Club-Foot. Dr. Newton M. Shaffer, New York.

20. The use of the Wrench in the Treatment of Club-Foot. Dr. Robert Jones, Liverpool.

Discussion to be opened by Dr. A. M. Phelps, of New York, and Dr. Roswell Park, of Buffalo.

The following papers will be discussed together:

21. The Operative Treatment of Club-Foot. Dr. DeForest Willard, Philadelphia.

22. Analysis of Bone Operations in Club-

Foot, especially Enucleation of the Astragulus. Dr. V. P. Gibney, of New York.

23. Treatment of Resistant Club-Foot. Dr. E. H. Bradford, Boston.

Discussion to be opened by Dr. L. A. Sayre and Dr. J. B. Bryant, of New York.

THIRD DAY—THURSDAY.

24. An Easy Way to hold the Operated-on Club Foot in the Correct Position while the Plaster-of-Paris splint Sets. Dr. H. M. Sherman, San Francisco.

25. Means for the Prevention of Relapse in the Treatment of Club-Foot. Dr. B. E. McKenzie, Toronto.

26. Necessity for Mechanical Treatment after Operations for Club-Foot. Dr. W. R. Townsend, New York.

27. A Case of Club-Foot with Rare Complications. Dr. A. J. Steele, St. Louis.

28. Paper on Club-Foot; title not announced. Dr. T. Halsted Myers, New York.

29. Paper on Pott's Disease; title not announced. Dr. R. H. Sayre, New York.

30. Paper; title not announced. Dr. H. L. Burrell, Boston.

31. Paper; title not announced. Dr. J. C. Schapps, Brooklyn.

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Progress of Science.

ARTIFICIAL PRODUCTION OF ABSCESSES IN CONDITIONS TENDING TO SUPPURATION.

Fochier (*Lyon Méd.*, August 23rd, 1891), having several times observed that in cases of puerperal fever improvement at once set in as soon as signs of localized suppuration—as, for example, abscess of the breast or of the iliac fossa—appeared, and that cases in which no definite abscess formed often proved fatal, conceived the idea of artificially inducing the formation of subcutaneous abscesses in cases of serious puerperal infection. He effects this object by injecting essence of turpentine (about 1 centigramme at a time) in three or four different places, and he believes that in this manner he saved several patients from all but certain death. He therefore recommends the method in infectious diseases in which suppuration is likely to occur spontaneously. He mentions pyæmia as the type of such affections, but all simple or complex septicæmias, erysipelas, and acute osteomyelitis may be grouped in the same category, inasmuch as in all of them the formation of multiple abscesses may be a part of the process. The same thing may, according to Fochier, be said of certain diseases in which, as a rule, there is no tendency to suppuration, but which, under certain conditions, may become "generalized pyogenci infections," such as influenza, typhoid fever, and pneumonia. Acting on this point, Lépine (*Sem. Méd.*, February 27, 1892) adopted the treatment in a case of pneumonia, in which the patient, a man, aged 36, seemed to be almost beyond recovery. The expectoration had become purulent, large *rales* had taken the place of tubular breathing, and though the temperature had fallen, there was no true resolution of defervescence, and the patient was in a condition of extreme adynamia. In short, the stage of "grey hepatization" was impending or had already commenced. On the twelfth day 1 cubic centimetre of essence of turpentine was injected subcutaneously with a Pravaz syringe into each of the four limbs. The temperature rose slightly, and oscillated between 38.5° C. and 39° C. till the eighteenth day of the disease, when they were opened. Almost immediately the temperature became normal, the physical signs began to clear up, and complete resolution rapidly took place. Even before the abscesses were opened the patient had to some extent recovered his appetite, and he soon regained the weight he had lost. Lépine states that, as regards both the general and the local condition, cure was complete, He is careful to guard himself against generalizing from a single fact, but, believing that it was solely owing to the treatment described that the patient recovered, he thinks it worth while to call attention to the method as worthy of trial in cases of "an affection which is almost always fatal—grey hepatization."—*British Medical Journal.*

OVULATION WITHOUT MENSTRUATION: PREGNANCY.

Loviot (*Arch. de Tocol. et de Gynéc.*, January, 1892) related at a recent meeting of the Paris Obstetrical and Gynæcological Society, the case of a woman who had not seen a monthly period for fourteen months. Rheumatic pains set in and the abdomen became swollen. He discovered pregnancy between the sixth and seventh month. The mother did not believe in this diagnosis; nevertheless she was afterwards delivered of a very small child. —*British Medical Journal.*

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MONTREAL, JULY, 1892.

THE CAUSE OF APPENDICITIS.

While all observers are agreed that appendicitis is a disease both apparently and really more frequent than formerly, no very good explanation has been given for the same. When we say that the disease is apparently on the increase, we mean that a great many more cases are recognized now than there used to be, while in former times a great many cases of appendicitis really occurred, and the patients recovered or died from it without the disease having been diagnosed as such. But apart from the greater modern skill in recognizing cases, which in former years would have been diagnosed as inflammation of the bowels, etc., it is generally admitted that the disease is really more frequent. For us a satisfactory explanation is easy to find. Inflammation of the appendix is due either to some cause from within or to some cause from without the intestines. Among the latter may be classed those cases in which the disease extends from a pus tube or ovary out towards the right iliac fossa. In performing abdominal section for this condition it is no uncommon thing to find the appendix vermiformis closely adherent by inflammatory exudation to the pelvic visceræ. But in the majority of cases the trouble arises from the interior of the intestinal tract. The appendix has been found to be much more frequently affected among the inhabitants of those countries where habitual constipation is very common. Small pieces of hardened fæces are forced into the diverticulum, from which there is no outlet, and the resulting irritation and pressure set up suppuration with possible rupture into the peritoneal cavity. As a rule, the pain of appendicitis is very much relived by saline treatment which liquifies the hardened fæcal masses, and by emptying the distended ascending colon also allows the appendix in turn to empty itself. A leading English surgeon during a recent visit to America was astonished at the number of cases of appendicitis encountered in every large centre; he actually saw more cases in three weeks on this continent than he had even heard of in Great Britain in all his experience. Owing to the peculiar diet and habits of the American people, living as so many of them do on rich food and taking little or no exercise, the number of people suffering from constipation is very large. This view is still farther borne out by the enormous sales in the United States of patent medicines which have a cathartic for their principal ingredient. In our opinion, the practitioner should pay more attention to the treatment of constipation as a disease of the greatest importance, instead of passing it over as a symptom hardly worth his notice; for, in our experience, both appendicitis and many diseases of the pelvic visceræ, male and female, have their origin in habitual neglect to properly move the bowels.

A NEW MEDICAL JOURNAL.

We take pleasure in welcoming to the ranks of Canadian medical journalism a new candidate for professional favor, entitled The Ontario Medical Journal, the first issue of which is to appear about the 15th

of August. It is the organ of the College of Physicians and Surgeons of Ontario, which has generously arranged to have it supplied free of charge to every medical practitioner in Ontario. It will be under the editorial and business management of Dr. Rowland B. Orr, who has our cordial sympathy in the task which lies before him. We wish our young contemporary every possible success.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Will hold its Eighteenth Annual Session at Cincinnati, Wednesday, Thursday and Friday, Oct. 12th, 13th and 14th, 1892. An excellent programme, containing the best names in the Valley and covering the entire field of medicine, will be presented. An address on Surgery will be delivered by Dr. Hunter McGuire, of Richmond, Va., President of the American Medical Association. An address on Medicine will be made by Dr. Hobart Amory Hare, Professor of Therapeutics and Clinical Medicine, Jefferson Medical College, Philadelphia. The social as well as the scientific part of the meeting will be of the highest order.

The Mississippi Valley Medical Association possesses one great advantage over similar bodies, in that its organic law is such that nothing can be discussed during the sessions save and except science. All ethical matters are referred, together with all extraordinary business, to appropriate committees—their decisions are final and are accepted without discussion. The constitution and by-laws are comprehensive and at the same time simple. Precious time is not allowed the demagogue or the medical legislator. The officers of the Pan-American Medical Congress will hold a conference at the same time and place.

CHARLES A. L. REED, M.D.,
Cincinnati, President.

E. S. McKEE, M.D.,
Cincinnati, Secretary.

BOOK NOTICES.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES, A yearly report of the progress of the General Sanitary Sciences throughout the world. Edited by Charles E. Sajous, M.D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators, and correspondents. Illustrated with Chromo-Lithographs, Engravings and Maps. Volume I. 1892. The F. A. Davis Company, publishers, Philadelphia, New York, Chicago, and London. Australian Agency: Melbourne, Victoria.

It is with feelings of greater wonder and admiration than ever that we once more receive this monumental work for review. Since the notice of last year's volumes was printed in these columns we have had the opinion we then expressed endorsed by many of our readers, who, at our suggestion, ordered the Annual, and who have told us that they had never received better value for their money.

No one man could possibly read one thousand and twenty-seven medical periodicals, many of them appearing weekly; but by taking the Annual he can find out all that has been written in that number of journals during the past year. If he is particularly interested in any particular journal article, he can find exactly the date and the name of the publication in which the article appeared. A single paragraph, for instance, giving the latest treatment of, say, pneumonia, will contain as many as fifteen names, each with a number and a date after it. By referring to the key at the end of each volume you will find that each of these writers has written articles on that particular treatment during the past year in one of those ten hundred and twenty seven journals, or in one of the one hundred and sixty-six books. No less than seventy of the leading writers of America and Europe are associated with the editor in-chief, Dr. Sajous. We almost wonder how any monetary consideration which the publishers could afford would induce men whose time must be already taken up with their enormous practices to undertake such a laborious task. It matters not, however, how their services are obtained, the fact is there that these hundreds of elaborate articles have been prepared, and are furnished in these five volumes for the very moderate price of fifteen dollars. We hardly know which to admire the more, the devoted labor of the editorial staff or the business enterprise and faith of the publishers in under takingthe publication of so costly a work.

We may conclude our notice with these few words from the editor's preface:—

It is with a feeling of great satisfaction that the editor has the honor of presenting the fifth series of the *Annual* to the medical profession Thanks to the devotion of the members of the

associate staff and to their willingness to comply with all measures calculated to increase the practical usefulness of the work, the general character of the articles indicates that a proper conception of its true purpose has finally been reached, and that uniformity—so difficult of attainment in publications of great magnitude, representing the labor of so many writers—has become an element worthy of recognition. Considering that the gradual evolution of the *Annual* to the state of perfection to which, it is hoped, it will some day be brought, involves not only the intricacies usually accompanying editorial work, but many others occasioned by the immensity of the undertaking, the rapidity with which the yearly work of preparation must of necessity be performed, and the small army of co-operators engaged in it, such a result, so early in the career of the publication, augurs well for its future.

THE ELECTRO-THERAPEUTICS OF GYNÆCOLOGY, by Augustin H. Goelet, M.D., Fellow of the New York Academy of Medicine, and of the New York Obstetrical Society, Vice-President of the American Electro-Therapeutic Association, Member of the Société Française d'Electrothérapie, Editor of the Archives of Gynæcology, Obstetrics and Pœdiatrics. In two volumes, with illustrations. 1892. George S. Davis, Detroit, Mich. Price 25 cents a volume.

The author says :—"The necessity for a practical guide for the application of electricity to gynæcology, according to the modern and distinctly stated in the text, and where it has been committed there has been sufficient reason for doing so. It would be inappropriate in a work of this kind to follow a course other than that pursued.

If my efforts to awaken a proper appreciation of the value of the faradic current and extend its use in gynæcology are successful, I shall feel that my labor has not been in vain." After careful perusal of these two handy volumes, we can heartily endorse all that the author says in his preface, and we may take this opportunity of assuring him that he has admirably succeeded in his task. Although there are other more pretentious and elaborate volumes on the subject, we have as yet seen nothing that can compare with this one in practical usefulness. Those who are so fortunate as to begin the use of electricity in gynæcology only after having studied this work will have an easy time, compared with that endured by the pioneers in this method of treatment. Dr. Goelet, like the writer of this, has purchased his experience by many an hour of anxiety while experimenting with a remedy so powerful but till then so little understood. But now all is easy and plain sailing, and electricity can be employed with as much safety and assurance of results as can be obtained with morphine or strychnine. The writer of this notice had intended in conjunction with Apostoli to prepare a somewhat similar work to the one before us, but pressure of other work has so far prevented him from undertaking the task; and now that Dr. Goelet has so ably supplied the demand for a practical manual, nothing more is needed. To all those who in the future ask us, as they have so often in the past, what is the best practical work on Gynæcological Electro-Therapeutics, we can, without hesitation, answer, Dr. Augustin H. Goelet's.

DE LA VALEUR ET DES EFFETS DU LAIT BOUILLI ET DU LAIT CRU. Dans l'allaitement artificiel par le Dr. Henry Drouet, ancien interne des hôpitaux de Paris et de la maternité de l'hôpital Beaujon, ouvrage couronné par l'académie de médecine, prix de l'hygiène de l'enfance, 1891. Paris société d'éditions scientifiques, place de l'école de médecine, 4 rue Antoine Dubois, 1892.

The author, after pointing out the absolute necessity under certain circumstances of feeding infants artificially, and while admitting that ass's milk most resembles human milk, shows that it is so expensive that it is practically unavailable. Goat's milk approaches the next nearest to woman's milk, but these animals only give milk he says during eight months of the year. So that while cow's milk has certain disadvantages, it is the only practical substitute that we have at our disposal. The great objection to cow's milk is that it contains much more casein, and the casein coagulates in much larger and harder lumps than in human milk. The greater part of the volume, however, is devoted to a careful and detailed study of the question: Whether cow's milk is injured by boiling? and on the contrary it is not improved thereby. He shows that many serious diseases are communicated through milk, notably tuberculosis, and that this danger can be completely overcome by boiling. While, on the other hand, he proves that the digestibility of cow's milk is greatly increased by boiling, owing to the coagulation in minute articles which this causes, and which therefore prevents it from forming large and indigestible cogulæ in the child's stomach. Every one who takes an interest in the artificial feeding of children, and in these days almost every general practitioner should, owing to the great number of mothers who are unable to nurse their children, should procure this book, which is well worth a careful study.