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CASE OF TRAUMATIC TETANUS—RECOVERY.

By J. CHALMERS CAMERON, M.D.

Until quite recently, tetanus has been regarded as practically incurable. Some years ago, a Committee of the British Medical Association, under the presidency of Mr. Callendor, investigated the subject and reported that acute tetanus is incurable, and that though anodynes and hypnotics may sometimes alleviate the symptoms, they can not be said to cure.

Though tetanus is essentially a disease of hot climates, it is by no means uncommon in Great Britain and America. In England and Wales from 1879 to 1892 inclusive, there were 2,969 deaths from traumatic tetanus; and from 1881 to 1892, there were 568 deaths from idiopathic tetanus. Several cases of traumatic tetanus have been reported in this city, but I am not aware of any recoveries. It will, therefore, be of some interest to lay before you the notes of a successful case which I had the opportunity of observing last summer. Moreover the subject is of special interest now on account of the new antitoxin treatment advocated by the Italian school. Drs. Tizzoni and Cattani, of Bologna, claim to have worked out a method of curing tetanus by injecting the serum of horses which have been inoculated with the specific microbe under special conditions. This

method has been tried in a number of cases with a certain measure of success, but is still *sub judice*. In successful cases, improvement is generally said to begin within twenty-four hours after injection, and becomes well marked and permanent in forty-eight hours. The patient feels better and is able to rest—then vomiting ceases and the tetanic spasms become less frequent and extensive—and lastly irregularity of pulse, the fever and rigidity of the abdominal muscles disappear.

E. W., *æt.* 13, while racing with some other boys along a new made road, about 4 p.m. on 11th June, 1894, fell and cut his left knee on a lump of hard clay. The wound was $3\frac{1}{2}$ inches long, semi-circular in shape and extended transversely across the middle of the patella. The lower flap was torn away from its attachments, leaving a pouch 2 inches deep. The wound was filled with clay, bits of straw and manure. With the assistance of his companions he limped home, and his mother washed out the wound as well as she could and applied cold water compresses. About 7.30 p.m. he was brought to my office in a cab. Some fragments of mud and manure were removed from the bottom of the wound, and after thorough cleansing, the parts were brought together with eight silk sutures, gauze dressings were applied, and a long splint adjusted to fix the knee-joint. The wound was dressed on the 16th, the stitches removed on the 19th, and by the 22nd union was complete, except at the outer angle, where a suture had cut through, and the edges separated slightly. This healed a few days subsequently without any trouble. The night of the 22nd was so hot that the doors and windows were left open all night; the following morning the patient complained that his throat was a little sore, and that it was a little painful to swallow. The tonsils were found to be red and swollen. On the 25th, he complained that the back of his neck was stiff and sore to the touch. On the 26th the soreness of throat had gone, the stiffness and soreness had left the neck and gone to the back and shoulders. As he had previously suffered from muscular rheumatism and the stiffness was

slight, and the temperature and pulse were normal, the symptoms were attributed to cold, and *sod. salicylat.* was prescribed. On the 27th, the stiffness had extended to the chest, making the breathing somewhat difficult—the jaws were stiff, the mouth was opened with difficulty and it was hard to swallow. The temp. was 99°, pulse 80. He was lively and bright and did not feel ill, but complained of being stiff and rigid in head, neck, mouth, shoulders and chest. Diagnosis of probable tetanus was made, and *chloral. hydrat. grs. x* prescribed. On the 28th, the temperature and pulse rose, the stiffness was less marked in neck, shoulders and chest, but had spread to the pelvis, hips and thighs; he was beginning to feel sick. On the 29th the temperature had risen to 103, pulse 120, respiration 40. Dr. Bell saw the case with me in consultation and confirmed the diagnosis of tetanus. The patient was then rigid over the whole body; the arms and legs were fixed; any attempt to move him in bed, rearrange his pillows or turn his head brought on agonizing spasms, which brought out great beads of perspiration on face and body. His mouth could, with difficulty, be forced open enough to give his medicine and a little liquid fluid. The treatment we decided upon was *chloral hydrat. grs. x 4 q. h.* alternating with *tinct. op. m. v. x.—4 q. h.*; milk, meat-juice and stimulants freely. A trained nurse was obtained, and a careful record kept of the case. It would be tedious and unprofitable to go over the daily record with its many ups and downs; suffice it to say that the *chloral* was given from day to day in sufficient dose to control spasm and secure sleep. For the first two weeks, from 60 to 90 grains were required daily; the dose was diminished as soon as possible—but it could not be discontinued altogether till August 7th. On several occasions when the dose was reduced or omitted, even after convalescence was well advanced, the spasms returned with violence and very nearly proved fatal. The opium relieved pain, but did not seem to have much effect on the spasms; the dose was therefore regulated according to the severity of the pain. Whiskey was

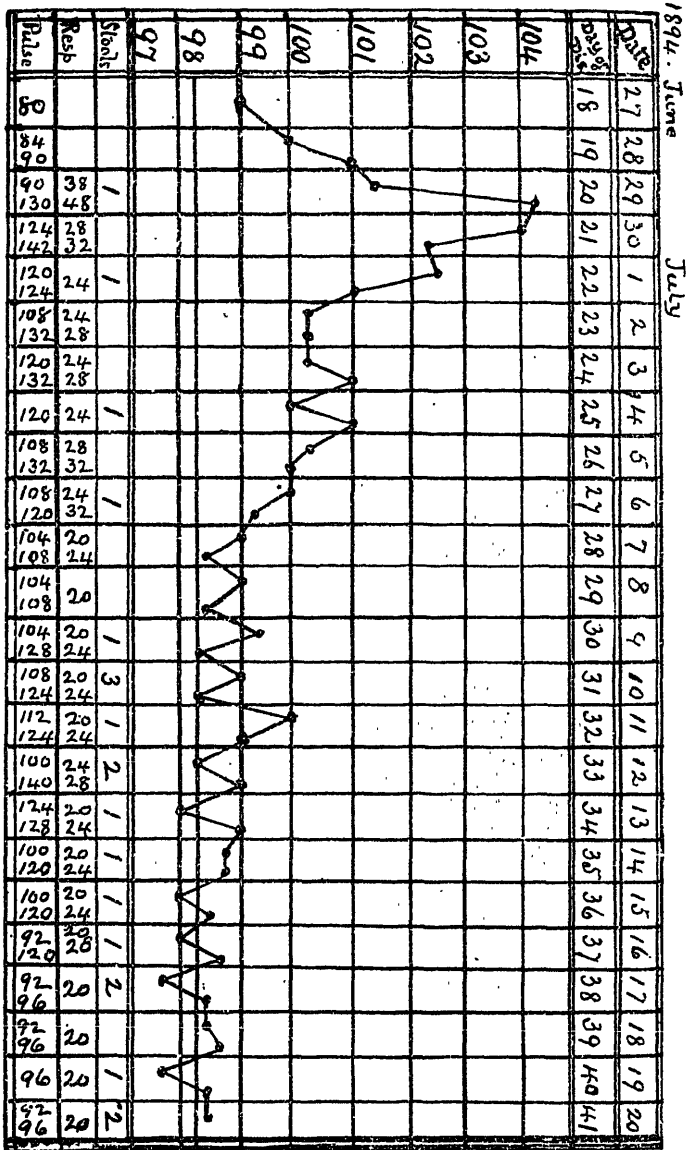


CHART OF TETANUS CASE.

The chart records the highest and lowest temperature, pulse and respiration during the twenty-four hours as shown by the two-hour and four-hour chart.

given freely, the quantity being regulated by the state of heart and pulse. The bowels were kept free with an occasional soapsuds enema.

After the tetanic spasms ceased, rigidity continued for some time and convalescence was slow. The injured leg was not stiffer than the other. Even after his general health had greatly improved and he could use his arms and body well, the legs remained more or less stiff, their movements were uncertain and unsteady, and he tired after a short walk. Even about Xmas, the stiffness had not altogether left the legs, although none was noticeable elsewhere. At the present time he seems quite well and can run and walk as well as ever.

In looking back over this case, some points seem to stand out prominently as of special interest.

1. The insidious onset of the characteristic spasms. They began on the 12th day after the injury, with a slight soreness of throat, replaced on the 14th day by slight stiffness and soreness of the back of the neck. On the 15th day stiffness and soreness had left the head, neck and throat, and settled in the back and shoulders, and on the 16th day involved the chest, causing for the first time difficulty of breathing, and attended for the first time with a slight rise of temperature (99°). On the 17th day came the first decided rise of temperature, pulse and respiration, and the patient for the first time felt ill. Then the tetanic symptoms developed with such rapidity and severity that the patient's life was soon in imminent danger.

2. The short time the infecting agent was in contact with the wound—for three and a half hours only, were the earth and manure imbedded in the wound, yet there was sufficient absorption of poisonous products to produce a slowly-developing, but severe attack of tetanus. Does the shortness of time account for the insidious nature of the onset, and the amenability to treatment? Had the manure with its putrefactive organisms and probable colon bacilli any causative influence upon the rapidity of formation and

absorption of the specific poison? Some observers claim that pure cultures act more slowly and feebly than when colon bacilli and other organisms are present.

3. The large amount of chloral, opium and alcohol which may be administered without producing toxic effects. There could be no fixed dose; chloral and opium were pushed till spasm and pain were relieved and at least six hours of sleep obtained out of the 24. If I had to treat such a case again, I would feel inclined to try larger doses of chloral at longer intervals, say two or three larger doses in the 24 hours, instead of six smaller ones. In this case I found that sometimes the good effect of a 20 grain or 30 grain dose would last for a day or more, while that of a 10 grain dose barely lasted four hours. In this case chloral was of far greater service than opium. The quantity of alcohol could only be determined from day to day by the condition of heart and pulse.

There can be no routine treatment of tetanus. The disease runs a definite course; while it may destroy life in a few hours, it generally runs for a week or ten days, and if the patient can be kept alive for a fortnight, there is a good chance of recovery. As there is no drug which is specific, none which can cut short the disease, the natural course seems to be to keep the patient alive till nature can eliminate the poison. To combat nerve exhaustion, control spasm, allay pain, secure sleep, maintain nutrition, keep up heart action, and prevent embarrassment of respiration—these are the chief points in treatment. The symptoms must be watched carefully and intelligently from hour to hour, and the chloral, opium and alcohol administered according to the varying conditions of the case. Much depends upon the nurse, and it is but just to say that the recovery of this case is mainly attributable to the faithfulness, intelligence and good judgment of the nurse in charge. On several occasions when the breathing was becoming shallow, a large dose of chloral promptly administered relaxed the spasm and restored the respiration

—and several times extra stimulation whipped up a faltering heart and tided over a sudden crisis.

I regret very much that cultures could not be made in this case. The University laboratory was closed owing to the extension of the buildings and Dr. Adami and others were out of town.

The new antitoxin treatment was discussed by Dr. Bell and myself, but it was impossible, as no serum was obtainable at the time on this side of the Atlantic. On the whole I am rather glad than otherwise that we could not get any serum, for the course of the case has shown that traumatic tetanus is not necessarily a fatal disease, but that there is room for reasonable hope and there is a basis for rational treatment. This, of course, must be symptomatic, rather than specific; yet if we can relieve spasm by chloral, pain by opium, heart-failure by alcohol and exhaustion by liberal feeding, we are able to give nature valuable assistance and secure the needful time for elimination. But to be successful, we must push treatment fearlessly, limiting the dosage only by the attainment of the effects we seek.

SUPPURATIVE ARTHRITIS DUE TO THE TYPHOID BACILLUS.*

By C. F. MARTIN, B.A., M.D.,

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AND

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Cases of typhoid fever, in which complications of a suppurative nature have been found can no longer be placed in the category of rare affections, yet so seldom are the etiological factors of these secondary conditions identical with the primary cause of the disease that any new case is perhaps properly placed on record.

The present report concerns a man, P. C., *æt.* 34, who entered Dr. Stewart's wards at the Royal Victoria Hospital on September 25th, 1894, complaining of headache, fever and loss of appetite, and presenting the usual distinct signs of enteric fever. He gave the ordinary history of the early stages of that disease, and on admission seemed to have reached the eighth day of the fever.

During the first ten days of his illness in the hospital, favourable progress occurred, but on the eighteenth day recrudescence supervened and the temperature continued to rise till the 29th day, by which time the highest point was attained.

Three days later (*i.e.*, in the earliest days of deferescence) the patient complained of some pain and tenderness in right wrist joint, increased by movement. In forty-eight hours there developed other signs of acute inflammation—redness, swelling, heat and greatly impaired function—the visible signs appearing both in front and behind the joint.

* Read before the Montreal Medico-Chirurgical Society, March 22nd, 1893.

Hot fomentations were applied, and a few days later a splint and bandage adjusted to keep the joint at rest. For the following two weeks the temperature gradually subsided to normal and then suddenly (on the forty-eighth day) again rose to 101°. The splint was forthwith removed, revealing a tender, fluctuating tumour all about the wrist joint, and manifesting no evidence of improvement in the local condition.

With a view to ascertaining the nature of the fluid within, a hydrodermic syringe was employed with the usual aseptic precautions and half a drachm of this pus removed. From this a series of cultures on broth, gelatine and agar was made, and the presence in each case of but one form of bacteria demonstrated, viz., that corresponding in size and form to the bacillus of enteric fever. Further investigations showed its extreme motility, that it produced no acid reaction on litmus agar, and that when grown in a broth medium containing calcium carbonate no gases were formed. There was further no sign of fermentation in a growth of the bacteria in 2% lactosed broth. We were thus enabled to exclude the presence of bacillus coli communis as a complicating factor.

Subsequent to this small aspiration gradual improvement ensued, though two weeks later there was still a small quantity of fluid left. Accordingly, for a second time, the hypodermic was introduced and a small amount of bloody pus withdrawn. A rabbit inoculated with this fluid manifested no ill effects. This, we believed, could be readily explained from the fact that as on a culture medium, so here the bacilli had grown old and hence innocuous to our animal.

One week later patient left the hospital, his wrist being almost completely restored to its normal condition.

We have recorded this case not only because of its interest in verifying the pyogenic properties of Eberth's bacillus, but also because in the fairly extensive literature at our command we were unable to discover any similar case in which a suppurative arthritis complicating typhoid fever was induced solely by the bacillus of that disease.

During the course of our investigations, however, Swiezynski, in the November number of *Centrallblatt für Bakteriologie*, has recorded a somewhat similar instance, though merely of a periarticular inflammation, and the observer further notes the uniqueness of his case and his inability to find a parallel in the literature at his disposal. That ordinary pyogenic organisms are responsible for most of the suppurations in enteric fever has been amply demonstrated by Vincent, who further pointed out that wherever streptococci were associated with the typhoid germ the prognosis is always grave. On the other hand, the association of staphylococci could not be regarded as an unfavourable sign so far as recovery is concerned.

The correctness of these views is perhaps strengthened by the experience met with at the Royal Victoria Hospital, where a patient in whom streptococcus infection was super-added to his enteric fever succumbed to the disease. On the other hand, the numerous cases in which we have found staphylococci in various complications of typhoid fever, have all terminated in recovery.

As regards the treatment of suppurations occurring secondary to enteric fever, it has been urged by Dr. Meisenbach, of St. Louis, that in cases where Eberth's bacillus is the sole cause of the abscess formation, exactly the same surgical treatment is required as in cases where pus arises from infection with ordinary pyogenic bacteria. However, if it be true that a fresh growth of typhoid bacilli when inoculated into rabbits is fatal, and that the same growth a few hours old loses entirely this virulence, could not the same apply to the abscess formations in the human body? In other words, where Eberth's bacillus alone is the sole factor in producing suppuration, its virulence is so rapidly lost that the mere removal of the mechanical and chemical irritation, *e. g.*, by ordinary aspiration, might suffice for treatment without other operative interference. In our own case, although pus was present in considerable quantity, there was never any tendency to pointing of the abscess, and its whole character after the first few days took on the appearance of a chronic affection in which all signs of active progress had disappeared.

CASE OF DEATH FROM CHLOROFORM.*

By JAMES BELL, M.D.,

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Mrs. T., æt. 30, suffering from cerebral tumour involving the lower portion of the left motor area, was prepared for operation December 6th, 1894. The administration of chloroform was begun at 2 p.m. by Dr. Davidson, with Dr. Fry watching the radial pulse. Chloroform was given on an Esmarch's wire mask, covered with thin stockinette. From first to last the amount of chloroform which escaped from the bottle was seven drams, but on two occasions the bottle was upset and some of its contents spilled. The seven drams, therefore, represent not only the chloroform which was poured upon the mask, but the quantity which was spilled on the two occasions above referred to. The whole period during which chloroform was administered was thirty-three minutes. The patient passed quietly into the anæsthetic state without any unusual or untoward symptoms. At 2.30 the pulse was 100, respiration 28, pupils contracted. At 2.35 lines were drawn on the shaven scalp with the scalpel to indicate the position of the Rolandic and Sylvian fissures. These incisions were very superficial, but the patient struggled a little, showing that she was not then fully anæsthetised. It was also remarked that there was very little bleeding from these slight incisions. (I am now inclined to attach some importance to this fact.) From this time 30 drops of chloroform were dropped upon the mask, 10 drops at a time. At 2.39 the pulse stopped suddenly and without warning. Six respiratory movements occurred after the pulse ceased to be felt,—at first full and strong—and gradually diminishing until they ceased altogether. There was then full dilatation of

* Read before the Montreal Medico-Chirurgical Society, Dec. 28th, 1894.

the pupils, and general lividity developed rapidly. The patient was inverted, hot applications were applied to the precordium, the tongue was drawn forward and artificial respiration carried on for fifteen minutes, when respiration was restored. Six natural respirations occurred in a minute, during which the lividity was decreased considerably. The pulse could not be felt, but some cardiac movement could be recognized by Dr. Stewart with the stethoscope. With the return of respiration I began to feel that the danger had passed, but at the expiration of one minute respiration became slow and shallow. Artificial respiration was resumed, $\frac{1}{50}$ gr. of strychnia was given hypodermically and three capsules of amyl. nitrate, (5 minimis each) were applied to the nostrils. At this time however, respiration had practically ceased, so that the amyl nitrate had probably no effect whatever. Respiration ceased entirely and deep lividity supervened. Restorative measures were abandoned at 2.58.

At the autopsy, seven hours after death, all the chambers of the heart were found moderately full of blood, the brain tumour was found to be an infiltrating sarcoma, diffused over a wide area of the left hemisphere with secondary nodules in the peritoneum,—(an inoperable growth).

The coroner was notified and an inquest held, the result being a verdict fully exonerating the hospital and all concerned.

In this case, which was carefully observed throughout, death very clearly began at the heart, and also very clearly was not due to over dosage, which, I believe, is a much more frequent cause of death in chloroform administration than is generally recognized. In cases of death from over-dosage, moreover, the respiratory function is the first to fail, and the widespread belief, that chloroform frequently, if not generally, kills through arrest of the respiratory function is, in my opinion, largely based upon the observation of such cases. This was a conspicuous fallacy in the experiments of the Hyderabad Commission. They chloro-

formed several dogs to death (overdosage). These dogs all died through arrest of respiratory function, and upon these experiments the Commission laid down the rule that deaths from chloroform *always* occurred in this way, entirely ignoring such cases as the one here reported. Throughout the whole history of chloroform as an anæsthetic, cases of sudden death have occurred from time to time in patients with sound organs, often during slight operations or before operation was begun, and at an early period of anæsthesia, in which arrest of heart's action and cessation of respiration were noted at the same moment, or in which the arrest of heart's action was first noticed. Now it must be borne in mind that in strangulation, asphyxia or paralysis of the respiratory centre, causing complete cessation of respiration, the heart's action continues and the radial pulse can be felt for an appreciable space of time—often for some minutes. On the contrary, sudden and complete arrest of the heart's action is *immediately* followed by cessation of respiration. It is, therefore, highly probable that when pulse and respiration appear to fail at the same moment, the primary failure is in the heart. The fact already noted that the slight incisions in the scalp bled only slightly, has led me to think that perhaps there was, even then, some inhibitory process at work affecting the capillary circulation, and apparently beginning at the periphery, as the pulse was still full, strong and regular. Besides, the heart failure was not complete, when the radial pulse first became so weak as to be inappreciable, as cardiac movements were recognized later and there was a return of respiration for a little more than a minute.

THREE CASES OF EXTRA-UTERINE PREGNANCY.

By EDWARD EVANS, M.D., La Crosse, Wis.

CASE I.—*Extra-uterine Pregnancy, Profuse Intra-peritoneal Hæmorrhage at third week—Operation—Subcutaneous Transfusion of Salt Solution—Recovery.*

Mrs. B., æt. 30, married, no children : splendid physique. She always enjoyed good health, except about a year ago, when she had a miscarriage, followed by some sepsis, giving chill, high fever, vomiting, abdominal pain and distension. Uterus was curetted and she made a good recovery. Menstruation has been regular since then till last period, which should have occurred three weeks ago. During past week she has had some uneasiness and pain in lower abdomen ; also slight bronchitis.

While dressing on the morning of November 22nd she felt severe pain in abdomen and had desire to defæcate. Going to closet did not relieve pain, which grew worse and was accompanied by faintness and vomiting. When I saw her an hour later she was in great distress, was pale and vomiting. Pulse 80 and regular, temperature 98°.

The abdominal walls were very tense. There seemed slight dulness in right inguinal region. Examination by the vagina was unsatisfactory, so great was the pain, but there was evident fulness and great sensitiveness to right of and posterior to uterus. Bowels had been regular in all respects. The diagnosis lay between a ruptured extra-uterine foætation and a ruptured abscess of tube, as the sudden and violent onset, the evident and great distress and the marked shock seemed to preclude everything else when taken in connection with previous history and condition. Gave hypodermic of morphia to relieve pain and shock. Two hours later she was extremely pallid. No pulse could be found at wrist, vomiting and pain continued,

abdomen was more distended and very tense and tender. I advised operation as the only hope, and that a very poor one, as there was evidently very severe hæmorrhage.

Owing to delay in procuring counsel I did not operate till 9 p.m., thirteen hours after onset. She was removed two blocks to St. Francis Hospital, and when placed on table seemed a very poor subject indeed for operation. She was pulseless and exsanguinated. The abdomen was distended and dull. There was no vaginal discharge.

Operation—Immediately before administering chloroform a hypodermic of strychnine was given and preparations made for the subcutaneous transfusion of normal salt solution, one litre of which was transfused during operation. The abdomen was found filled with clotted and fluid blood. There was a tear (.5 cm. long) in upper anterior aspect of tube about 1.5 cm. from right cornua of uterus. Here the distended tube formed a small, thin-walled sack about 2 cm. in diameter and extending to uterus.

In tying off this sack the ligature cut through the tube at cornua, which we had then to practically sew up in order to secure it. I then tied off broad ligament and removed tube and ovary, which were free from adhesions. Left tube and ovary normal. It was difficult to remove all blood from among folds of abdomen; I therefore used drainage tube and hastily closed wound. After operation I used hypodermics of strychnine, ether and brandy and a second litre of salt solution subcutaneously. She was pulseless and unconscious during the night and for twenty-four hours after operation. While removing fluid from tube next day she collapsed and appeared to be dying. Legs were bandaged tightly and elevated, hypodermics of ether and strychnine given and enemata of hot water and brandy. She slowly rallied. On third day had slight bloody discharge from vagina.

On third day she developed a severe pain in the right side and had quickened respiration, with cough and some elevation of temperature. For next two weeks she suffered

from a mild but troublesome pleuro-pneumonia of lower lobe of right side, temperature ranging from 100° to 102° , pulse 140 to 160, respiration 30 to 40. As she recovered from the lung lesion a severe cystitis developed and was troublesome for a few days, but soon yielded to local treatment. The glass drainage tube was retained for eight days and then rubber tube substituted. The discharge for first few days was nearly entirely blood, then serous and later sero-purulent, showing infection of drainage tube track. This infection occurred from the abdominal wound. About the fourth day tissue included in sutures began to look bad and later showed signs of sloughing, so that on the eighth day, in despite of severe cough, I had to remove sutures and found all the fat tissue included in sutures gangrenous and it had to be cut away, leaving a huge open wound exposing below the united deeper tissues. In a few days, in spite of packing wound with gauze and firm strapping, a large hernial protrusion was produced by severe cough. This again lessened as cough decreased. On January 2nd, 1895, I gave chloroform and curetted the sinus, removing stitches placed in cornua. I then passed nine silk-worm gut sutures in abdominal wound, taking care to bury them in hernial protrusion and approximate recti muscles. Good union resulted. Sinus closed completely about 25th February. There is no sign of hernia, though she wears a support as a matter of precaution. She has not menstruated yet.

Remarks—The sac in fresh state was about 2 cm. in diameter, the rent in it about 0.5 cm. A microscopic examination of it was not made. In the ovary the recent corpus luteum was quite evident; the tube was normal.

The amount of blood in abdominal cavity was very great, distending it much and invading every part. Without the salt solution, which was injected into arms and loose tissue below and posterior to axillæ, I do not think she would have survived. An aspirating needle attached to a glass fountain douche, all sterilized, furnished the necessary apparatus.

CASE II. *Extra-uterine Pregnancy of Seven Weeks—Intra-peritoneal Hemorrhage—Operation—Death on Third Day.*

Mrs. M., at 33 years, third pregnancy.

On Thursday, March 21st, about noon, she was taken with severe sickening pain in right side of lower abdomen, followed by vomiting which continued for 36 hours. Pulse when seen by doctor soon after onset was 118. Temperature normal.

During the evening there was a slight discharge of blood. As she had not menstruated for seven weeks and believed herself pregnant, the doctor suspected an abortion and tamponed the vagina overnight. On removing tampon in morning found no further flow. Pain and vomiting, with obstinate constipation, continued, and she was given cathartic and enemas without effect.

23rd. Pain easier, vomiting stopped. Pulse over 100 ; highest temperature 101°.

24th. This morning pulse 96, temperature 98 $\frac{2}{3}$ °. She feels better. To-day given calomel gr. ii in repeated doses. About noon very severe pain recurred, with vomiting ; she became weak and faint, with shortness of breath ; had ringing in ears, and black flashes before eyes.

This was the history I obtained when called in consultation at 8.00 p.m., March 24th.

Woman was very pale and anxious looking, restless and extremely thirsty. Pulse, 130 ; temperature, 101°. Abdomen was distended and tender on pressure, and slightly dull on percussion in lower zone. No flatus passed since onset of attack. Per vagina, uterus was found somewhat enlarged and pushed a little to left side. The right fornix and the cul de sac were flattened and pushed downward as compared with left side. Moving uterus caused severe pain. There was a sense of indistinct fluctuation.

The abdomen was opened as soon as preparations could be completed, the kitchen being used for operating room. On incising the peritoneum the blood spurted at least six

inches high. There was a great quantity of blood, fluid and clotted, in peritoneal cavity. The right tube was found ruptured about its middle, tied off and removed.

It was difficult to completely remove all blood clots from among the folds of intestines and from pelvis. When they were removed, cavity was flushed with hot water, sponged dry and glass drain used after seeing that stump was secure. Peritonæum closed with catgut, and other tissues with silk. (Whole time on table one hour.) She was put back to bed in good condition and given 1 litre of hot salt solution by enema.

25th. Pulse, 130; temperature, 101°. Feels well, is strong, colour improved. Passes flatus freely. Tube emptied three times, first time $\bar{3}$ ss. of blood, afterward about $\bar{5}$ ii. of clear serum.

26th. Does not look so well, and has not slept much. Pulse 120 to 130; temperature, 101°. Secreting urine freely. Takes everything allowed her with relish, and has vomited only once since operation. She is passing much bad smelling liquid from the bowels, saturating the bedding under her. To-day passed a decidual cast of uterus. Distension and soreness had disappeared from abdomen and there is very little serum in tube.

27th. She had a restless night, and had only a little sleep secured by a small hypodermic of morphine. She complained a good deal. At 5 a.m. complained of being cold and faint and very weak.

When I saw her at 8 a.m. she appeared dying. Pulse 150, weak and irregular, extremities cold. I gave hypodermics of ether and strychn., and brandy by the mouth. She rallied after these. I examined the abdomen and drew off about $\bar{5}$ i. of clear serum, and then removed glass drain, leaving a small rubber tube in its place. The abdomen was flat, soft and free from tenderness. She passed flatus and I found bedding beneath her quite saturated.

I then gave an intra-venous injection of normal salt solution, 1 litre. After this she rallied remarkably for a few hours, but again sank and died at 1.30 p.m.

Remarks.—The sac was in middle of right tube and about 3 c.m. in diameter. The rupture was transverse to tube, and included about one-half the sac, the inside of which was lined by chorion. On distal side of rent was a small adherent clot, which probably marked the seat of tear through which the first hæmorrhage occurred; the larger tear being, in all probability, produced Sunday noon when she complained of symptoms pointing to severe and sudden hæmorrhage. Death was, in this case I think, directly due to the cathartics which had been administered and which, after the peritoneum was cleaned of effused blood, caused such a copious watery discharge from the bowels, as to drain the tissues of the fluid (already dangerously lessened by hæmorrhage) necessary to carry on the vital processes and maintain life. There certainly was no evidence of secondary hæmorrhage or of peritonitis.

Before transfusing I carefully examined for any such evidence, and found the abdomen flat, flaccid and free from tenderness, and the serum removed from tube was clear and scanty. Neither did she complain of much or any pain. There was no shock following operation. She was well and strong until about 36 hours after these evacuations began, when she began to show evidence of failing, ending in collapse early in the morning before her death. It is barely possible that had I realized sooner the danger of those discharges I might, by using opium to control peristalsis and an earlier resort to transfusion, have saved her life.

It would appear that this case (typical as it is) should have been diagnosed early and with certainty; yet the doctor having her in charge is up to the average in ability, and that he could for three days and more ply her with enemas, cathartics and like medication would seem to justify the query, Do not many more women than we imagine die from unrecognized extra-uterine foetation?

CASE III. *Extra-uterine Pregnancy—Operation—Recovery.*

Mrs. R., æt 25 years. Two children æt 3 and 1 years.

Well after last confinement ; up and working in three weeks. Menstruation reappeared in seven months. Was then regular. Eleven weeks ago she skipped regular time two weeks and then began to flow. After bleeding one week she had severe cramps, which made her sick and faint, and compelled her to go to bed for a day. The bleeding continued and contained clots. In about seven days had severe cramps again. Thus she bled for five weeks, cramps recurring about every seven days, and at each recurrence compelling her to go to bed for one or two days. Was called first April 7th on account of these pains. There was no vomiting. Had difficulty in passing urine, and constipation. No bleeding for some days. Pulse, 110 ; temperature, 100 $\frac{3}{4}$.

Examination.—Abdomen tense and somewhat distended. There is a large mass in pelvis reaching about 5 c.m. above pubis and occupying mostly the right side. This is tender on palpation. The cervix is pushed forward under pubis by this mass, and on careful palpation the uterus can be made out above pubis in front of and closely adherent to mass. At times a peculiar crepitation can be detected by the examining finger. The tumour is slightly movable.

Diagnosis.—Extra-uterine pregnancy or pyosalpingitis following abortion. Advised immediate operation.

Operation—April 9th. Irrigated uterus with 2% carbolic after disinfecting vagina. Found considerable free blood in the peritoneal cavity. There was a large sac lying to right of uterus. Omentum was adherent to the sack. It was freed and pushed upward. The adhesions, which were not firm, were rapidly broken up, without much hæmorrhage, and sac, including tube and ovary, delivered and removed. The stump was large, and included several remarkably large vessels.

I sewed the peritoneum of stump over raw surface in hopes of lessening adhesions. Then with fingers, sponges, and irrigation with hot salt solution, I removed great quantities of coagula from Douglas's cul de sac. The large

surface behind uterus presented a black, torn appearance, coagula had lain so long and adhesions formed. Introduced glass drain to deepest part and packed about it with iodoform gauze. She made a rapid, afebrile recovery. The gauze was removed in 48 hours, and all drainage on the eighth day.

Following is abstract of report by Dr. Adami, of McGill who kindly examined specimen for me :

It is undoubtedly a case of extra-uterine pregnancy ; but I cannot discover the faintest sign of the foetus. The history makes it probable that foetus escaped, and that there was a tubal miscarriage at the end of the sixth week. I find very clear evidence of the placental site and of the placental villi. The site is beyond the middle point of dilated tube (passing outward). Here I came across fairly numerous old villi, tending to become fibroid in their centres. The ovary contained a corpus luteum of fair size.

We have, therefore, to deal with an old extra-uterine pregnancy in which, after separation of the embryo, the placental site has continued to bleed.

RESUSCITATION OF A NEW BORN CHILD BY RHYTHMIC TRACTION ON THE TONGUE.*

By KENNETH CAMERON, B.A., M.D.,

Assistant Surgeon, Montreal General Hospital.

Rhythmic traction on the tongue as a means of resuscitating the asphyxiated, especially the drowned, seems to have been first suggested by Laborde, of Paris, in a paper in *Le Bulletin Médicale*, January, 1893. Since then a number of French writers have testified to the value of the method, not only in drowning but in the resuscitation of the new-born and in asphyxia or apparent death from many other causes. Hardly any communications on the subject have appeared from English sources.

I report the following case to bring the method before the notice of the members of the Society.

On Friday, February 1st, I was called to see Mrs. L., who was in labour. The membranes had ruptured and a large quantity of amniotic fluid had drained away. Both feet were presenting in the vagina, and after an unsuccessful attempt to replace them and perform cephalic version, extraction was proceeded with. No difficulty was experienced in delivering the body, but there was a good deal of delay in the birth of the head, the cord having ceased to beat some little time before the head was born. The child, after birth, was limp and cyanotic; artificial respiration, slapping, applications of heat and cold alternately, kept up for about ten minutes failed to cause a respiratory movement, an occasional faint flutter, however, could be felt over the cardiac region.

Rhythmic traction on the tongue was then practiced. The child being placed well over on its right side, the tongue was gently seized by a pair of Pean's forceps and forcibly drawn forward, and then forcibly shoved back, as

* Read before the Montreal Medico-Chirurgical Society, March 8th, 1895.

far as possible in both directions. This was kept up at the rate of about 30 or a little more per minute. Hardly half a minute had elapsed, after beginning the traction, before the child gave an inspiration, in about another half minute a second one followed ; after that they became gradually more frequent and soon the child began to cry. The child has since been perfectly well.

This very marked effect, produced so rapidly, and by such a simple manœuvre, impressed upon me the very great value of the method, and that it is the one which should be made use of *first* in all such cases, or in any form of apparent death.

CARDIAC HYPERTROPHY—TREATMENT.

By F. W. CAMPBELL, M.A., M.D., L.R.C.P. Lon.

Professor of Medicine, Bishop's University; Assistant Physician Montreal General Hospital; Physician to Western Hospital.

I confess that when I undertook to speak on the treatment of hypertrophy without or apart from valvular disease, I thought my work would be a comparatively easy one. When, however, I began to look into the subject I found comparatively little on this special form of heart disease, and what I did meet with was so mixed with the treatment of valvular hypertrophy that it was a somewhat tedious task to separate it. When accomplished it was not satisfactory, for after all the treatment of cardiac hypertrophy is much the same, no matter what is the cause. At the outset the inquirer is met with the question, "With what hope may the treatment of an hypertrophied heart be undertaken?" Can we control the nourishment of the heart by any means possessed by our art? Some have maintained that this can be done, but the majority hold a contrary opinion. The signs which were considered as indicating the former have been proved to be misleading and fallacious. Thus the impulse may be reduced in force and extent, the first sound changed in its character and the area of cardiac dulness lessened. Notwithstanding all these signs the hypertrophy remains the same, and the apparent diminution has been brought about by disengagement of the right cavities.

Walsh says that the theoretical indication is to tranquilize the heart by diminishing the quantity without deteriorating the quality of the blood. For this purpose he recommends an occasional venesection from the arm, taking at each time from four to eight ounces, at intervals of from two to six weeks, according to the robustness of the patient. Care, however, must be taken not to induce

an anæmic condition of the blood, which would very seriously aggravate the disease. If general bleeding is not to be thought of, then wet cupping should not be lost sight of. Personally I have met with very few cases of the disease under consideration, but in two or three I was decidedly of opinion that my patients were much benefited by wet cupping. I have also had experience of the benefit of a half dozen leeches applied over the cardiac region in calming the heart's action. We do not possess any drug capable of diminishing the bulk of the heart. Iodide of potassium has been used for this purpose and pushed to iodism without exhibiting any such power.

Walsh says quietude—physical, emotional, intellectual—is the very first of curative agents for an enlarged heart. To aid in tranquilizing it, direct cardiac sedatives—hydrocyanic acid, acetate of lead, digitalis and belladonna (the latter both internally and as a plaster over the heart, which latter I heartily endorse), must be employed during the entire treatment of the case. There must be occasional intermissions. Aconite he also strongly recommended. I have given it in the form of Fleeming's tincture, one drop every two hours till its effect was manifest. It also has very great power in removing those disagreeable sensations so common in the præcordial region. Saline and aloetic purgatives aid the good effects of rest, and diuretics are useful independent of any dropsy. Unless the patient is very plethoric, animal food in moderation may be allowed—fish under all circumstances is permissible. Alcoholic liquors must be avoided; any fluid taken must be limited. Passive open-air exercise is to be strongly recommended.

Page says digitalis is contraindicated as a rule, unless associated with a mitral lesion. Even then, if the heart's action is very forcible, it may be omitted. He considers aconite as the drug of most value and strongly deprecates the use of tobacco and alcohol. A course at the German Spa, Carlsbad, he has found often useful; not only for its immediate curative effect, but also for the knowledge one learns of how to take care of oneself.

Bartholow, whose faith in the efficacy of drugs is almost unlimited, says that he has met with good results from saline purgatives, which draw off considerable fluid from the intestinal canal. He has also used veratrium viride, which he considers more powerful but not so efficacious as aconite. He advises the potassa salts so as to act on the kidneys and thus carry off a larger amount of waste material.

Fagge has very little to say on the subject. In fact he only devotes twenty-six lines to it, in which he speaks favourably of means I have already mentioned, and adds, "Bromide of potash is mentioned favourably."

Our distinguished friend and late fellow member, Dr. Osler, in his splendid work on practice, enters fully into the treatment of hypertrophy with valvular disease, dividing his subjects under two heads, viz., (1) stage of compensation, where he says medicinal treatment is not necessary and often hurtful, but lays down a course of general treatment such as I have already mentioned; (2) stage of broken compensation—under this head he speaks strongly of the benefits to be derived from rest, and illustrates it by cases he met with during the time he was one of the physicians of the Montreal General Hospital. The embarrassed circulation, he says, must be relieved. This is accomplished by venesection and depletion through the bowels. Those remedies must be used which stimulate the heart's action. The best of these is digitalis. Broken compensation, no matter what the valve lesion may be, is the signal for its use. He speaks of its toxic effect due to its cumulative action and sudden outbreak. One such case I saw when the resident house apothecary during my student days at the Montreal General Hospital. Strophanthus, convallaria, citrate of caffeine and Adonis vernalis are used, and I have named them in the order of their value. But why waste time over hypertrophy with valvular disease when our time has been occupied in discussing hypertrophy *without* valvular disease? I reply because the

treatment of each is much alike. In writing of our special subject Dr. Osler says, "The treatment of hypertrophy and dilatation has already been considered under the section on valvular lesions. I would only here emphasize the fact that with signs of dilatation as indicated by gallop rhythm, urgent dyspnoea and slight lividity, venesection is in many cases the only means by which the life of the patient may be saved, and from 20 to 30 ounces of blood should be abstracted without delay. Subsequently stimulants, such as ammonia and digitalis, may be administered."

Dr. Adolf Strumpell in his latest work on medicine says: "The treatment of idiopathic cardiac hypertrophy is precisely the same as for valvular disease and myocarditis." On referring to the chapter on these subjects I find he divides them much as Osler has done, and that he practically discusses the same remedies. When compensation has been established Strumpell speaks highly of baths. He says they are not only well borne by cardiac patients, but they exercise a peculiarly beneficial and invigorating influence upon the action of the heart. Their temperature should be from 90° to 93° F.

Dyspnoea is one of the most distressing symptoms of heart disease. Our efforts should, of course, be directed to restoring compensation. If we fail, as in most cases we will, we must then treat the dyspnoea, symptomatically. Morphia is most efficient in this respect. It is usually well borne, and gives great relief, especially if it be given hypodermically.

There are certain principles which apply more or less to all cases of heart disease, and these are dwelt upon at considerable length by Roberts. General management is always a matter of much usefulness. If occupation is satisfactory it may be continued, but the effect must be watched. Oertel has written favourably of the plan of treating certain forms of heart disease by "graduated exercise." In carrying out this method, the patient is made to walk up paths of gradual ascent, the amount of exercise being pro-

gressively increased as the patient is able to bear it. Special treatment in the form of certain gymnastic exercises is also advocated. Avoid all mental disturbance. Anxiety, worry, mental strain or excitement in connection with pecuniary matters, business, public life or politics is very bad. Avoid anything emotional, and get at least eight hours sleep. As regards medicinal agents, Robert's says: "As regard digitalis, it is not suitable where there is marked hypertrophy." When dilatation is also present he considers it a valuable remedy. Nitro-glycerine is recommended in cardiac dyspnoea, especially if the pulse tension is high. With regard to insomnia or disturbed sleep in cardiac cases, he finds stimulants useful—chloric ether, spiritus ether co. and spirits of camphor of service in some cases. Opiates, chloral hydrate, especially the latter, are dangerous. Paraldehyde, sulphonal, chloralamid and urethane are often good hypnotics. It is of great importance to pay attention to all the principal organs and, as far as possible, prevent them from becoming involved, especially the lungs, kidneys, liver and digestive organs generally. The article on the heart in Pepper's "System of Medicine" is by Dr. Osler. It says: "The treatment of hypertrophy consists largely of measures directed towards its maintenance to a degree proportionate to the extra work which the heart has to do. In organic disease the welfare of the patient depends on this—we cannot remove the cause, but we can, by careful hygienic and dietetic regulations, maintain the balance between the defect and the compensation. The original lesion is usually beyond control, and the special indications are to moderate certain dangers associated with hypertrophy and to promptly meet the earliest symptoms of heart failure. In the hypertrophy associated with arterial and renal disease, a special danger exists in the tendency to rupture of vessels. In these cases a vigorous heart beat, with a very high tension in the peripheral arteries, indicates mischief which may be met by taking prompt measures for the reduction of the high pressure. A brisk cathartic may avert an attack of

apoplexy, and there are cases where the old practice of bleeding—so much at one time in vogue for hypertrophy—is justifiable—might I add—*more* than justifiable. Palpitation and shortness of breath are the earliest signs of failing compensation and call for treatment, in which rest is a very important factor, in fact in many cases is all that is required. Within the past year or two I have found very excellent results in cases of weak or dilated heart by the administration of pellets of cactina—one every two hours during the day. These pellets each contain $\frac{1}{100}$ of a grain of cactina—the active proximate principle of *Cactus Mexicana*. My friend, Dr. Fuller, of Sweetsburg, whom I saw last summer in consultation, told me that his experience of their employment had been very satisfactory. I have also lately, to a slight extent, used as a cardiac tonic the Kola cordial made by Stearns, of Detroit, and while my experience has been limited, yet I am satisfied that it is an excellent cardiac tonic. It accelerates the pulsations of the heart, at the same time increasing its power and regulating its contractions. It also has a diuretic action. In many ways its action resembles *digitalis*, but it has not its cumulative action. It also has an invigorating effect on the general system. This is due to the fact that it contains more caffeine than is found in coffee, and an equivalent amount to that met with in the highest grades of tea. It also contains theobromine, an important ingredient in cocoa. It thus possesses the properties of coffee, tea and cocoa, added to a peculiar active principle of its own, called “Kolanine,” which so far is said not to have been found in any other vegetable product. *Strychnia*, either in pill form or in the liq. *strychnia* of the British Pharmacopœa or hypodermically, is a capital tonic to the muscles, both voluntarily and involuntarily. In cardiac dyspnoea I have had excellent and prompt results from the application of an ice bag over the præcordial regions.

Retrospect Department.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D.,

Gynecologist-in-Chief, Montreal General Hospital; Associate Professor of Gynecology, McGill University.

Gonorrhœal Pyelitis.—Dr. HOWARD KELLY, of Baltimore, reports a very interesting case in the *Johns Hopkins Hospital Bulletin* of February, 1895: The case was one of extensive accumulation of pus in the left ureter, extending up into the pelvis of the kidney, due to stricture of ureter at the vesical end, associated with gonorrhœa. The stricture was treated by dilatation of the ureter by ureteral catheters increasing in diameter from 2 mm. up to 5 mm.

Sigmoid Proctostomy.—Dr. HOWARD KELLY reports a very interesting case of this nature in the *Johns Hopkins Hospital Bulletin* of February, 1895. The patient had been operated upon some time before by a surgeon for the relief of suffering in a young woman, due to chronic pelvic peritonitis. After removing some of the diseased structures it was found that the rectum had been mistaken for the left Fallopian tube and was divided. Both ends were brought out at the lower end of the wound and sutured there. It was to relieve this condition that Dr. Kelly performed sigmoid proctostomy. The operation consisted of separating the adhesions, tying off the open end of the rectum, and passing the sigmoid end of the bowel into a slit made in the sectum below the occluded end. The sigmoid was pulled through the slit and secured by sutures held outside the aperture by being fixed in the bite a pair of forceps. Union took place without any internal suturing and the patient recovered.

The French Method of Vaginal Hysterectomy.—Dr. EDGAR GARCEAUS, of Boston, writes a paper (*Annals of*

Gyna. and Pædiatry., March, 1885), giving a detailed account of this operation.

This operation consists in removal of the uterus and appendages by the method known as *morcellment*, through the vagina. It was first done by Péan, of Paris, where oöphorectomy for relief of pain had been unsuccessful. It is being at present championed by Péan, Pozzi, Segond, Richelot, Jacobs and Landau. The writer has seen Chaniponiers and Segond do this operation several times in Paris, and it appeared to him to be an operation only suitable in certain cases. There are two dangers in connection with it which do not occur with the abdominal method. Hæmorrhage, or rather great loss of blood during the operation, and the danger of opening the lumen of the bowel in separating the adhesions, which has to be done entirely by the sense of touch. The operation undoubtedly has a future in pelvic surgery. The shock is somewhat less than after oöphorectomy, because everything in the pelvis is removed, but we think the abdominal section will still be the favourite method in the majority of cases. We think, however, with Landau, that where pus cavities have ruptured into the bladder, rectum or intestines it will be the better method. In the carrying out of this French method of removal of the uterus, tubes and ovaries there will always be one great difficulty to be overcome with English-speaking women. When you explain to a patient that her ovaries are diseased, are the cause of her suffering and must come out, it does not strike her with the same horror as when you say to her that every sexual organ she has in the pelvis must be cleanly swept, including her womb. The shock will certainly prove too much for her and she will peremptorily refuse to have anything of the sort done. If, however, she has a large fibroid tumour, causing her much suffering, or cancer of the uterus, and under these circumstances she is informed that the diseased parts must be removed, the information is received by her with a very different feeling. Mentally the womb to a

woman means her everything, the distinctive mark of her sex; the other pelvic organs are mere appendages thereunto, and she knows of them merely by hearsay, and as long as she has her womb she feels that she has not been mutilated *in extenso* and is therefore still a woman.

The importance of Menstruation in Ascertaining Mental Irresponsibility.—KRAFFT-EBING (*Jahrbuch für Psychiat.*, Vol. X.): (1) Psychological integrity of women during their menses is a question most useful to consider in legal medicine.

(2.) It appears expedient to find out if the crime committed by the prisoner coincided with her menstrual period. Under the term "period" the author includes not only the days during which blood comes away; but those which precede and follow it.

(3.) An examination of the mental condition should be advised when the criminal act coincides with this period. This examination is indispensable when the history of the patient reveals a neuropathic taint or the existence of mental trouble during former menstrual periods, or when the act itself discloses peculiar changes.

(4.) When it is evident that the menstrual process exercised a powerful influence on the mental life of the subject, she should have the benefit of this fact, even if no menstrual insanity can be made out in what concerns the application of the law in the given case.

(5.) When the crime coincides with the epoch of menstruation in a feeble-minded person she should be declared irresponsible, for there is reason to believe that the act was one of passionate impulse.

(6.) But the subjects who obtain a verdict of "not guilty" on mental menstrual trouble should be considered as extremely dangerous, and are to be put under a severe watch at the epoch of their menses. The best thing is to put them into an asylum, where they will have good care and often a cure is brought about. The author gives twelve cases.

In such cases it might, however, be well to consider whether it would not be more humane to give these patients a chance of freedom by bringing about a premature menopause. Menstrual epilepsy has been cured in several cases and why not menstrual insanity.

The Nerve Theory of Menstruation.—CHRISTOPHER MARTIN (*The British Gynecological Journal*, November, 1893.) The conclusions of this well-studied paper are as follows:

(1.) Menstruation is a process directly controlled by a special nerve-centre.

(2.) That this centre is situated in the lumbar part of the spinal cord.

(3.) That the changes in the uterine mucosa during the period are brought about by catabolic nerves, and during the interval by anabolic nerves.

(4.) That the menstrual impulses reach the uterus either through the pelvic splanchnics or the ovarian plexus—possibly both.

(5.) That removal of the uterine appendages arrests menstruation by severing the menstrual nerves.

Affections of the Eyes due to Dysmenorrhœa.—Dr. GALLEMAERTO (*Archives de Tocologie et de Gynecologie*, January, 1895) reports two cases with functional affection of the eyes due to dysmenorrhœa. The author gives a brief review of the work in this direction. The acuteness of vision and the field of vision during menstruation has been studied by Finkelstein. The author found that there was no change in central vision, but that there was a contraction of the field of vision, which commenced two or three days before the period, attained its maximum on the third or fourth day of menstruation, and ceased about the eighth or ninth day. This change of the field of vision was attended with other nervous phenomena, such as headache, palpitation, etc. The contraction was not alone for white, but also for red, yellow and blue.

Results of Total Castration by way of the Vagina in

Affections of the Appendages as Compared with those of Abdominal Bilateral Ovaric-Salpingectomy.—Dr. JACOBS, Brussels: Since the First International Congress of Gynecology and Obstetrics, held at Brussels in 1892, the question of total castration by the vagina has made great progress, and I believe that we are able to present strong arguments in opposition to the partisans of the abdominal method of operation.

For my part, I have been able to keep under observation for a long time patients on whom I had operated both by way of the vagina and the abdomen, so as to estimate the comparative value of the two methods by the remote results of each.

I performed total vaginal castration in 184 cases of purulent or chronic bilateral "annexitis," with or without complications in neighboring organs. The results in these 184 cases were 179 recoveries and 5 deaths, that is, a mortality of 2.71 per cent.

This death rate proves that the danger attending operation, far from being greater, is even less in vaginal castration than intervention by way of the abdomen.

Adding together the statistics of Terrier, Terrillon, Doyen, Schauta, Chrobak, Zweifel, Martin, Jacobs, Lawson Tait, Dubois, and Gallet, we get 1540 cases of operations by way of the abdomen, with a mortality of 5.7 per cent., whereas the statistics of interventions by way of the vagina, furnished by Richelot, Doyen, Péan, Segond, Rouffart, and Jacobs, give us a mortality of 4.49 per cent. in 690 cases.

Moreover, it is to be noticed that at first vaginal castration was reserved for cases in which it was impracticable to operate by way of the abdomen. Considering the success obtained under these circumstances and the invariably favourable issue in cases where the conditions were less grave, we are convinced that there is every advantage in practising internal castration and excision of the appendages *in all cases where the surgeon is led to resort to bilateral ovario-salpingectomy.*

During about four years I have kept in view 98 of the patients on whom I operated by way of the vagina. Out of this number 6 complained of painful adhesions contracted with the bladder, 1 lost her reason eight months after the operation, 1 was affected with an intestino-vaginal fistula, 2 are troubled with very severe intermittent attacks of pain in the pelvic region; the remaining 88 regained their previous state of health, after experiencing for a short time only abundant perspiration and paroxysms of heat, which rapidly gave way to treatment by hydrotherapy.

A series of patients, for whom I operated for chronic interal affections, both hæmatosalpinx and uterine tumours, associated with bilateral annexitis, were kept under observation for more than a year, no complications of any kind coming to light during that time, as a rule.

On the other hand, I practised 189 operations by the abdominal way for 120 cases of bilateral and 69 of unilateral annexitis (pyosalpinx, hæmatosalpinx, bilateral ovarian affections, etc.)

Out of these 189 operations, 6 resulted in death, 5 of which were cases of bilateral and 1 of unilateral annexitis; the death rate, 3.17 per cent., was consequently higher than in operations through the vagina.

In addition, remote complications, such as uterine or peri-uterine affections, painful and obstinate metritis, were of frequent occurrence.

In 21 cases of operation for bilateral annexitis, the leucorrhœa was very abundant, the menstruation persisted and was accompanied with severe pain. Unilateral ovarian affections, it is true, showed better results; but the microcystic degeneration was frequently reproduced on the previously healthy side.

The operations practised by way of the abdomen consequently furnished results nearly as successful as those obtained by total castration, so that it was only by watching the effects at a more remote period that I was convinced

of the excellent results attending the latter operation in cases where it is necessary to remove the appendages. As a matter of fact, if the uterus is preserved under these conditions, it very frequently gives rise to severe complications, for the treatment of which palliative measures are generally inefficient. It must also be noted that, in operating in this manner, diseased portions of the oviducts are left in place, which also may cause relapse.

Castration has been reproached with giving no opportunity for variation according to existing conditions, and it has been said that, once commenced, this operation must necessarily be continued to the end. Judging from my experience, this statement is not correct. If the precaution is taken to begin the operation by opening Douglas' pouch, immediately exploring the appendages with the finger, *it is always possible to ascertain their condition.*

When the alteration is found to be bilateral the castration should be complete, but if only the appendage on one side is affected there is no difficulty in practising unilateral ovario-salpingectomy by way of the vagina. I have been able to adopt this procedure in thirteen cases, all of which proved successful.

I believe, therefore, that I am justified in asserting that, in unilateral affections of the appendages, operation by way of the vagina is the method of selection, and that, when the diseased condition is bilateral, total castration by way of the vagina is preferable to bilateral salpingectomy through the abdomen.—*Read at the International Medical Congress, Rome.*

Cancer of the Female Genital Tract.—Dr. H. J. BOLDT: Primary cancer of the vulva is extremely rare, dermoid or epithelial cancer being the most prevalent form, and the inner and lower part of the labium majus the usual site. It is most frequently found between the ages of forty and sixty years, but may occur during childhood or old age. Traumatism, frequently recurring attacks of vulvitis, and chronic eczema may cause it. It rarely extends to the

other labium, but it may involve the perineum, thighs, vagina, bladder, or rectum; and it usually causes death in from two to five years after the initial nodules are noticed. Medullary and scirrhus cancers and sarcoma rarely affect the vulva.

Primary cancer of the vagina is even rarer than of the vulva; it may occur at any period of life, but usually between the twentieth and fortieth year. There may be a broad-based epithelioma blocking the vagina, or small isolated nodules, or small indurated ulcers, that become confluent and involve the entire vaginal circumference. Neoplasms in the vagina rarely attract the patient's attention in their early stages; when discovered disintegration has usually commenced, with hæmorrhage, discharge, &c. In both the vulva and the vagina extirpation of the part involved is but a palliative measure, recurrence being the almost invariable rule. Cancerous infiltration of the vagina from carcinoma of the cervix gives a better prognosis, recurrence being slow.

Cancer of the uterus, while usually occurring between the ages of forty-five and fifty years, may occur at early periods of life. Since the introduction of vaginal hysterectomy it has been found that corporal, though not nearly as frequent as cervical, carcinoma is not at all rare. Cancer of the cervix is generally divided into cancer of the portio vaginalis, of the supra-vaginal portion of the cervix, and of the cervical mucosa. There may be dermoid, scirrhus, adenoid, or medullary cancer of the cervix; the first two forms are comparatively rare; adenoid cancer is the most common form and it sooner or later changes into the medullary type. The early stages of cervical cancer cause no symptoms, and its existence is rarely suspected until ulceration, bleeding, and discharge occur; pain is not a characteristic symptom until extra-uterine tissue is involved. Diagnosis is impossible without a microscopical examination, though the latter may be indefinite in the early stages of the disease. It may resemble follicular

erosion with elevated and indurated edges, though the papillary projections break down with greater readiness in cancer.

The treatment is palliative or radical ; the former is employed when the malignant structure cannot be removed *in toto*. Curetting and subsequent cauterization are one of the best forms of treatment, or else curetting and packing with pledgets saturated with chloride of zinc. If rigid antisepsis is adhered to, piercing of the uterus by the curette may do no harm. I have found Dr. Byrne's method very useful ; the uterus is curetted, the cavity repeatedly sponged with a mixture of commercial acetic acid (3 j), glycerine (5 iij), and carbolic acid (grain xx) ; then the cavity is packed with absorbent cotton. For radical treatment vaginal hysterectomy is the best operation.

Menstruation and Ovulation.—LEOPOLD (Dresden) and MIKONOFF (Charkow), after an interesting study of the relations of menstruation and ovulation, come to the following conclusions :

1. Menstruation, *i. e.* the periodic escape of blood from the mucous membrane of the uterus, is generally accompanied by ovulation, but frequently takes place without it.

2. This periodic escape of blood is dependent upon the presence of the ovaries and upon a sufficient development of the uterine mucosa, two factors without whose activity at the same time the typical escape of blood cannot be conceived of ; accordingly it does not depend upon the maturing and bursting of a Graafian follicle. In accordance with this law menstruation occurs neither when the ovaries are wanting nor when the mucosa is atrophied, even though in the first case the mucosa may be perfectly developed and in the second the processes in the Graafian follicle normal.

3. Should ovulation occur, it is as a general thing to be referred to the time of the escape of blood. It demands for its realization a powerful congestion of the genital organs, lasting several days, and in that case forms a typical corpus luteum.

4. Ovulation also occurs at other times than the monthly escape of blood, but this seems to be rare under physiological conditions.

5. Sometimes the ovulation and the development of a typical corpus luteum are replaced by the congestion of a follicle that is not ripe or ready to burst (atypical corpus luteum).

6. Normal follicles also occur in senile atrophy of the ovaries, in which physiological bursting occurs and which form normal corpora lutea.

In general terms, menstruation with ovulation is more common than menstruation without ovulation.

It is certain that ovulation can take place at the time of the periodic escape of blood without there being any external bleeding (ovulation without menstruation).—*Archiv f. Gyn.*, 1894, Band xlv. Heft 3.

Ligation of both Internal Iliac Arteries for Hæmorrhage in Hysterectomy for Carcinoma Uteri.—KELLY, in a recent case, after ligating the ovarian arteries at the brim of the pelvis, upon attempting to tie off the broad ligaments the tissues were found to be so friable and infiltrated that the ligatures cut the "moment traction was put upon them." Attempts to check the profuse hæmorrhage were futile and the author at once determined to cut off the blood supply of the pelvis by tying the internal iliac arteries. The peritoneum over the arteries was incised, first on the right and then on the left side, and the arteries were ligated by passing stout ligatures by means of the curved aneurism needle. This checked all hæmorrhage. The left ureter had to be dissected out from the mass, which even then could not be completely removed, owing to extensive infiltration of the broad ligaments. In the latter stages of the operation the patient collapsed, but was revived by the transfusion into the radial artery of a half liter of salt solution.

The patient was seen four months later and careful ex-

amination failed to disclose any trace of the carcinomatous process.

The apparent cure of the disease by the cutting off of its main blood supply was an interesting feature of the case.—*Johns Hopkins Hosp, Bull.*

Hysterectomy for Prolapsus.—The conclusions drawn by POZZI in a recent article are:

1. Vaginal hysterectomy may be necessary to permit the reconstruction of the perineum in cases of complete prolapsus. To be efficacious it must be accompanied by the resection of a large portion of the vagina and followed by a restoration of the perineum.

2. The results already published justify the claim that good results are obtained when no one of these three elements of the operation is omitted; but hysterectomy is valueless if done alone.

3. The hysterectomy, colpsectomy followed by colporrhaphy, and the perineorrhaphy may all be done at one sitting. If so done ligatures must be used instead of forceps. Operation at a single sitting is preferred unless etherization of an hour's duration is contra-indicated.

The "colpoplexy" of Martin, Fritsch and others is unnecessary, as the normal processes of cicatrization after a hysterectomy are sufficient to obtain the desired result.

5. The most satisfactory method to remove at the same time the uterus and a large piece of the vagina is to mark out a large triangular flap anterior to the cervix, and a smaller one of the same form posterior, and dissect these entirely free before proceeding to the extirpation of the uterus in the customary manner, if present. Medicated tampons might be useful, also astringent and alterative applications, but caustics would do harm. Iodoform was most efficient when it could be freely applied to the interior surface of the uterus; he had only used the other agents because iodoform was more difficult to apply and because of its odour. Complete closure, if it existed, must be overcome; gradual dilatation was best, with subsequent drain-

age. The atrophied condition of the muscular structure would lead to tearing if rapid dilatation were attempted. Peroxide of hydrogen would be useful. The question had arisen in his mind whether total removal of the uterus would not sometimes be justified, but one should at least try the treatment already referred to. When there was complete prolapsus vaginal hysterectomy was the proper treatment.—*Ann. de Gyn. et Obst.*, March, 1894.

Reviews and Notices of Books.

Twentieth Century Practice. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume II., Nutritive Disorders. New York: William Wood & Company. 1895.

The first article in this volume is on Diseases of the Adrenal Bodies, by Sir Dyce Duckworth. It is scarcely necessary to add that the subject is treated in a very able manner by the distinguished author. The article is chiefly devoted to a description of Addison's disease. A short account is given of certain experiments on the pharmacology of adrenal tissue, but the few cases in which this substance has been employed does not hold out any hopes that it is likely to prove of any value.

Diabetes Mellitus is dealt with in a very elaborate article by Carl Von Noorden, of Frankfort. It extends to about 150 pages. The treatment of the disease receives very special attention.

The article on Acute, Subacute and Chronic Rheumatism is contributed by F. S. MacLagan, of London, the introducer of salicine as an anti-rheumatic agent. The subject is dealt with in all its phases, the unusual manifestations and complications receiving more attention than in any other work we know of.

H. M. Lyman, of Chicago, is the author of the article on Gout. This obscure and difficult subject is considered in all its numerous phases in a very able and practical manner.

A. E. Garrard, of London, writes on Arthritis Deformans. Stress is laid on the importance of the early recognition and appropriate treatment of this disease. How frequently it is found that injudicious treatment on the part of the physician in the early stages (founded on a wrong diagnosis) acts as an exciting cause to the natural degenerate tendency.

The late Dujardin-Beaumetz, of Paris, was the writer of the section devoted to diseases of the muscles. It is unfortunately the last article written by the gifted Parisian physician.

The final article in this volume is on Obesity by Oertel, of Munich. It is of more than ordinary scientific interest.

It will be seen that the various contributors are men of great experience in the various diseases dealt with by them.

The second volume more than sustains the promises of the publishers.

System of Surgery. Edited by FREDERIC S. DENNIS, M.D., assisted by John S. Billings, M.D., LL.D., D.C.L. Vol. I. —History of Surgery—Pathology—Bacteriology—Infections—Anæsthesia—Fractures and Dislocations—Operative Surgery. Pp. 880. Lea Brothers & Co., Philadelphia. 1895.

The volume opens with a masterly article by Dr. John S. Billings on "The History and Literature of Surgery," tracing, as fully as the limits of the space will allow, the growth of the science and art of surgery from the earliest mention up to the present time. Surgical Pathology is from the pen of Wm. T. Councilman, and Surgical Bacteriology from that of Wm. H. Welch, two articles which set forth in a most readable manner what the surgeon wants to know about these subjects. Charles B. Nancrede writes on the Symptoms, Diagnosis and Treatment of Inflammation and its Results, Wm. H. Carnott on Septicæmia, Pyæmia and Poisoned Wounds, J. Collins Warren on Traumatic Fever, Erysipelas, and Tetanus, and Hermann M. Briggs on Rabies. Under the heading of Gunshot Wounds, Dr. P. S. Connor gives a most complete article which, while of more interest to military surgeons, will be read with much pleasure by all, for such cases are only too common in a country where firearms are so plentiful, and the writer illustrates most graphically the lesions which may be produced by various missiles. The monograph on anæsthesia is by Horatio C. Wood, whose experiments and observations on this subject are too well known to need any comment. The editor himself writes an able article on Fractures and Dislocations, which is most fully illustrated by means of carefully selected engravings, the majority of them being from photographs of actual cases, which, while obtaining the desired result, are more valuable on account of their truthfulness of detail. Arpad E. Gerster has given a careful account of the methods pursued in preparing for an operation and the principles underlying the

various details, while the volume is brought to an end by Stephen Smith, who writes on Operative Surgery, and as far as space will allow him does it most thoroughly, but it is difficult to compress a whole volume within the limits of a single article.

The whole volume is much to be praised and has been most carefully edited, so that the articles do not overlap. The print is clear and the paper good, so that it makes a very handsome book. The illustrations deserve particular mention, the details being well worked out and the lines being exceedingly clear cut and definite.

With the three volumes which are to follow, the book will form a most welcome addition to the library.

The International Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. Thirteenth year. 1895. New York: E. B. Treat, 5 Cooper Union. Chicago: 199 Clark Street. Price, \$2.75.

This very useful work contains a summary of the chief contributions to practical medicine during the past year. In addition some special original articles are contributed, some of which are of more than ordinary interest, such as the article by Hector McKenzie on Friedreich's Disease; Ridlon on the Surgery of Infantile Paralysis; Dundas Grant on the Diagnosis of Diseases of the Organs of Hearing; Snayley on the Prevention of Puerperal Fever; Simeon Snell on Eye Sight and School Life; Ruffer on the Treatment of Diphtheria by Antitoxic Serum, &c., &c.

Clinical Diagnosis. By ALBERT ABRAMS, M.D., (Heidelberg) Professor of Pathology Cooper Medical College, San Francisco, Third Edition. Illustrated. New York: E. B. Treat, 5 Cooper Union. 1894. Price, \$2.75.

This is a very complete manual on clinical diagnosis. The present being the third edition, it has been considerably enlarged and carefully revised.

A short but accurate account is given of the more important results obtained by the improved methods of blood examination. The chapter on the urine is very complete.

We recommend the volume on being of value to both practitioners.

Sexual Neurasthenia. (Nervous Exhaustion). Its Hygiene, Causes, Symptoms and Treatment. With a chapter on Diet for the Nervous, by G. M. Beard, A.M., M.D. Edited, with Notes and Additions by A. D. Rockwell, A.M., M.D. Fourth edition. New York: E. B. Treat. 5 Cooper Union. Price, \$2.75. 1895.

This now classical work needs no special reference. In its fourth edition the knowledge on the subject of which it treats is brought up to that of the present.

The Extra Pharmacopœia. By WILLIAM MARTINDALE, F.C.S., Medical References and a Therapeutic Index of Diseases and Symptoms, by W. Wynn Westcott, M.B. Eighth edition. London: H. K. Lewis, 136 Gower street, 1895.

The eighth edition of the Extra Pharmacopœia contains a special chapter on antitoxins, serums and lymphs, and on animal glands and tissues and their preparation. The new compound antipyretic, antiseptics and hypnotics are also fully dealt with.

In every direction additions have been made. We consider this little work almost indispensable for the modern practitioner.

Teratologia. 1895.

This journal, now in its second year, has fully sustained the promise of its early numbers.

The January number contains articles on Congenital Thoracic Deformity, by John Thompson, L.R.C.P.E.; Cerebral Hæmorrhage in a Fœtus. Wm. Osler, M.D.; Pre-auricular Appendages, by J. W. Ballantyne.

In addition to the abstracts of current literature a complete bibliography of the subject is commenced.

In the April number are articles on Teratological Types, by J. W. Ballantyne; Double Penis, by A. A. S. Skirving; Trois cas d'éliphantiacis congeniales, by D. Moncoro; Rigor Mortis in the Fœtus, by J. W. Ballantyne, an interesting short monograph of 20 pages, giving a personal case and 29 references to published cases. The writer holds that fœtal rigor mortis occurs in utero more rapidly than after expulsion, and that its occurrence is not therefore any proof of live birth or independent existence.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS.

MARCH, 1895.

THE CANADIAN PRACTITIONER.

- (1.) A case of puerperal fever, with remarks—T. McKeough, Chatham, Ont., p. 161.
- (2.) Appendix vermiformis—J. Caven and D. Barnhart, Toronto, p. 168.
Diseases of the oral mucous membrane—E. Herbert Adams, Toronto, p. 174.
- (3.) Lodgement of a foreign body in the appendix vermiformis—A. McPhedran and J. Caven, Toronto, p. 180.

ONTARIO MEDICAL JOURNAL.

Prostitution in the profession—James Sampson, p. 256.
Axile adjustment; a new and rational method of delivering the placenta—Wm. R. Nichols, Baden, Ont., p. 258.

THE CANADIAN MEDICAL REVIEW.

Report on Coroners' inquests.

MARITIME MEDICAL NEWS.

- (4.) Melena Neonatorum—F. H. Wetmore, Hampton, N.B., p. 49.
- (5.) Symphysiotomy—G. A. B. Addy, St. John, N.B., p. 50.
Diuretics—A. Halliday, Stewiacke, N.S., p. 52.

MEDICAL NEWS (Philadelphia, March 31st).

- (6.) The treatment of epilepsy—W. H. Hattie, Halifax, N.S., p. 340.

APRIL, 1895

THE CANADA LANCET.

- Artificial feeding and care of infants—John W. S. McCullough, Alliston, Ont., p. 229.
Empyæma of the maxillary sinus or antrum; a case—G. R. McDonagh, Toronto, p. 231.
Cauterization of the Nares, and accidents that may follow—E. Fletcher Ingals, Chicago, p. 232.

ONTARIO MEDICAL JOURNAL.

- Hysterical neuroses, p. 294.
Wrist-drop following gun-shot fracture of middle third of Humerus, p. 294.
Fracture of the ulna with dislocation of the head of the radius, p. 295.

THE CANADIAN MEDICAL REVIEW.

- The treatment of dysmenorrhœa—Albert A. Macdonald, Toronto, p. 119.
Foreign body in œsophagus—C. Trow, Toronto, p. 124.

THE MARITIME MEDICAL NEWS.

Anorexia nervosa—P. R. Inches, St. John, N.B., p. 73.

Effect of certain drugs on excretion of urea, etc. A. Halliday, Lower Stewiacke, N. S., p. 75.

The therapeutics of typhoid fever—M. Chisholm, Halifax, p. 80.
THE CANADIAN PRACTITIONER.

Operations for the removal of ovarian tumours—A. Van der Veer, Albany, N. Y., p. 230.

Obstetric forceps—K. N. Fenwick, Kingston, p. 255.

DOMINION MEDICAL MONTHLY.

Report of the Provincial Board of Health.

(1.) The author reports a case of puerperal fever where, notwithstanding the curetting, the careful and assiduous use of the uterine douche and the use of the ordinary means to conserve the energy of the vital processes and assist in getting rid of the absorbed poison, the patient became worse, when on the seventh day treatment by cold baths was commenced and was kept up as long as there was elevation of temperature. The intra-uterine douche was persisted in, being administered every four or six hours. The recovery was rapid and satisfactory.

(2.) In this paper the anatomy and pathology of the vermiform appendix is discussed, the authors basing their notes on personal observations of a considerable number of cases. There is no structure in the body that one can be less certain of finding "at home." They agree in a general way with Clado, who states that the appendix is kept in place by two folds of peritoneum, (*a*) a meso-appendix attached to the iliac fossa, and (*b*) a fold perpendicular to the first and attached to the posterior part of the ileum, but they find there is a considerable variation with regard to length, position and attachment of these folds. The mesentery of the appendix was *always* present and ran nearly or quite to the tip in other cases; its shape is commonly triangular, but occasionally it forms a narrow band of even width from end to end. In females a double fold of peritoneum runs from the root of the appendix to the ovarian ligament. They also found a corresponding fold from the colon on the left side. The position of the appendix varies so greatly that one hesitates to pronounce which is normal. There may be normal variations or

variations due to ante-natal or post-natal peritonitis. They have not yet found an appendix which could be justly termed extra-peritoneal; it has always been distinctly inside the cavity. The length varies considerably from one-half inch to nine inches, the average being 3.835 inches. A perfect lumen is generally seen varying considerably in diameter in different cases, but complete obliteration is not common. The authors do not think that a contracted outlet is the most dangerous change of calibre that can occur, since intra-appendical accumulations may happen, no matter where contraction may be found. They contradict the statement of Treves that the appendix is frequently absent but state that in many cases careful examination is necessary to find the organ, but that they have never come across one of complete absence. The appendix contains normally more or less mucous, semi-fluid faecal matter is not infrequently seen, with no visible changes. In forty cases six faecal concretions were found, with no signs of damage. Only one true foreign body, viz, a pin, was detected (3). The bacillus coli communis is regarded as a normal inhabitant. The causes, both predisposing and exacting, of appendicitis are multiple; germ invasion is an essential part of the process. It is doubtful whether the pressure of foreign bodies and concretions cause necrosis, and so excite inflammation with perforation, though they may modify the tissue to such an extent as to permit of the lodgement of organisms.

(4.) A case of this rare condition is reported. On the second day after birth, a few hours after a dose of castor oil, a small, dark, tarry stool was passed, followed in half an hour by a profuse flow of blood from the bowel. In the next twenty-four hours there were twelve motions, at first each contained two to four ounces, but they gradually became less in amount and less frequent. The child was blanched, pulseless and apparently dying. Absolute rest was ordered and paregoric, tincture of perchloride of iron and spirits of turpentine were used. In twenty-four hours

there were signs of reaction and in a couple of days the child could nurse again and soon regained its strength.

(5.) This case, which was the first performed in the Province of New Brunswick, was Mrs. G., aged 25, weight 110 pounds, height 4 feet 1 inch, a hunchback and lame in the right leg; had a child two years before which was removed by embryotomy followed by septicæmia and peritonitis. On April 17th, 1894, labour commenced, and on the 20th it was found necessary to perform symphysiotomy, as the head, which was unusually large, had not engaged in the passage, which was unusually narrow. The operation and delivery were performed in the usual way and the patient did well until the third day, when symptoms of intestinal obstruction appeared and she died on the following evening. An autopsy showed that the death was due to constriction of the bowels by a firm fibrous band at the junction of the cæcum and colon. The child lived and was doing well. No measurements of the child's head or of the pelvic diameters are given.

(6.) The term "auto-intoxication" has become very familiar to physicians within recent years, and probably no disease indicates more strongly the likelihood of a species of self-poisoning than that peculiar manifestation of disordered nervous action known as epilepsy. If such convulsive seizures were due to morbid anatomical conditions, the very perfect apparatus which we possess would have conclusively demonstrated such a condition, so we are driven to look in some other direction for the discovery of these "nerve storms," and the author believes that it is towards some toxic material we must direct our attention if we are to find the cause of the trouble. Acting on this theory he has treated a number of cases of epilepsy in the Nova Scotia Hospital for the Insane, and sums up his results that an average of 12.3 fits per patient per month under bromide potassium alone, or in ordinary mixture, has been reduced to just about half that number during eighteen months that he had combined intestinal antiseptics with the ordinary drugs, which result seems to be a strong argument in favour of the theory of auto-intoxication in this disease.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

- Discussion on Cardiac Hypertrophy apart from Valvular Disease.
Experimental cachexia Strumipriva—Dr. Wesley Mills.
Gastro-jejunosotomy—Dr. Shepherd.
Pulmonary Embolism—Dr. Wyatt Johnston.
Aneurism of the Thoracic Aorta—Dr. J. G. Adami.
Pernicious Anemia—Dr. F. G. Finley.
Resuscitation by Rhythmic Traction—Dr. Kenneth Cameron.
Aneurism of the Femoral Artery treated by Ligature of the External Iliac—Dr. Jas. Bell.
Experimental Cachexia Strumipriva—Dr. Wesley Mills.
Experimental Cerebral Localization—Dr. Wesley Mills.
Sarcoma of the Ileum: Resection with the Murphy Button; Death—Dr. Jas. Bell and Dr. Adami.
Suppurative Arthritis due to Typhoid Bacillus—Dr. C. F. Martin.
Rhythmic Traction on the Tongue—Dr. Wesley Mills.
Some Interesting Conditions Attending Post-Nasal Growths—Dr. H. D. Hamilton.
Multiple Osteo-Myelitis—Dr. Armstrong.
Depressed Fracture of Skull—Dr. Armstrong.
Seborrhœa—Dr. J. M. Jack.
A New Form of Ether Inhaler—Dr. Jas. Bell.

Stated Meeting, March 8th, 1895.

DR. G. P. GIRDWOOD, PRESIDENT, IN THE CHAIR.

Dr. R. A. Westley, of Alexandria, was elected an ordinary member.

Experimental Cachexia Strumipriva.

Dr. WESLEY MILLS exhibited a dog from which he had removed the thyroid gland. The animal was in good condition at the time and bore the operation so well that he feared the usual symptoms were not going to develop. The operation was performed on Monday evening, and on Friday most pronounced symptom of dyspnoea and fibrillary twitchings appeared, which, however, lasted but a short time and had almost disappeared when the animal was shown. The only symptoms then present was the dog's extreme dulness. The temperature was about 98°, which was

for the dog slightly subnormal. The subject had been thoroughly investigated by Continental and English scientists, notably Horsley. The symptoms differed in different animals; but were most pronounced in the carnivora. Those referable to the nervous system were increased and then diminished function such as spasms, and later cretinism and myxœdema. The dullness (cretinism) was manifest in this dog; although the contrast between his present and his usual behaviour was not marked. Myxœdema in some cases, needed careful investigation to find; it was certainly not pronounced in either of these cases. In another dog operated upon, dulness, emaciation, and dyspncea were the prominent symptoms. The explanation was, that by excision of the thyroid a controlling influence over metabolism was removed. The dyspncea was caused by the venous condition of the blood, and by the influence of toxines on the respiratory centre. The œdema, dulness, etc., were explained by alterations in nutrition and in the nervous system.

Dr. F. J. SHEPHERD suggested that some of the symptoms might have been due to the effects of the operation.

Dr. JAMES BELL was surprised that Dr. Mills should consider that the changes described could have taken place in so short a time.

Dr. W. S. MORROW corroborated what Dr. Mills had said of the animal's condition.

Gastro-jejunosotomy.

Dr. F. J. SHEPHERD exhibited a woman, æt. 68, upon whom he had performed this operation, and who had been sent to his wards by Dr. G. Gordon Campbell as a suitable case for pylorotomy. The tumour about the pylorus seemed small, well defined and unattached. The patient readily consented to operation, and on August 11th, 1894, an incision was made in the median line and the tumour examined. The case seemed favorable for pylorotomy, so the omentum was tied off, and on lifting up the stomach a large mass of infiltrated glands was seen on the posterior

wall of the abdomen. All idea of continuing the operation of excision was abandoned and gastro-enterostomy performed. A piece of jejunum was brought up to the anterior wall of the stomach and fixed there by a double row of sutures, the outer row of Lembert sutures was continuous. No plate, button or other mechanical device was used. The patient did perfectly well and went out of hospital during the first week of September, being able to eat with comfort, the vomiting having altogether ceased. Dr. Shepherd had not seen the patient again until a few days ago, when she sent for him; he found she was suffering from diarrhoea. Since leaving hospital she had been attending to her household duties as usual, and had no trouble about eating. The tumour could still be felt somewhat larger than in the summer, but patient looked well nourished and had a healthy appearance and did not suffer. Dr. Shepherd said that he thought the results of this operation were excellent, and it was worth doing to obtain six months freedom from pain, and this comfort with the chance, judging from her present condition, of enjoying several months more of good health.

Dr. G. GORDON CAMPBELL said that there had been almost entire absence of symptoms pointing to gastric cancer previous to her admission to hospital. The tumour had been discovered on making an examination of the abdomen. There had been no pain or vomiting and general debility, for which she had spent a couple of weeks at the seaside without benefit, was the chief complaint. While in the medical wards vomiting had commenced, and at one time a very large quantity of stomach contents was expelled. The tumour was about the size of an egg, freely movable and situate about one inch above the umbilicus. Its connection with the pyloric end of the stomach was easily determined by dilating that organ. A test meal had been given and absence of hydrochloric acid demonstrated.

Pulmonary Embolism.

Dr. W. G. JOHNSTON showed a specimen illustrating ob-

struction of the pulmonary artery by an embolus. A number of rounded masses of blood clots obstructed the pulmonary artery in each lung. The history was interesting, both from a pathological and medico-legal standpoint. The man had been dead and buried about one week, when one of his friends made a curious statement: that the deceased had expected some accident to happen to him, and some persons were reported to have been laying traps for him. A post-mortem was ordered, and this curious condition of obstruction in the pulmonary artery found. No evidence of any primary source of an embolus could be detected, and this made it difficult to decide between embolism and thrombosis. In favor of thrombosis was the atheromatous condition of the pulmonary artery, the heart showing an unusual condition of great dilatation on the right side. He was said to have had a systolic murmur, transmitted very distinctly to the right, and owing to his having a very slow, heaving pulse, it was thought to be an aortic direct murmur, and there was some thickening of the aortic valve. Dr. Johnston, however, thought the murmur was produced in the right side.

Aneurism of the Thoracic Aorta.

Dr. ADAMI exhibited the specimen and read the report which will appear in a future number.

Dr. JAS. STEWART described the treatment of the case.

Dr. WESLEY MILLS emphasized the value of laryngoscopic examination in diagnosing aneurisms of the aorta.

Dr. FINLEY thought that Dr. Adami's explanation of the difference between the pulse in the two radials was very ingenious, and seemed to be confirmed by the anatomical conditions present. He also thought that the late Dr. MacDonnell's explanation of the tracheal tugging—the aneurism pressing upon the left bronchus and pushing it down with each pulsation—was borne out by this case.

Dr. LAFLEUR had at present under observation a case of thoracic aneurism, the diagnosis of which was made by a laryngologist, and not by himself. The patient had been

suffering from aortic insufficiency for fifteen years, and had been under the speaker's care for a year. He developed pain of a fixed character in the epigastrium, generally so severe as to prevent sleep at night. A troublesome cough, with huskiness, developed, and examination of the lungs gave negative results. There was no alteration in the size of the pupils, and no evidence of intrathoracic tumour. He finally had Dr. Birkett see the man, and an aneurism was detected projecting into the trachea, immediately above its bifurcation, about the size of a walnut. This case illustrated the importance of internal as well as external examination in such cases. Here, from the point of view of external examination, there was nothing at all to suggest aneurism, except trachea tugging, which was discovered to be present after the laryngological examination had been made.

Dr. H. D. HAMILTON had often treated the patient for his laryngeal complaint at the Longue Pointe Home. He happened to be at the Home one day examining some cases with Dr. Thompson when this last illness began. A sudden attack of dyspnoea had set in, during the course of a bronchitis from which he was suffering, which made them at first suppose the aneurism had ruptured. Pain was always a prominent symptom, and it was constantly referred to the right side. Belladonna plasters gave marked relief when used in addition to the internal medication. The patient lived just one week after this attack.

Three Cases of Pernicious Anæmia.

Dr. F. G. FINLEY read a paper on this subject, which will appear in a future number.

Dr. F. W. CAMPBELL thought the manner of administration might have something to do with the results obtained from arsenic in many cases. He thought it was Dr. Seguin who first called attention to the fact that arsenic, when given in small doses frequently repeated, was much more likely to be followed by beneficial results than when given in the usual manner, three or four times daily. Dr. Seguin, of

course, was speaking of chorea, and of the soundness of his advice in this respect the speaker had had personal experience in several cases. In like manner, however, he believed that in pernicious anæmia the effect of giving the drug every two hours, and gradually increasing the dose, ought to be tried.

Dr. D. F. GURD referred to the treatment by bone marrow and strophanthus which he recently observed in Edinburgh.

Dr. McCONNELL had always believed that the presence of nucleated red corpuscles was necessary before the case could be considered one of pernicious anæmia. He thought that the explanation given of the absence of relative increase in the hæmoglobin in one case, viz., the smaller size of the red corpuscles, was a very interesting point.

Resuscitation of a New Born Child by Rhythmic Traction on the Tongue.

Dr. KENNETH CAMERON read a report of the case, which appears on page 902.

Dr. LAFLEUR remarked that Dr. Cameron's seemed to be one of the earliest reports in English of this procedure. His method differed from that of Laborde's, who advocated making only twelve to fifteen tractions per minute.

Dr. HINGSTON said it seemed to him that the virtue of the process lay in pulling the tongue forward. Shoving it backward was not only useless, but might be even injurious. Pulling the tongue forward and then relaxing it had been a method in use as long as he could remember.

Dr. LAFLEUR took exception to Dr. Hingston's sweeping condemnation of Laborde's method without being sufficiently acquainted with the details. If he had read Laborde's article, he would find the different procedures were based on sound physiological principles, and that the pushing backwards of the tongue was a very essential part of the process.

Dr. MILLS thought the method might be explained by reflex action.

Dr. CAMERON, in reply, said he had not remembered Laborde's exact experiment at the time; but he tried what he thought would be the natural number of respirations to the minute in a new born child.

Stated Meeting, March 22nd, 1895.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Aneurism of the Femoral Artery Treated by Ligature of the External Iliac Artery

Dr. BELL showed a man who had been the subject of an aneurism of the common femoral artery, which had been treated by ligation of the external iliac. The patient, a young man only 32 years of age, had never done any hard work, having been the caretaker of a private car on the Canadian Pacific Railway. He had had syphilis seven or eight years before, and there was no account of any systematic treatment having been employed. He had suffered from the aneurism for several months, until, when he came under observation, it was apparent as a large pulsating tumour extending right up to Poupart's ligament. Ligation of the external iliac was carried out in the ordinary way with great ease and satisfaction. Some interesting facts developed in connection with the restoration of the circulation afterwards. The operation was performed on Monday, January 28th. On the following Wednesday-week (February 7th) pulsation was distinctly evident in the anterior and posterior tibial arteries. As to the aneurism, the pulsation ceased completely in it at the time of the operation, but commenced again, however, about ten days afterwards, and this was again followed by a gradual decline until the condition then present was reached. A little pulsation might be felt beneath and at the inner border of what was once the aneurismal mass, but which was much contracted. This pulsation, Dr. Bell thought, came from some of the enlarged collateral arteries in the neighbourhood. In answer to Dr. Girdwood, as to why there should be so much pulsation then present, Dr.

Bell remarked that the pulsation was completely arrested at the time of the operation; it had returned at the end of ten days. The pulsation, at the time the patient was shown, he did not believe was in the tumour proper, but from some source below, and brought about by the efforts of the system to establish the collateral circulation.

Experimental Cachexia Strumipriva.

Dr. WESLEY MILLS gave the subsequent history of the case presented at the previous meeting. The day after the dog was shown there had been moderate dyspnoea, cretinism, twitching and fibrillary contractions. Emaciation gradually developed and he died on the twelfth day after the operation was performed.

Experiments on Cerebral Localization.

Dr. WESLEY MILLS exhibited a mongrel dog about three months old, from which he had about ten days before removed the whole of the cortical area around the crucial sulcus, which functionally corresponded pretty well to the fissure of Rolando in man and the monkeys. The areas for the movements of the opposite fore and hind limbs and head movements had first been determined by electrical stimulation of the cortex, and the whole area and more than that had been removed, including a little of the white matter beneath on the right side. The only obvious symptoms present, in the dog shown, were slightly ataxic movements of the opposite limbs, especially of the front legs. There did not seem to be any appreciable weakening of muscles, at all events no real paralysis, nor were there any sensory symptoms, unless some partial loss of tactile and muscular sensibility on the affected side. The dog was able to stand and walk in half an hour after the operation, and had always been lively and well, never showing greater changes than when exhibited. An ether and chloroform mixture was the anaesthetic used. There was considerable loss of blood during the operation, but the wound healed rapidly. Antiseptic precautions were used, but not to the same extent as in a case of operation on man.

Dr. Mills proposes to operate on the corresponding part of the brain on the other side shortly and to show the dog again.

Dr. Mills also exhibited a cat (mature) on which he had performed a similar operation. While the cat could walk very well, there was a decided tendency in the opposite paw to turn under, analagous to occasional "wrist-drop." She was also blind and deaf on the opposite side, and very distinctly deficient in tactile sensibility on the same side as the paresis. The cat had been very dull and had taken food badly. There was a strong suspicion that she was partially wanting in the sense of smell. Unfortunately this case had been complicated by suppuration in the wound. However, Dr. Mills will report on the case later. In the meantime he thought it better to draw few conclusions as regards the subject of cortical localization in these species of animals. The subject of localization was by no means in its final stage, he believed, and he might state that after much work he was obliged to hold that Ferrier's localization was neither complete nor wholly correct for *all* the varieties of animals on which he had reported.

Dr. JAMES BELL would like to ask if Dr. Mills had definitely located the motor areas first and removed accordingly. If not, what reason had he for believing that he had removed the whole of the motor area or areas? The deductions drawn from this were, he thought, at variance with our experience in human subjects, in whom the motor areas are well recognized, and their removal causes complete paralysis. He had removed a portion of the cortex of the brain of a man suffering from epilepsy; he removed the hand area, after first locating it accurately, and a result was a definite paralysis of the hand. The man died afterwards from the original lesion, which was not discovered at the time of the operation, viz, a cyst of the anterior lobe, which had ultimately developed into an abscess of the ventricle. Removing the motor area of the muscles of the hand, of course, had nothing to do with the treatment of the

diseased condition, but was done with the object of arresting the convulsive attacks which always began in the hand.

Sarcoma of the Ileum, Resection with the Murphy Button, Death.

Dr. JAMES BELL reported the case, that of a woman 27 years of age, who had suffered five years from diarrhoea and emaciation, commencing immediately after the birth of a child. She gradually failed in health; lately she suffered from some obstructive symptoms and a tumour developed on the right side of the abdomen and could be moved freely about. An operation was performed by Dr. Gardner, who thought it was connected with the uterus or adnexa. No attempt was then made to remove it. The second operation was performed on January 22nd; the distal portion of the bowel was quite small and the proximal portion was much dilated with a thickened hard wall. There was considerable difficulty in fastening the Murphy button into the dilated proximal portion. The patient rallied well after the operation and did typically well from Monday, the day of the operation, until the following Sunday morning, or the end of the sixth day. Then she complained of sharp shooting pains in the vagina; nothing could be detected, however. At 10 o'clock she fell into a collapsed condition, with extreme pain, and died about 2 o'clock in the afternoon. This result was, of course, due to perforation and peritonitis. The peculiar feature in the case was the length of time elapsing before the perforation took place. This was briefly the history of the case.

Dr. ADAMI exhibited the specimen and said that the case here brought forward presented not a few points of interest. An exploratory incision had been made by Dr. Gardner, a small mass of involved gland was removed, and this on section presented in general the appearance of a moderately large round-celled sarcoma. On further examination what seemed to be a locular arrangement could be made out; between rounded or roughly polygonal masses of the sarcoma cells could be seen very delicate bands of inter-

stitial tissue. The specimen, in fact, was undistinguishable from sections of what turned out to be a rapidly proliferating carcinoma of the prostate which he had brought before the Society two years before. The age of the patient, 27 years, was, however, against a diagnosis of this nature, nevertheless he felt it unwise to give an absolute opinion. At the operation the primary growth was removed and the ileum resected. The growth was clearly a sarcoma, a round-celled sarcoma of the submucosa infiltrating the muscular coats in a characteristic manner. The specimen showed parallel rows of round cells passing between the fibres of the circular muscle, and secondary growths were evident both on the serous surface and in the neighbouring lymphatic glands. It was difficult to conceive that this growth had been present, causing stenosis of the ileum for the number of years during which the subject had suffered from symptoms of intestinal obstruction. It would seem more probable that obstruction had been induced by some other cause and that the malignant growth was secondary to the chronic disturbance at the point. As shown by the specimen, the growth was about three inches broad; it was within one inch and a half of the ileo-cæcal valve.

The specimen of removed growth and intestine showed well the great dilatation and hypertrophy of the ileum above the growth.

At the autopsy the small intestine was found shorter than Dr. Adami had ever seen recorded. Including the removed seven inches, the total length from duodenum to valve was under eleven feet. This shortening was not only compensatory to the dilatation, but evidently there was an absence of ileum proper, for the valvulae conniventes were continued in considerable frequency right up to the tumour. Whether the condition was congenital, or acquired through infantile or other intussusception, he would not venture to state, but suggested that the latter condition, with subsequent necrosis of the invaginated portion, would leave a condition capable of entirely explaining the subsequent

history, would leave, that is, an annular cicatrix and narrowing of the gut which might become the seat of malignant growth. The position of the stricture, close to the ileo-cæcal valve, was wholly in favour of this view.

As shown by the second specimen the Murphy button had remained adherent save towards the mesentery. Here sloughing had occurred with passage out of the intestinal contents on either side of the ligatured mesentery, general peritonitis had ensued and had caused death.

The omentum was firmly adherent in the middle line over the old laparotomy wound, while in the right iliac region, over the area of intestinal resection, there was firm fibrous adhesion. Evidently, until perforation occurred, the healing process had been advancing very favourably.

It was worthy of note that this case afforded another illustration of the danger of employing the Murphy button in connection with a viscus that had undergone chronic thickening. The thickened condition of the upper portion of the intestine as compared with the thinness of the part below the tumour was here extremely well marked.

Suppurative Arthritis due to Typhoid Bacillus.

Dr. C. F. MARTIN reported this case. (See page 888.)

Dr. GEORGE A. BROWN had had under his care the same case of arthritis reported by Dr. Martin. After leaving the hospital his arthritis had become aggravated and for a long time it was very severe. He had introduced a hypodermic needle, but could obtain no matter from the joint, and after trying a great many things he finally put it up in a plaster of Paris dressing and kept it there for a month. On removing it there was still a great deal of inflammation in the joint, so he replaced the plaster. At that time it was still in plaster, but the man was able to attend to his work. He applied the plaster from a little below the wrist joint to the elbow.

Rhythmic Traction of the Tongue.

Dr. MILLS gave an account of an experiment he had made on a very young kitten, which, he thought, threw some

light on the real nature of rhythmic traction of the tongue as a means of resuscitation in animals threatened by death from asphyxia.

A kitten, on whose brain he had been operating, succumbed to ether. At once rhythmic traction of the tongue was begun, and after 20 to 30 seconds a single respiration was taken; after a longer period no respiration followed this procedure till the skin over the chest was pinched, when another gasp followed. The method was still further tried to no purpose till the face was sponged with cold water, when one or two gasps followed. It seemed to him that reflex action was plainly the only way to explain these results. The animal was not revived in this case as the sphincter had relaxed and urine had been passed, which was in his experience a sign of death, in the lower animals at all events.

Some Interesting Conditions Attending Post-Nasal Growths.

Dr. H. D. HAMILTON read a paper on this subject, which will be published in the July number.

Stated Meeting, April 5th, 1895.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Multiple Osteo-Myelitis.

Dr. G. E. ARMSTRONG showed a man whom he had treated for this disease; the report is as follows;

M. M., male, æt 25, admitted to Montreal General Hospital on November 8, 1894, complaining of pain in left hand and arm. Present ailment began six months ago by dull, aching pain situated for the most part in the elbow and shooting up and down the limb. Latterly there has been swelling of the hand and forearm.

Personal History—Native of England; in Canada four years. Three years ago had swellings (white) behind right ear and over right sterno-clavicular joint. These burst after five months. Entered hospital and both sinuses were scraped out. The sterno-clavicular wound healed, but

mastoid has discharged ever since and has been scraped three or four times.

One year ago swelling developed on right hand with pain and tenderness. It was opened and treated and eventually healed, but recurred in six months and was again opened. Five years ago he had venereal sores, three in number, coming on two weeks after connection, accompanied by phimosis, necessitating circumcision. No rash, sore throat, or alopecia, but one month later had pains in bones and joints.

Family History—Non-tubercular.

Present Condition—Temperature $98\frac{1}{2}^{\circ}$, pulse 76; respiration 22. Fairly well nourished, sleeps well. Complains of pains in left upper extremity from hand to just above elbow. Left forearm is somewhat swollen, especially about wrist and elbow. Tenderness is more marked about the olecranon. Pain on movement of elbow. No redness and very little heat. Sinus in right mastoid discharging a small quantity of icherous pus. No pain or tenderness. Scars present on right hand and sterno-clavicular joint.

Urine amber, turbid, neutral; no albumen or sugar.

Hot fomentations applied to left arm.

November 16. Right arm painful. Examination shows tender point over olecranon; painted with tr. iodi.

January 2. Since last note the condition has steadily grown worse in the left arm and remains about the same in the right. Hot fomentations have been continuously applied and elevation by suspension tried. An orchitis has developed (left), the testicle becoming the size of an orange.

January 4. Upper part of posterior surface of ulna and dorsum of fifth metacarpal trephined.

January 5. Relief of pain, some movement

January 10. Relief of pain in arm operated on, and also in the other olecranon. Orchitis gone. Temperature normal since the 6th.

January 24. Patient complains of severe headache with nausea. Arms not painful, lungs normal, temperature 100° .

January 26. Temperature steadily rising, to-day $102\frac{1}{3}^{\circ}$. Headache and nausea increased in severity. Headache frontal on the vertex and passing down behind the right ear.

January 27. Examination of eyes shows congestion and blurring of discs, more marked on the right side.

January 28. Given ether, and the tympanum cleared out through the external meatus and also by new trephining. Old sinus full of dark purulent matter, as was also the tympanum. Brain membranes exposed through both openings in mastoid.

January 29. Better, temperature lower, headache less severe. Patient has slight cough and rusty expectoration; lungs apparently normal.

February 1. Temperature fallen to normal.

Dr. Armstrong said that in these cases the osteo-myelitis had been proved to be due to different micro-organisms—the staphylococcus aureus, the streptococcus and pneumococcus had all been cultivated from these lesions. Whether these organisms had all been present during the years the disease was endured it was hard to say, but, in his opinion, the affection had been present for years, and sometimes certain favourable circumstances combined to afford them an opportunity of rapid development or multiplication. At the time of speaking the patient was in good health, better than he had been for years, and there was evidently no active disease going on.

Compound Depressed Fracture of the Vault of the Skull.

Dr G. E. ARMSTRONG exhibited a man on whom he had operated for this condition. His history was:

E. H., æt. 26, admitted March 6th to the Montreal General Hospital with a depressed fracture of skull. Patient was struck by a train on day of admission. When picked up he was unconscious, smelt strongly of alcohol and tossed his arms about violently. Examination showed laceration of scalp extending from left parietal eminence to left

external angular protuberance but only, involving the superficial layers. Depression in skull can be felt over the same area. Pupils natural, great congestion of left eyelid. No subconjunctival hæmorrhage. Pulse slow, 56.

March 7, 6.30 p.m. Still unconscious, quiet. Given ether. Incision enlarged and deepened, etc.

March 8. Somewhat recovered consciousness. Asks for food, but gives many names. Dressed, outside dressing only.

March 9. Conscious at times; irritable and answers foolishly. Sometimes passes urine and fæces into bed, and at other times calls for receptacle.

March 12. Dressed. Catgut drain slipped out owing to sudden movement on part of patient. Is irritable and requires holding during dressing, otherwise is fairly conscious, but cannot give his name.

March 14. In same stupid condition. Continually poking finger in under his left eye.

March 17. Temperature rose suddenly last night to $101\frac{1}{2}^{\circ}$, this a.m. 101. Patient wholly unconscious. Both eyelids red, glistening, and œdematous. Dressed. Œdema of scalp and forehead to the right of wound, none on the left. Irrigated and catgut drain reinserted.

March 18. Temperature remains up and œdema still present. Dressed. Fluctuating surface over area to right of wound; opened, evacuating a large amount of pus, leaving bare bone and showing another fissure running longitudinally. No communication between the two wounds except by probe. Drainage tubes inserted in all.

March 20. Temperature lower. Patient again somewhat conscious.

March 21. Oozing; dressed; clearing up; wholly conscious.

March 25. Temperature normal since 22nd. Dressed.

March 27. Up and walking about.

March 31. Dressed.

Dr. Armstrong described his operation as follows: He

elevated the bone, and after washing out the wound found no evidence of injury beneath the membranes. The bone was then replaced in small pieces. This was done on the 7th; for nine days afterwards the temperature remained normal, but the patient was unconscious for most of the time. When the unconsciousness passed off delirium set in; he disturbed the dressings, fingered the wound and, he thought, innoculated it. The temperature then began to rise and went up to 102.4°. Although carefully redressed, the mischief seemed to have been done, as an abscess developed over the external angular process. In the subsequent manipulations entailed by these complications another fissured fracture was discovered.

Dr. Armstrong thought the interest of the case was chiefly in connection with the man's future, and what after trouble of a cerebral nature was in store for him. He asked for an expression of opinion about opening the membranes in these cases. He had here a man decidedly unconscious; there might have been laceration of the brain, but the membranes were intact and normal and pulsation beneath was distinct, and he did not think it wise to open them in the presence of a possibly septic wound.

Dr. JAMES BELI. regretted not having heard the report of the first case. In the second case he was not quite clear as to Dr. Armstrong's description; he would like to know if portions of the bone were removed and afterwards replaced in small fragments, and which, in spite of the septic condition present, retained their vitality and developed. With regard to the point Dr. Armstrong wished discussed, he thought it was very hard to lay down any rule in such cases; it was a question to be decided upon at the moment, and under the circumstances he felt that he should have acted as Dr. Armstrong had done. There being no localizing symptoms within the membranes pointing to any particular area, and considering the danger of introducing sepsis, he could not see that any other course lay open to the careful surgeon.

Dr. ARMSTRONG, in answer to Dr. Bell's question regarding the replacing of the pieces of bone, after mentioning the dimensions of the whole area of removed bone, said that several small pieces not more than half an inch square were replaced, and as he had seen nothing of them since he presumed they were still in the wound. The wound, however, he did not believe was infected until later, which might remove that obstacle to union taking place. At any rate the fragments were there as far as one could feel and appeared to be good firm bone.

Seborrhœa.

Dr. J. M. JACK read a paper on this subject, which will appear in a future number.

Dr. SHEPHERD said that he must acknowledge himself disappointed with the paper; he expected something more modern. This was seborrhœa and its treatment of twenty years ago which Dr. Jack had given. The latter had said nothing of the micro-organisms which caused this disease, nor of seborrhœa congestiva, nor of Unna's theories with regard to the sudoriparous glands, all of which he had been in hopes of hearing and getting fresh light upon. The most important thing for the general practitioner to remember was that seborrhœa was apt to run into eczema, and it was sometimes hard to draw the line between the two conditions. With regard to the general treatment, it was not hard to treat, the diagnosis being once made. In the first place seborrhœa ought never to be diagnosed from the scalp eruption alone, the body ought also to be stripped and examined, and often what first appeared a seborrhœa would turn out to be a psoriasis. As to the treatment, he thought the germicidal treatment by far the best, and he believed that micro-organisms were always at the bottom of the trouble. Cases occurred in the robust as well as in the weak; common dandruff was seborrhœa. Seborrhœa often spread from the head all over the body and could be treated only by germicidal remedies. He himself preferred mercurial treatment to all others. The remarkable results

obtained by treating seborrhœa of the scalp with the oleates of mercury, especially where it had gone on to the congestival stage, had often been observed by his students, past and present, at the General Hospital clinics.

Dr. G. GORDON CAMPBELL believed that general treatment, in most forms of skin disease, was only needed when the general health needed it. Dr. Campbell, in Dr. Shepherd's absence last summer, had conducted his skin clinic, and as he had seen so much treatment by mercurial ointments in seborrhœa, he thought it a good opportunity to try other forms. In almost every case he found he had to fall back on the mercurial, and had to use it strong. The oleate of mercury which he was accustomed to use 1 to 8 or 1 to 20. Dr. Shepherd prescribed 3 to 1. He certainly, therefore, agreed with Dr. Shepherd that there was nothing like mercury for getting a speedy effect.

A New Form of Ether Inhaler.

Dr. JAMES BELL exhibited an aluminium cone, which is fully described in the May number.

Dr. G. G. CAMPBELL said that the first point made by Dr. Bell in favour of the inhaler described by him, and one on which he laid great stress, as being an advantage lacking in other inhalers, was that it could be sterilised. Two years before Dudley Buxton, of London, had perfected a Clover's inhaler, the different parts of which could be taken part and sterilized. Dr. Bell's next statement was that ether was not a supporter of respiration. It was a very important point to remember that it was possible to asphyxiate with ether. Asphyxia could be produced in two different ways: (1.) By replacing the oxygen of the air with an irrespirable gas, such as nitrogen or ether, and then it was simply want of æeration of the blood that produced the condition. (2.) By replacing it with a poisonous as well as irrespirable gas, such as chlorine, which would then add to the effects of the withdrawal of air, the effects of the poison. As far as he could understand, the great argument of the opponents of Clover's inhaler, apart from

the question of uncleanness, was, that it was very dangerous to rebreathe the same air, as, besides being deprived of its oxygen, it was filled with poisonous materials from the lungs of the patient. Dr. Campbell thought he could show that the whole of the possible degree of asphyxia, which it was claimed was produced, must be due to withholding pure air and not to any poisonous materials present. Of the whole amount of air in the lungs, one-fifth was changed at each breath. This fifth was the vitated air often referred to as being so injurious to rebreathe. That it differed in any respect from the air left behind it at the close of expiration, it was absurd to contend. If a person was breathing at the rate of twenty to the minute, sufficient pure air was taken into the chest to fill it only four times a minute, ($20 \div \frac{1}{5} = 4$) and the individual was thus continually breathing the bad or vitiated air diluted with one-fifth of pure air, or, in other words, a mixture containing four-fifths of air loaded with impurities, and one-fifth of pure air; and yet was not suffering from poisoning. Furthermore, if the person did not get the one-fifth of pure air every breath, or, to put it in another way, four chest-fulls a minute, asphyxia of greater or less degree according to the extent that pure air was withheld, would be produced. What Dr. Campbell wished to make clear was this; that asphyxia produced in this way was not the result of breathing a poisonous gas, but was the result of not getting sufficient fresh air for proper aëration of the blood. Suppose the person to be breathing forty to the minute, he would get as much good air if only every second breath was pure air, as he would still be getting the four-chest fulls every minute; and if he breathed or rebreathed the already respired air in the other twenty breaths, and no further demand was made upon him, the conditions under the two cases were the same. The fear that seemed to be constantly present with some men of allowing their patients to breathe any of this so-called poisonous gas, might be in some measure removed, if they remembered that the air in their own lungs contained constantly four-

fifths of it. By giving, as he did, two breaths of pure air to every one from the bag in using Clover's inhaler, he, Dr. Campbell, thought it could easily be seen that the patient was getting as much good air a minute as in quiet breathing, when it was remembered that the rate of breathing was twice as rapid as normal.

Dr. Campbell considered the aluminium an improvement on the ordinary cone for the reasons stated by Dr. Bell, and that, in the absence of better apparatus, ether could be given well by a cone, provided it was administered slowly at first and the amount gradually increased. Asphyxia, however, could be produced by replacing too much of the air breathed by ether vapour as well as by respired air.

Dr. F. W. CAMPBELL had had an opportunity of examining this inhaler a few weeks before, through the courtesy of the manufacturer. It seemed to him a very admirable one. His experience with anæsthetics was extensive. There was no doubt that the old-fashioned cone was an abominable thing to use from the point of view of cleanliness, and this one seemed a very great improvement. It had, however, one disadvantage; it did not pack easily in the surgical bag. However, it struck him that in using Dr. Bell's arrangement of packing with cotton that it would hold very little ether. It was in this respect much better than the sponge, which, when it became saturated, allowed the ether to overflow.

Dr. KENNETH CAMERON considered the aluminium cone a decided improvement on the old red flannel one; but he had to protest against Dr. Bell's strictures on Clover's inhaler. The great objection raised was that the patient was re-breathing his own poisonous exhalations, but he felt that the ether vapour disinfected this vitiated air. Having had experience with both forms, he considered that the Clover inhaler gave the greater satisfaction, when properly used, for with it the patient could be more rapidly anæsthetized, the amount given could be regulated, and the after effects in his experience were not severe, while with the cone the patient breathed air, either saturated with ether or

containing no ether at all. It was his practice always to stay with the patient until there was some sign of returning consciousness, such as opening the eyes, or putting out the tongue when told to do so, and this period varied from five to twenty minutes, never longer. He therefore felt that when the anæsthetist once fully understood the use of Clover's, he would not willingly give it up in favour of any other form of inhaler.

Dr. GURD hardly thought it possible that anyone who had used Clover's inhaler many times could give it up. With it the amount of ether could so easily be regulated. Dr. Bell's objections could be done away with and the advantages of Clover's inhaler yet retained by simply not using the bag. He maintained that almost any individual could be anæsthetized and any operation carried through from beginning to end without using the bag. In the course of nearly all major operations there were stages when very little ether was needed; if deeper anæsthesia was required quickly the bag was useful though not essential.

Dr. ALLOWAY protested against the statement that Clover's inhaler was dangerous. Ether, like many other drugs, was dangerous if used by stupid or unskilled persons, quite independent of the instrument employed in its administration. He had had much experience with both the Clover inhaler and the cone; from the former he had never seen any danger resulting, although such had often been the case with other instruments. His experience corroborated the assertions of Dr. Gurd, and he was certainly in favour of using the inhaler without the bag. At the same time, when confident of the ability of the anæsthetist, even with the use of the bag he had no anxiety. Some patients seemed to be brought under the influence quicker when the bag was used. Allis' inhaler was one of the cleanest instruments used. It had a roller laced on metal bars and which could be replaced, leaving only metal to cleanse. As regarded the necessity of making the Clover's inhaler more cleansable, this was simply a matter of

technique ; and there now was one coming out which could be taken to pieces and the parts sterilized.

Dr. SHEPHERD would like to hear something more definite about the cases referred to by Dr. Bell, where the Clover inhaler proved so dangerous. He had certainly seen many instances where the patient seemed in danger from the use of the cone, but never any when Clover's inhaler was used by a skilled anæsthetizer.

Dr. BELL said he had anticipated some discussion on his paper, and the result had more than realised his anticipations. First in reply to Dr. Gordon Campbell's arguments, which he regarded as pure sophistry ; Dr. Campbell said a new Clover's inhaler was coming out, which could be sterilized as completely as any rubber goods could possibly be. That was just the point ; ordinary rubber goods could not be properly sterilized. They could not be rendered aseptic by heat without destruction, and he knew of no chemical substance by which this could be accomplished. To begin with, there were one or two fallacies with regard to the Clover inhaler. If you did not use the bag, you certainly had an instrument on the same principle as the cone. In the cone, the liquid ether was poured over a large surface, and vapourised more rapidly ; in the other case, it remained in a metallic reservoir and through that reservoir the air was inspired. With regard to the indicator, it indicated nothing more than that a certain amount of air was drawn through a larger or smaller orifice into the ether chamber—the whole of the semi-circular orifice, or the half of it, or the quarter of it. It did not take into account the air received from other sources. If the space was one-half open, the patient had to inspire more vigorously to get the necessary air. In using the instrument without the bag the principle was absolutely the same as with the cone, with the exception that the ether remained in liquid form, over which the air passed, whereas in the cone it was absorbed by cotton and a large amount was wasted. With regard to Dr. Campbell's mathematical problem, without going into the physiology of

respiration, the fact remained that whether there was $\frac{1}{5}$ or $\frac{1}{50}$ of pure air in each inspiration, it was these inspirations that sustained life; and if we could only get half the amount of air necessary to sustain life we were badly off. This was a principle recognized in the construction of all public buildings, that there must be a certain amount of air space for each individual. So in the operating room, a certain amount of air was required to sustain the patient for a certain interval, and if he was allowed that amount in twice, thrice or four times that interval, it was equivalent to closing him in a room (which had a capacity for one man only), with two, three or four others. He did not speak of vitiated air, he spoke of it as re-respiring the same air—breathing carbonic dioxide, and noxious exhalations, that was, breathing impure air and preventing the influx of oxygen from the outer air. As regards the patient breathing twice as rapidly, that was another fallacy. He did not believe a patient breathed twice as rapidly, unless it was in the same sense as a pneumonia patient breathes twice as rapidly as in health—simply because he was being asphyxiated.

In regard to the practical example of the bad effect of the Clover inhaler, the colour of the patient often showed the results of that apparatus, and the operation had frequently to be stopped for the time being. It was perfectly clear to him that patients, taken one after another, respired ether through the cone, apart from such accidents as spasm of the glottis, &c., with less danger, and never developed that dark livid colour frequently seen when the Clover's inhaler was used.

In answer to Dr. F. W. Campbell's question, as much cotton-wool can be put in as required. The cone passed around was a small one, and contained about the average amount of cotton.

In reply to Dr. Alloway, who spoke of an accident which had occurred recently in New York, he did not know the particulars of that accident, but he knew of

many accidents occurring outside of New York through the use of the Clover inhaler—no fatal ones probably, but many times he himself had been very anxious about patients during the administration of ether, and most of them when the Clover's inhaler was used. Dr. Shepherd wanted some definite cases mentioned; well it was within Dr. Shepherd's recollection that the Clover inhaler was introduced into the General Hospital, used for several years and then discarded, and did not re-appear for years. The reason was this, a very nearly fatal accident occurred, and when it was investigated it was discovered that the anaesthetist forgot to put ether into the reservoir. Now it is absolutely impossible for any man to administer ether with a cone, and make a serious mistake, unless by giving too much, and this can be done with any instrument. Everybody knew that ether might be given to such an extent as to paralyse the respiratory centre and kill the patient without any untoward accident having occurred in any other way. That was the only possible way harm could be done by the cone; whereas with the Clover inhaler he might forget to put in ether, or let it run out, let it spill out, and for these reasons the relative danger of the two methods of giving ether was, as Dr. Alloway put it a few moments ago, a matter depending largely upon the ability of the anaesthetist, the Clover inhaler being especially dangerous in unskilled or careless hands. In regard to his remarks on vomiting, Dr. Bell referred to the vomiting following the anaesthesia, and in his experience he found vomiting far more frequent after the use of the Clover inhaler: With regard to Allis' inhaler he had nothing to say, except that it was not clean; it was the rubber part that he objected to. An essential part of it was composed of rubber, and this could not be cleaned, much less made sterile, as sterilization is understood in a surgical sense. In dealing with open wounds it was not only very important to have clean instruments, but in many serious operations about the brain, head, face, neck and upper extremity, it was very important to have an inhaler which

could be made clean and sterile, and put into the hands of a man who had already sterilized his hands, clothing, etc. He was sure there was no surgeon present who had not felt the inconvenience of this rubber bag flopping about the head and neck while these parts were being operated upon.

Dr. SHEPHERD said that in the General Hospital case referred to, Dr. Bell, the anæsthetist, should have been discarded and not the inhaler.

Dr. G. GORDON CAMPBELL explained that all the rubber portions of Clover's inhaler could be boiled without injury, provided that they were put on in cold water and not allowed to touch the bottom of the boiler. He always sterilized his own in this way.

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IDENTIFICATION OF SPECIES OF BACTERIA IN WATER.

This subject was brought up at the meeting of the American Public Health Association, held in Montreal, September 25th, 1894.

The Committee on the "Pollution of Water Supplies" submitted a proposition that the bacteriologists of America should work together to evolve a scheme for the adoption of standard culture media and the use of them along definite systematic lines.

This proposition, which came from McGill University, was received with considerable favour, and a sub-committee was appointed by the Association and a grant made for preliminary expenses.

The committee consisted of the following four members: C. A. Smart, M.D., Surgeon and Major U.S. Army, Chairman of the Committee upon Pollution of Water Supplies, A.P.H.A.; G. W. Fuller, ScB., Biologist in charge of the Lawrence Experimental Station, Massachusetts State Board of Health; Wyatt G. Johnston, M.D., Bacteriologist to the Board of Health of the Province of Quebec; J. George Adami, M.A., M.D., Professor of Pathology, McGill University, Montreal. They immediately got to work, commencing by sending a circular letter to all the laboratories on the Continent to obtain the opinions of bacteriologists on the preparation and mode of employment of culture

media, the variability of species and the identification of bacteria.

The replies were numerous, and many and diverse opinions were expressed. The committee, after tabulating these replies, sent out another letter reviewing in general terms the information received and setting forth a number of points on which discussion was invited. It was also proposed to hold a meeting in New York, and the date June 21st was decided upon as being the most suitable.

The whole project from the start has received the full support of the Bacteriological departments of many State and Provincial and Municipal Boards of Health, as well as of the principal Universities of the United States and Canada.

The meeting will be a representative convention of bacteriologists and we expect practical results from this, the first assembly of its kind.

Dr. Adami, McGill University, is acting as the secretary of the Committee, and from him copies of the letters and all necessary information can be obtained.

CANADIAN MEDICAL ASSOCIATION.

This is the time of year when the busy doctor allows his thoughts to wander away from the dusty city towards green fields and babbling brooks and he begins to plan for his summer holiday. While mapping out where he will go, we venture to suggest that he arrange to spend a few days in Kingston, Ont., where on August 28th, 29th and 30th will be held the annual meeting of the Canadian Medical Association. By so doing he will add to the pleasure of his trip, to say nothing of the profit to be gained, for this promises to be one of the largest and best conventions ever held in Canada.

Dr. James Stewart, of Montreal, will deliver the address in Medicine, and Mr. J. H. Cameron, of Toronto, the address in Surgery. It is intended to have a skin clinic, at which several interesting cases will be presented and these will

be discussed by prominent dermatologists. There will probably be other clinics as well.

Another pleasure partly expected is that of having the first President of the Association, Sir Charles Tupper, at the meeting.

Dr. F. N. G. Starr, Toronto, Secretary of the Association, will be pleased to give any information regarding the meeting.

THE PHYSIOLOGIST LUDWIG.

At a time long subsequent to the date at which this great physiologist took his degree and began to be a power in German medical education, physiology was regarded by the great multitude of undergraduates, and even graduates in medicine, as one of the "primaries" that a man must "get through," but which in reality only little concerned him who was engaged in the actual practice of medicine. Then, as now, anyone could understand the advantages of attendance at hospital clinics. It was, however, for the few to see that the foundations of scientific medicine were laid not in the hospital, but in the laboratory—in a true understanding of scientific biology; and indeed what there was of medicine as a science came from those chiefly who laboured quietly in the laboratory or who observed in the wider domain of nature.

To the great mass of medical men of the present day even the name of Ludwig may not be familiar. But one of the most hopeful signs of the times is the fact that everywhere now a certain not inconsiderable number of young medical men become investigators of problems which are primarily physiological ones. It may be that yet for one that can see the bearing of physiology on practical medicine, there are ten or a score or a hundred who can perceive that a sound pathology is essential to scientific medicine. But what is sound pathology but a combination of anatomy, physiology, chemistry, and biology applied to man finally, though primarily derived from a study of the lower animals.

Ludwig, born in 1816, graduating as doctor of medicine in 1839, and very soon after entering on that extended career of physiological teaching and investigation which long since gave him a world-wide reputation, was essentially a pioneer in physiology as an experimental science. For when this enthusiastic investigator and inspiring teacher entered on his life-work, physiology was in a very crude condition, not only wanting to a great extent in a foundation scientifically laid in experiment and accurate observation, but hampered by theories without basis in fact, it is true, but nevertheless universally accepted. Fortunately Ludwig was a believer in that sort of physiology which is founded on direct experiments of a physical and chemical character. These views he may have carried too far in his opposition to the vitalistic theories that were prevalent, but the latter, at least in their crude form, were driven from the field.

One of his own pupils, Heidenham, with a somewhat more penetrating ken, may have been needed to prevent Ludwig's school from going too far with mechanical explanations; but the fact remains that if Ludwig is not the founder of modern physiology, he has had more influence on its development than any other man.

Comparatively few of the leading physiologists in Great Britain or America, not to mention Germany or other continental countries, but have been either pupils of Ludwig or his grand-children, so to speak, in physiology. Ludwig certainly founded a school of physiology whose influence was dominant till very recently everywhere.

Research after research made in his laboratory appeared in numerous periodicals, including Ludwig's *Arbeiten*, the special medium for such publication. Leipzig became the Mecca of the physiologist. The Cambridge school was in a sense a sort of Leipzig colony, while Prof. Bowditch in Harvard was Ludwig's most distinguished pupil in America.

Ludwig's principal bias and the facts just mentioned,

together with his great personal influence over his pupils, explains in no small degree the status of physiology to-day.

Instruments found in all physiological laboratories bear the great investigator's name. These may be replaced by other and better ones in time, but Ludwig's influence on physiology and on its leading teachers and workers will be lasting.

He secured the confidence and regard of young men by his kindly sympathy, his cheerful aid and that inspiration which it is given to but few to be able to impart.

Till within recent years he was an investigator as well as a teacher, while to the last he was the inspiring head of a famous school of physiological research. He died at the ripe age of 79 years.

He was a man of great candour and simplicity of nature. The writer recalls with perfect distinctness a conversation of over ten years ago in which these traits were admirably shown.

It is difficult to estimate the value of such a man to medicine. He was the originator of a large part of what is best known in connection especially with the circulation, though of course his teachings required considerable modification of late years. A long, distinguished and worthy career has come to a close; an able and noble man has passed away. The world owes him much and the physician and the scientist should hold his memory dear.

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