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A FEW PRACTICAL NOTES ON THE ESTABLISHMENT OF ANASTOMOSIS BETWEEN THE GALL BLADDER AND INTESTINES FOR OBSTRUCTION OF THE COMMON DUCT, WITH THE RELATION OF A CASE OF THE OBSTRUCTION OF THE COMMON DUCT BY A SMALL GROWTH.*

BY JAMES F. W. ROSS, M.D. TOR.,

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READING with a great deal of interest a paper of my friend, Dr. J. McFadden Gaston, of Atlanta, Georgia, on "The practicability of establishing an artificial fistulous opening in the human subject between the gall bladder and the duodenum," I determined that as soon as an opportunity presented itself I would carry out the procedures of the operation as outlined by him in that article.

Having some time previously operated on a case of gallstone impacted in the cystic duct, I concluded that cases would be met with in which the operation of incising the duct and removing the stone would not be practicable. Some time after this a patient from the country consulted me

* Read before the American Association of Obstetricians and Gynecologists in Detroit.

regarding a lump in the right hypochondriac region. This growth was accompanied by profound cholemia, together with a dilated condition of the stomach. From the patient's age, between seventy and seventy-five, and her cachectic appearance, together with the pain present in the tumor, the size of the tumor, with the irregularity of its surface and the dilatation of the stomach, I concluded that the case was, in all probability, one of malignant disease affecting the pyloric end of the stomach, compressing the common bile duct, and thus producing the symptoms present. I was supported in this view by another practitioner. We advised against any operative procedure; the patient looked very frail, and as if on the verge of the grave. I had not forgotten the lesson taught by the cases of others simulating malignant disease; but I concluded that in this case, at least, I had to do with malignant growth. The time passed by, and I heard nothing more of the patient. One day a gentleman appeared at my office, and in the course of conversation began making enquiries regarding the case of his mother. After we had gone over the case together, he drew out from his pocket a large pill-box, from which he removed a very large gall-stone. This, he told me, was the cancerous disease found at the *post-mortem* examination upon his mother. He seemed to have the idea that the abdomen of women of seventy or seventy-five, in the last stages of cholemia, with distended gall duct, could be opened and a stone removed from the midst of dense adhesions without the least danger. Had I known that the enlargement was due to the impaction of a gallstone, I would certainly have refused to operate. However, this was a lesson not to be forgotten and one to be treasured.

However, on the 14th of December, 1892, my friend, Dr. Cotton, of Toronto, brought to my office a young woman twenty-six years of age, very yellow in color, and suffering from an intense jaundice; her tongue was fairly clean, her urine, she said, was dark-colored, while her stools were pale and clay-like. She suffered considerably from heartburn; she had very little pain. During the last winter she had a severe attack of pain at the pit of the stomach; this lasted for one day. The pain was so severe at the time that for some days the edges of the ribs felt sore. Three months ago jaundice came on; it gradually deepened. She suffered from pain behind the shoulder and from vomiting. The pain was very nearly as severe as it had been the year before. For the last two months the motions had been light in color; the urine stained the clothing yellow; yellowness of the skin came on; she had some bleeding at the nose, but she thought not more than she had been accustomed to. She had been married six years, and had one child.

On examination, a hard nodule could be felt about one inch and a half below the tip of the ensiform cartilage, a little to the right of the

median line. Further toward the loin a movable, smooth, tense fluctuating swelling could be readily made out, corresponding in outline to a distended gall bladder. The nodule referred to was hard, and a cord could be felt running from it toward the gall bladder, and this cord proved to be the common duct. From the symptoms of the case, together with the previous attack of colic one year before, I diagnosed obstruction of the common duct by an impacted gallstone. The liver was enlarged, and extended about an inch below the free border of the ribs on the right side.

As I was going to the meeting of the Clinical Society that evening, Dr. Cotton and I decided to exhibit the case. She consented, and during the evening she was presented to the society. The lump was felt by several members, and the gall bladder itself was readily made out. I mentioned the fact that I had already been in error in the case previously related, but thought that this time there could be no doubt about the diagnosis. Operation was decided on, and on the 19th of December, 1892, assisted by my friend, Dr. A. H. Wright, I opened the abdomen along the margin of the ribs on the right side. Bleeding from the wound was rather troublesome; the liver was found much enlarged; the gall bladder very much distended; and the hard mass previously felt was found to be evidently in the common duct. On closer manipulation this mass did not feel hard enough for a stone; it was smooth and rounded; but for all that I determined to make the diagnosis by means of a needle. The needle passed down into the mass, did not strike any hard tissue, and its withdrawal was accompanied by a discharge of blood that seemed to be more profuse than would follow puncture of a gall duct with an impacted stone. I now decided that, notwithstanding the small size and deceptive appearance of the lump, it must be a growth, but I feared that subsequent *post-mortem* examination might even yet prove that I was mistaken.

I now opened the gall bladder, emptied it of very dark treacly colored bile, explored its interior, fastened it to the abdominal wall, and washed it out. Fresh bile began at once to flow through the gall bladder. The common duct was distended to the thickness of a man's thumb, and the bile ducts and the liver were found to be distended in corresponding proportion. Had the obstruction in the common duct been due to the impaction of a stone, I doubt very much the advisability of incision of the duct for its removal under such circumstances. I now decided to drain the gall bladder, and by permitting of the external flow of bile to relieve the jaundice. The wound was closed after all hemorrhage had been checked. A drainage tube was fastened in the opening in the gall bladder, and the end of it was carried some distance beyond the dressings. During the next few hours the pads over the drainage tube were soaked with bile. The patient's nose bled and blood was spit up; this showed the hemorrhagic tendency.

About twenty-four hours after the operation secondary hemorrhage from the incision set in. Pressure was applied, and the sutures were tightened by means of forceps; perchloride of iron was used, but the hemorrhage still continued. Forty-eight hours after the operation the patient was again placed on the table, chloroform was administered, and the wound was reopened throughout its entire extent, except at the point of insertion of the gall bladder. The hemorrhage was now found to be a general oozing from the cut surface of the right rectus muscle, and to stop this it was necessary to pass two sling sutures around the muscle above and below the incision through it. These were tightened and the ends of the muscle were held against the abdominal wall, and in this way the bleeding was checked. The patient then made an uninterrupted recovery; the wound healed, strange to say, by first intention; the fistulous opening in the gall bladder contracted down until it would barely admit a probe. The epistaxis continued from time to time, but did not give rise to any alarm. The patient gradually changed color, and soon all evidences of jaundice had completely disappeared. On two or three occasions some blood was found mixed with the bile. The urine became a lighter color.

During the performance of the second operation for the control of the hemorrhage, I had a good opportunity of examining the manner in which nature walls off the point of invasion of the peritoneum from without, and protects the system from the introduction of foreign matter. The intestines were adherent around the opening, and the liver was covered with adhesive lymph. The patient was soon able to walk around, but complained bitterly of the inconvenience of the bile-stained pads. Had it not been for this fact, I should have refused to do anything further. I advised her to go home for a couple of months, and to return at the end of that time. This she refused to do, and begged of me to perform some further operation for the closing of the fistulous opening.

As Dr. Gaston's operation had been done by himself successfully on dogs, I decided to produce, if possible, an anastomotic opening between the duodenum and the gall bladder by the means recommended by him, namely, the use of an elastic ligature. A piece of strong elastic was procured that would thread a small needle. On the 1st of February, 1893, the abdomen was opened just below the line of the old incision. The right rectus muscle was divided. The parts were dissected off with care, and it was found that the general peritoneal cavity had been shut off from the site of the previous operation by very firm adhesions. It would have been impossible to reach the growth with any degree of safety through these adhesions, as the liver had diminished in size, and the growth, together with the common duct, had been drawn up under the ribs. The duodenum was found lying close to the gall bladder, and through its wall

the needle with the elastic ligature was passed, while the thread was held on the stretch by my assistant. The needle was then passed through the wall of the gall bladder. About half an inch of duodenal and gall-bladder wall was now included in the loops thus made. The stitch was drawn tight and firmly tied, the ends were cut off short, and the abdomen was again closed with silkworm gut sutures.

The fæces were watched for bile, but, much to my disappointment, no bile appeared. One day my assistant thought he obtained the reaction for bile with nitric acid, and the nurse thought the fæces looked tinged, but only to a very slight extent. For a time the discharge of bile now seemed to diminish. This diminution may, however, have been more apparent than real. The nurses noted on the history paper frequently, "Pads changed, less discharge." The wound healed by first intention.

On the sixteenth day after the operation, as the patient was becoming disappointed, I passed a probe into the gall bladder through the fistulous opening, and found what felt to me like a portion of the elastic ligature. I passed the probe into the wall of the gall bladder, and found that it readily perforated the wall, and went through, apparently, into the duodenum. The probe was fastened in this position, and left there for two or three days, but still I could see no greater evidence of the discharge of bile by the bowel than before. I therefore dilated the fistulous opening into the gall bladder, passed in my little finger, and felt the opening through the wall, but could not feel any elastic ligature.

As the patient's husband had become seriously ill, she now left the hospital. I was annoyed at this, because with the dilated opening into the gall bladder, and thus having a ready access to its interior, I felt sure that I could now complete the formation of the fistulous opening without difficulty. The patient did not return for two weeks. After her return blood was noticed mingled with the discharge of bile. This gradually increased. Pressure on the gall bladder failed to arrest the hemorrhage. It oozed out drop by drop from the opening into the gall bladder. Thinking that it might, perhaps, be due to hemorrhage from the edge of the gall bladder, I touched this with the actual cautery without producing any perceptible effect. Though the probe passed through the gall-bladder wall, no fæcal matter and no intestinal flatus came through. Thinking that, perhaps, the hemorrhage came from the gall-bladder wall, I injected styptics, beginning with a saturated solution of alum, and ending with a solution of the perchloride of iron and water. These had no effect, excepting that they produced coagulation of the blood. The patient complained that the solutions produced pain in the shoulder similar to that experienced before the gall bladder was opened. As the bleeding still continued, I determined, if possible, to find out the cause. I felt

afraid that the elastic ligature had lacerated into some small vessel. I therefore re-dilated the gall bladder and explored its interior, but concluded that the blood was coming from the direction of the cystic duct. I now packed the gall bladder with iodoform gauze. This checked the hemorrhage, to a certain extent, for a time, but it soon oozed through as rapidly as ever; and the patient complained of such pain in the shoulder from this distention of the gall bladder by the packing that I was forced to remove it. The patient died on the 9th of March from the effects of the continuous hemorrhage.

Post-mortem examination report made by Dr. N. A. Powell, one of the pathologists of the Toronto General Hospital.

Abdomen opened in the middle line, and the skin reflected so as to expose the site of the operation at the free border of the ribs on the right side. A clot three inches long by one and a half inches wide, conical in shape, found occupying an opening through the abdominal wall. On tracing this down it was found situated in the gall bladder, the latter being attached to the skin by firm adhesions. The clot was firm, such as results from the action of the perchloride of iron on the blood when applied as a styptic. A cavity sufficient to hold two and one-half ounces of fluid was found when the clot was removed. On inspecting the interior of the gall bladder, an opening was found through the wall among dense adhesions in the peritoneal cavity. This opening was large enough to admit a No. 20 French catheter, and lay to the front and to the right of the common bile duct, with the duodenum lying immediately beneath it adherent to the gall bladder and abdominal wall. This had evidently been made by some instrument some time before death. Situated behind and to the left of the duodenum and common bile duct, pressing upon the bile duct in such a manner as to easily occlude it, was found a growth as large as a walnut, firm, elastic, and smooth. No trace of the elastic ligature that was said to have been used for the purpose of producing anastomosis could be found. The liver, on being divided, bled very freely. There were no evidences of any general peritonitis, and the seat of the operation had practically become extra-peritoneal by the dense adhesions that had formed around the opening. The stomach contained a quantity of dark fluid. The only trace of any opening made by the elastic ligature was the sinus above mentioned. The duodenum, where stitched, must have healed as the elastic ligature worked itself away toward the interior of the gall bladder. The duodenum was firmly adherent to the gall bladder at the site of the elastic stitch. The gall bladder was pervious to a hard substance such as a probe, but would not permit of the passage of the bile owing to the pressure of the growth.

The hemorrhage evidently came from the liver, and not from the site of the insertion of the elastic ligature. Two or three ounces of blood were discharged from the cut surface of the liver.

On microscopical examination, the tumor was found to be a glandular epithelioma.

The loss was slow but sure. As shown by the *post-mortem* examination, it would have been impossible to check it.

I have now related this case at some considerable length, hoping that it may produce some discussion that will be of benefit to us all. There are several questions that arise in the mind of the surgeon, such as: First, what is the best means of producing anastomosis between the gall bladder and the intestine? Secondly, is it better to open and drain the gall bladder, and to allow the patient to live out his or her life with a permanent fistula, or to attempt to produce an anastomosis in such a case as the present one; that is, in a case in which we have to deal with an obstruction of the common duct due to a malignant growth? Thirdly, in obstruction of the common duct by the impaction of gallstone of large dimensions, with the patient profoundly cholemic, is it better to leave the stone *in situ*, to open and drain the gall bladder, with the intention of producing a subsequent anastomosis, between the gall bladder and intestine, or to incise the duct and remove the stone at the first operation? As to the methods of producing anastomosis, I will in future resort to direct incision and direct suture. The elastic ligature in this case did not fulfil my expectations. The peritoneal cavity at any secondary operation is so shut off by adhesions that a slight escape of bile or fæces after the direct incision of the duodenum or gall bladder cannot be of any serious moment if proper drainage through the external opening is provided. I thought of various devices for carrying out this anastomosis. I procured plates after the model of the intestinal anastomosis plates and thought of incising the bowel, passing in a plate and then passing the ligatures through the bowel and gall bladder, and of bringing them out of the original opening into the gall bladder and holding them in place by means of a pair of artery forceps passed into the gall bladder through this external opening until firm adhesions had formed. I then intended to incise the gall-bladder wall over the opening in the intestinal anastomosis plate that could be readily felt with the little finger, passed into the gall bladder. On more mature consideration, I concluded that hemorrhage might readily result from such an incision, and that such a hemorrhage might be very difficult to control. It is better to have the hemorrhage occur as the consequence of incision at the time when it can be readily controlled.

In reply to the second question, I believe that it would be better to open the gall bladder, establish a fistulous opening and allow the bile free exit, and to do nothing more in these cases of malignant growth.

In answer to the third question, I feel sure that with a patient in a conditon in which this patient was originally found, with jaundice, enlarged

liver, and enormously distended gall ducts, it would be better to drain the gall bladder for a time before carrying out any further procedures. In this way the gall ducts become diminished in size, and there is much less danger of the subsequent extravasation of bile into the peritoneal cavity. Owing to the free egress of the bile through the cystic duct and gall bladder, no tension will be put upon the sutures applied to the incision required in the common duct. If an anastomosis can be readily made at some subsequent period, the presence of a gallstone is not likely to be a very serious inconvenience.

I would remark that, according to my experience, wounds in bile-laden tissue heal readily, and with very little evidence of inflammatory action. A great tendency to hemorrhage is, however, to be noted.

Quoting from Gaston, I find that he gives credit to Neussbaum for first suggesting operation for the relief of occlusion of the common bile duct by conveying the bile into the intestinal canal through an artificial opening between the gall bladder and intestine, and he gives credit for having first accomplished these results upon the human being to Von Winiwater. Von Winiwater subjected a patient to six different operations for the formation of a fistula between the gall bladder and the colon. So that I need not feel badly over the result in my own case. As far as I know, my own case is the second on record in which the elastic ligature has been used for the purpose of establishing a cholecystenterostomy on the human subject, and I am sorry that it failed to establish the fistula.

Gaston gives a very interesting report of the progress of the operation of cholecystenterostomy. In 1887 Mownastyrski united the gall bladder with the duodenum by a direct suture, excision of a portion of both jejunum and gall bladder by puncture, and union of the edges with catgut. The patient survived, but died subsequently of the progress of the cancer that was found *post mortem* at the head of the pancreas.

Keppler's operation was done in July, 1887. The gall bladder and the ileum were united by direct suture. The patient progressed favorably for a time, but died fourteen months after the operation.

Fritsche, in the year following, established a fistulous opening from the gall bladder and the jejunum. At the *post-mortem* examination a carcinoma of the size of a wulnut was found at the mouth of the common bile duct. I may here state that this case was identical with my own.

Gaston goes on to say that Socin and Bardenheur each attached the gall bladder to a loop of small intestine. The case of the latter died in the fourth week, and no fistula was found. It is said the operation was done with the elastic ligature. This latter is a point of considerable value, as the experience of Bardenheur coincides with mine in the non-establishment of the fistulous opening, though the patient lived long enough to have permitted of the formation of such a fistula.

Robson operated in 1889 on a patient who had been previously subjected to cholecystotomy. The gall bladder and colon were subsequently incised and united, and a drainage tube inserted in the wound. After one day bile came out of the drainage tube mixed with fæces. The appearance of bile in the fæces is reported to have subsequently been noted.

In 1889 Terrier operated for relief of occlusion of the common duct. A stone was found in the common duct that could not be removed, the gall bladder was attached to the jejunum, a drainage tube passed through from the outside of the gall bladder into the duodenum, and the fundus of the gall bladder was sutured to the lower angle of the external incision. The drainage tube passed off with the evacuations nine days after the operation.

Courvoisier next operated, and united the gall bladder to the colon. The patient did well.

There is another case reported operated on by Helferich. An opening was established between the duodenum and the gall bladder. The method was by direct suturing. Chavasse, of Birmingham, used Senn's bone plates, and made a communication between the gall bladder and the colon. At first bile and fæcal matter were discharged through the abdominal wound, but the patient ultimately improved. Korte also united the gall bladder with the duodenum.

At the time of Gaston's report in the *Medical News*, June 11th, 1892, there had been seven cases operated upon with one death, but the death was not attributable to the operation. Among these one case was operated upon with the elastic ligature, and was not successful. I now have to add another.

My time has been so occupied that I have been unable to search through the literature of the past year for any other cases that may have been reported. Taking all these facts into consideration, there can be no doubt that the operation of cholecystenterosotomy has come to stay; that it is an important operation that is likely to be performed more frequently in the future than in the past; that it is virtually attended with a very low mortality; and that it has been successful in a large enough number of cases to prove that the operation can be of benefit to men, as well as to the lower animals.

Courvoisier gives the following indications for the operation: First, when biliary fistulæ are difficult of removal, whether they be traumatic, ulcerative, or operative; secondly, any permanent obstruction of the common bile duct, except in cases of gallstones; and, thirdly, in traumatic and ulcerative communications between the common duct and the abdominal wall. In the three questions recited in the early part of this paper, with the answers given, I have expressed my views on the subject.

No.	Name of Operator.	Date.	Disease for which done.	Immediate or secondary operation.	Method by which done.	Result.	Portion of intestine united.	Leakage.
1	Von Winiwater.	1880.	Obstruction of the common duct.	Six attempts made.	Direct suture.	Fistula established.	Small intestine.	
2	Mownastyriski.	June 14, 1887.	Carcinoma of the head of the pancreas.	Immediate.	Direct suture.	Fistula established.	Jejunum.	
3	Kepeller.	July 6, 1887.		Immediate.	Wolfler's suture.	Fistula established.	Ileum.	
4	Fritsche.	1888.	Carcinoma at the mouth of the bile duct.	Immediate.	Direct suture.	Fistula established.	Jejunum.	
5	Socin.					Fistula established	Small intestine.	
6	Bardenheur.				Elastic ligature.	Fistula not established.	Small intestine.	
7	Robson.	March 2, 1889.	Obstruction of the common duct.	Secondary to cholecystotomy.	Direct suture.	Fistula said to be established.	Colon.	Bile and fæces from drainage tube
8	Terrier.	July 13, 1889.	Impacted gallstone.		Immediate suture.	Fistula established.	Duodenum.	
9	Courvoisier.		Gallstone in the common duct.	Secondary to cholecystotomy.	Immediate suture.	Fistula established.	Colon.	
10	Helferich.	Feb. 25, 1892.	Calculi in the common duct.		Immediate suture.	Fistula established.	Jejunum.	
11	Chevasse.	1892.	Obstruction by gallstone.	Secondary to cholecystotomy.	Bone plates and immediate suture.	Fistula established.		Bile and fæcal matter.
12	Korte.						Duodenum	
13	J. F. W. Ross.	Feb., 1893.	Malignant growth, size of walnut, obstructing common duct.	Secondary to cholecystotomy.	Elastic ligature.	Fistula not established.	Duodenum.	

(TRANSLATION.)

HEREDITARY ATAXIA (FRIEDREICH'S DISEASE).*

By Prof. H. Senator.

Translated by

W. Lehmann, M.B.,

Physician to House of Providence and Home for Incurables.

Gentlemen,—The patient that I here take the liberty of presenting to you is a nineteen-year-old young man from the country. His father is perfectly healthy. His mother died four years ago of inflammation of the lungs. Of the patient's five brothers and sisters, one, a sister, now thirty-two years old, has suffered since childhood from precisely the same disease that he has, only that on account of the longer duration it is now in a much more advanced stage; so much so that she can scarcely move about, and mostly sits or lies down. A sister of the patient's mother had, in consequence of gout, very much deformed hands. Of the beginning of his own disease the patient can say nothing. His gait has been bad ever since childhood; still he was able to go to school, and later to occupy himself as a gardener. It is only during the last year that the trouble has so increased as to render him unable to do even small jobs about the house and fields. You see now a young man, for his age, well developed, with strong frame, good bone, and well nourished; weight 138 lbs. His intelligence is up to the average of his station in life, and his handwriting just what might be expected from a man of his education. After long and close observation, nothing abnormal has been found in his mental condition. The internal organs are all healthy, and repeated examinations of the urine show nothing abnormal. There has never been any fever. The most striking features of the case are exhibited while standing or walking. You see that while standing even with open eyes he reels and staggers; on account of which he stands with his legs wide apart, and is inclined to hold fast to some object to steady himself by. With closed eyes the reeling becomes worse, and he seems in danger of falling *backwards*. His gait is wide-legged, uncertain, perhaps very slightly stamping, and somewhat zigzag, the body being inclined to overbalance; turning while walking increases the staggering; in short, very much like the gait of a drunken man. After long standing or walking he trembles and becomes dizzy, and, indeed, often complains of dizziness at other times. While sitting there is no trace of the reeling to be seen. and while either sitting or lying down he can perform all the ordinary movements with his legs. Other symptoms which could properly be called ataxic movements are

* Read before the Medical Society of the Charité Hospital, Berlin.

never present. The muscles of the legs are very well developed, perhaps somewhat more than normal, and feel firm, but have not the qualities one observes in the pseudo-hypertrophy of children. The sensibility in the legs is complete, the cutaneous reflex normal, and there is no ankle clonus. The cremaster and abdominal reflexes are very strong; but, on the contrary, the patella reflex is very much weakened, sometimes altogether absent. There is nothing abnormal in the upper extremity. The head is well formed, and the face exhibits nothing abnormal—neither motor nor sensory disturbance. The pupils react in the normal way, but there is a slight horizontal nystagmus. The tongue, otherwise normal, exhibits, when protruded, slight fibrillar twitching, but not always. Nothing abnormal can be found in the muscles about the pharynx, and the laryngoscope shows nothing abnormal in the larynx. On the other hand, the speech is slow, waiting, dull, and somewhat monotonous, as if he had to think for a long time before getting anything out, and gives one the impression of mental weakness; but, as before said, the most careful observation has failed to detect any mental disturbance or weakness. All the organs of sense have their normal functions; the same also with the bladder and rectum. The electric examination shows only a slight diminution of irritability in the thigh and leg, so that it requires a somewhat stronger current to produce contractions.

From this examination and history, and having regard to etiological conditions, the clinical diagnosis cannot be doubtful. We have here before us a case of hereditary ataxia—that disease which was first described by Friedreich, and therefore rightly bears his name; and indeed this case represents the disease in its purest form, and as we seldom have an opportunity of seeing it, and as it is not often described. It therefore deserves especial attention, and is capable of contributing something towards the thorough explanation of the disease.

In the thirty years which have elapsed since Friedreich's first communication, there have been a very considerable number of cases described which exhibited symptoms not mentioned by him, and also many cases in which symptoms which he considered essential have been wanting; so that it has now become a custom to describe almost every case of weakness and stiffness in the lower extremities, commencing in childhood and accompanied by any kind of disturbance of co-ordination, as Friedreich's disease, although the etiological conditions may be altogether different.

Friedreich's disease is characterized by the following complex of symptoms, beginning in childhood or puberty, based on inherited predisposition, and slowly extending and developing themselves: Weakness and uncertainty in the legs, with a characteristic "static" ataxia, differing from such other forms of ataxia as occur in tabes dorsalis, etc., by dullness of

speech and nystagmus, by either increase or lessening of the patella reflex, and by absence of all sensory disturbance, disturbance of function of bladder and rectum, and of immobility of the pupil. Our case presents exactly this complex of symptoms, neither more nor less, and has also the etiological condition of inherited predisposition.

Accordingly, no differential diagnosis is necessary from other diseases in which one or more of the above-mentioned symptoms occur; such as tabes dorsalis, multiple sclerosis, or, if we take thought of diseases occurring under similar etiological conditions, from chorea infantilis, and the choreatic spastic paralysis occurring in childhood, or, finally, from Thomson's disease, although one might think of the latter on account of the striking firmness of the muscles of the legs, but the similarity goes no further.

There is only one affection, viz., Gowers' ataxic paraplegia, which I would like to consider more closely, because it has lately been brought into certain relation with Friedreich's disease. This disease has, according to the descriptions given chiefly by Gowers in his splendid work on nerve diseases, a similarity, on the one hand, with tabes dorsalis, and, on the other, with spastic spinal paralysis. It is spastic paralysis, plus ataxia. It often depends on a combined disease of the lateral and posterior columns, but not always in the type of the so-called "combined system disease"; and has, according to Gowers, a great similarity to Friedreich's disease, which he looks upon as a combination of ataxic paraplegia and tabes.

Now, it is true that disease of the posterior and latter columns, in more or less exact systematic extension, has been found in cases of Friedreich's disease, first by Kahler and Pick in 1878, and later by others; and in consequence the idea has prevailed that Friedreich's disease is essentially a "combined system disease" of the spinal cord. But I cannot agree with this idea. I have not the time here now to enter deeply into the, by no means thoroughly discussed, question of "combined system diseases." That, I must reserve for another opportunity; but I wish to assert, not only on the ground of what has occurred in literature, but also my own experience, obtained from five cases of the so-called "combined system disease" with sections, that the picture presented by these cases has very little similarity to pure, uncomplicated Friedreich's ataxia. I here show you preparations and drawings from the spinal cord of four of my cases, and beg you to compare them with the different drawings of the condition of the cord of Friedreich's disease, which I now lay before you, taken from literature. You will find that in my cases the degeneration, the sclerosis, exhibits almost all the way through a much more typical arrangement than in the cases in Friedreich's disease; that, especially those systems from whose participation one would seek to explain the characteristic symptoms of Friedreich's disease, the

columns of Gall and Burdach, and also the lateral pyramidal tracts, are attacked from the lumbar to the cervical portion; and therefore in an anatomical respect these cases answer very well to what one would demand and expect from the prevailing idea of Friedreich's disease. But the clinical picture does not in any way answer to the case which I have presented here to-day, and which, I repeat, represents the disease in a pure and uncomplicated form. And it is only such cases that can be taken into account when establishing the existence of a disease.

In those cases of "combined system disease" whose preparations and drawings you see here, as well as in all cases described under this name, one immediately gets the impression of a disease of the spinal cord, or at any rate a chronic neuritis. Nothing whatever of this impression is produced by our patient, but one is at once reminded of disease of the cerebellum. Chiefly the oscillation on standing, the characteristic staggering gait, which has nothing in common with the spasmodic ataxic movements of tabes, are highly characteristic, and simulates very closely what, one might say, is to be seen in every case of disease of the cerebellum. The striking likeness of this characteristic "static" ataxia of Friedreich's disease with that of disease of the cerebellum has, of course, not been overlooked by other observers; but it seems to me that it has never been propperly estimated, always having been overshadowed by the supposition of disease of the cord. Hammond alone is inclined to look upon the medulla oblongata as the primary seat of the disease, with extension into the cerebellum. The other typical symptoms also are such as are usually observed in disease of the cerebellum, and indeed are held to be characteristic of it, viz., dizziness, the characteristic disturbance of speech, nystagmus, absence of all disturbance of sensibility, and also diminution or exaggeration of the patella reflex. On the assumption of a cerebellar disease we can explain all the symptoms of our case, and these are the essential symptoms of Friedreich's disease; while the assumption of a disease of the cord might explain one or more, but by no means the majority, of the symptoms. The nature of the cerebellar affection cannot be at all doubtful. According to the whole course and the etiological conditions, it can only be a question of arrest of developement, of a faulty predisposition, whether of the whole cerebellum, or only of individual physiologically important parts of it. It is therefore easy to understand that several symptoms which are often present in cerebellar affections, and which are held in a certain sense to be of important diagnostic value, are wanting, such as choke optic disc, pain in the back of the head, vomiting, etc., because these are not properly atrophic symptoms, but the result of pressure or irritation of neighboring parts, and belong to degenerative and inflammatory processes, tumors, diffuse inflammations, scleroses, abscesses, etc.

There are some observations concerning atrophy of the cerebellum to be found in literature. The number is not large, and some of these are complicated by anomalies such as diseases of the pons, the cerebrum, and the cord, whereby disturbances not belonging to the atrophy of the cerebellum are present, or there are inflammatory changes present, in consequence of which, as before said, there are also irritation symptoms. It is therefore not strange that our case, in which there is no ground for the assumption of any kind of disturbance caused by such complications, does not exactly tally with some of the diseases of the cerebellum which have been described. There have recently been communicated two observations, one by P. Menzel, the other by M. Nonne, of a disease depending on inherited predisposition, and slowly developing itself, which, as both observers proved, presented in several respects a similarity, on the one hand, with Friedreich's disease, and, on the other, with the symptoms which are usually described as belonging to the disease of the cerebellum. Both proved to be cases of arrest of development, and degenerative atrophy of the cerebellum and cord, and in Nonne's case also of the cerebrum.

There was, on the contrary, in these cases absence of any kind of degeneration of the posterior and latter columns, the same as was found in Friedreich's disease. In spite of this—that is, in spite of the absence of those symptoms which are considered essential to the "combined system disease"—Nonne's case exhibited besides other symptoms, exactly the typical symptoms of Freidreich's disease, viz., the characteristic ataxia, disturbance of speech, nystagmus, and absence of disturbance of sensibility even more clearly stamped than was the case in Menzel's. And Nonne also explicitly emphasized the fact that the ataxia in his case did not exhibit the stamping spasmodic gait of spinal ataxia. A better proof that one of the most essential symptoms of Freidreich's disease, the characteristic static ataxia, is quite independent of the "combined system disease" could not well be given. It also follows that the anomaly which was exhibited by both of these cases in common, and which has also been found in other cases of Friedreich's disease, the abnormally small spinal cord, does not explain the ataxia which exhibits the cerebellar character. That the other symptoms, the nystagmus, disturbance of speech, etc., cannot be well explained by a cord affection, I have already mentioned.

There remains only the condition of the patella reflex, whose failure might perhaps be considered as depending on the condition of the spinal cord, not on simple atrophy—for this was present in both the above-mentioned cases, and still there was no failure of the patella reflex—but on a degeneration, due to atrophy, of certain tracts of the lumbar region of the cord, which has been found in some cases of Friedreich's disease and not in others. Whether or not the state of the patella reflex in Friedreich's disease

depends on some such condition of the cord is a difficult question to decide, and one which I have no occasion to investigate here now; besides, failure of the patella reflex is to be observed in disease of the cerebellum alone.

I therefore conclude that Friedreich's disease, in its essential characteristics, depends on a congenital atrophy of the cerebellum, mostly of inherited predisposition, which may be accompanied by the same kind of atrophy of the spinal cord, and perhaps also of the medulla oblongata. Imperfectly developed organs of congenital origin, especially of the nervous system, as is well known, are very prone to diseases of any inflammatory or degenerative nature; and it is therefore very probable that, on account of the exceptionally long duration of Friedreich's disease, in the course of time such diseases, chiefly also of the spinal cord, will be associated, and that through these secondary occurring diseases another series of accidental and inconstant symptoms will arise, as has been observed in varying frequency. It is also clear that when, besides the cerebellum and cord, still other organs become associated, especially the cerebrum, whether primarily or in the subsequent course of the atrophy or disease, then, either primarily or secondarily, a complicated picture will be presented out of which the pure train of symptoms of Friedreich's disease must, as it were, be enucleated.

That in the later-occurring secondary diseases of the spinal cord a certain similarity or conformity to a general law is exhibited is easily explained.

The localization of the diseases of the cord under the influence of the anomaly of the cerebellum may, in part, be found in those systems of fibres which stand in close anatomical or functional relation to each other; and also, in part, in the fact that individual systems in the cord, more than others, partake of the defective development, and therefore are more inclined to secondary disease, degeneration, sclerosis, etc.

It is known that certain secondary degenerations follow affections of the cerebellum. And with respect to the spinal cord especially, I shall only refer to the latest experiments of Luciani (Marchi on animals); according to which, in consequence of disturbance of the cerebellum, the following parts degenerate: the lateral parts of the antero-lateral tract, fibres of the pyramidal tracts, and fibres in the anterior part of the direct cerebellar tracts. The disease of these latter tracts is looked upon by many as the most constant in Friedreich's disease.

In our case we must conclude from the uncomplicated train of symptoms that there are none of these complications present, except perhaps a slight change in the cord, to which we might attribute the failure of the patella reflex; but that later such diseases will occur and complicate the picture is very probable.

Selected Articles.

THE TREATMENT OF GASTRO-INTESTINAL CATARRH IN CHILDREN.*

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MANY authorities on children's diseases still retain the term "functional disturbances of digestion," including vomiting, simple diarrhœas, etc., and defining these as being without lesion. Others, again, as Louis Starr, regard all catarrhal states as practically involving a lesion, although a very transitory one, and generally non-demonstrable *post mortem*. In an extended experience in these disorders, it has seemed to me wiser to regard them all as dependent upon the lesion of an active catarrhal process, whether that be temporary or involves structural changes.

ACUTE GASTRIC CATARRH OR PERSISTENT VOMITING.

A very common disorder of infancy arising from irritative conditions of the stomach, or accompanying manifestations of acute disease, such as the exanthemata. The most common cause is unsuitable food, whether due to some disturbances of the mother's milk—in which case it is necessary to regard the mother as the avenue of treatment—or, in hand-fed children, to any of the numberless opportunities for causing damage which arise in the preparation of artificial food.

The *symptoms* are chiefly those of discomfort, listlessness, lack of appetite soon followed by vomiting of fermenting substances, curdled milk, or whatever the stomach may contain of food residue along with mucus. There is likely to be some fever, an acceleration of the pulse, tenderness over the epigastrium, and all these symptoms may last for thirty-six or forty-eight hours. In a vigorous child the whole episode often passes with a gush of loose fæces.

If it may be definitely ascertained that there is nothing behind all this, the simplest treatment only is necessary to bring about a cure with the utmost promptitude. The essential indication is to neutralize the hyperacidity of the stomach, due to organic acids, and possibly the employment of a mild laxative. The important elements of treatment consist in thoroughly investigating the condition of the food supply—for example,

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the health of the mother and the quality of her milk—and correcting whatever faulty conditions may prevail. Watch must be maintained if a specific trouble threatens. It is well to bear in mind that the specific fevers very rarely arise in a child under six months of age.

CHRONIC GASTRIC CATARRH, OR PERSISTENT OR RECURRING VOMITING.

Here there is a distinct hyperæmia of the gastric mucosa, which membrane gradually becomes thickened and loosened, changing in color and voiding sticky mucus, or at times even some little muco-pus. The gastric secretions are lessened, certainly in efficiency, and considerable depression of health obtains. The largest number of cases arise between four and seven months, coinciding with, if not dependent upon, the development of the first teeth.

The causes responsible are whatever influences lower vitality—poor hygiene, early weaning, or, above all, bad hand-feeding. As a matter of fact, the mother who is capable of nursing a child is a very rare animal, not only because of incapacity to secrete a wholesome quality of milk or maintain this for any length of time, but especially in that the modern mother, unless under most exceptional circumstances, is subject to numberless disturbing causes—physical and particularly emotional—and many the result of necessity, such as over-fatigue from laborious occupations. Any of these, or more likely all together, soon inhibits the average mother, in the upper classes even more than in the lower, from maintaining a suitable food supply for her offspring. I have several times seen children die in a very few hours from profound disturbance of a mother's emotions.

Next we have to deal with poor milk, even though it be good originally. Milk is subject to such an array of deteriorating influences that it is most difficult to place it before the little consumer in anything like a respectable condition. As to how milk should be cared for from the beginning, I will speak further on. The bottle-fed infant must, above all things, have the bottles kept absolutely clean. Nor is this so difficult a matter if certain very simple rules are clearly laid down by the physician. My directions to mothers at the Dispensary of the Children's Hospital and at the Polyclinic Hospital, where the service is a large one, are usually printed and handed to them, and are as follows: There should be in use at least three bottles and a half-dozen short rubber nipples; a common kitchen bowl filled with a solution of bicarbonate of soda in boiled water. One bottle should be in use; another standing near the fire filled with the soda solution; and a third bottle drying in a sunny place. The extra nipple should be floating about in the soda solution. These to be used in constant rotation, cleaned out each time, rinsed with the alkaline wash, and treated as described. The long flexible tube has happily been almost banished from every civilized community.

In children under eight months no farinaceous foods are suitable, not even the digested starches ; only the animal foods are safe for such young infants—either milk in some form, or broths. It should be known to every mother that children are incapable of digesting starch foods until nearly a year old ; but, alas, many medical men fail to bear this sufficiently in mind.

The dangers of the subacute catarrhal state of the stomach in infants are very great, not only from death from exhaustion, but from the profound depression of vitality, leaving them fertile ground in which the seeds of disease may flourish.

The treatment depends almost entirely upon the regeneration of the food conditions : A thorough investigation of the quality of the milk when it comes to the house ; strict inquiry into the vessels which contain that milk after it has been received ; complete isolation of this from any filthy odors or volatile principles which may contaminate this very sensitive fluid; and, finally, such treatment of the milk as the condition demands.

Treatment of the milk may oftentimes, with advantage, consist of sterilization. Sterilization has been drummed into the heads of the medical people, and into the minds of the laity likewise, as being the greatest panacea and cure-all for every childish ailment—a preventive of all threatened diseases, even of tuberculosis. These great hopes have been by no manner of means fulfilled. Sterilization, or the bringing of milk up to a heat just short of boiling, thereby destroying contained germs and otherwise producing conditions which make the milk more readily accepted by an irritable atomach, is a very valuable measure, with this inevitable proviso : *Whenever the occasion for its use has passed by, let there be as speedily as possible a return to good cow's milk unchanged.* Sterilized milk will not maintain a child for any considerable period in the same degree of vigor, nor with proper increment of growth, as will normal milk. Indeed, as Professor Albert Leeds has recently pointed out, the varieties and numbers of bacteria in milk are far less than the public have grown to believe. Tuberculosis sometimes does insidiously reach the unsuspecting victim through this avenue, but rarely, very rarely. Other microbic dangers do exist in milk, but not nearly to such an extent as we medical men have been teaching or have been taught. The method of *pasteurization*, or heating milk up to about 150° Fahrenheit, does nearly all that may be reasonably required, unless the milk supply is distinctly suspicious.

A good method of preparing the day's supply of milk is to take half a dozen stout pint bottles, thoroughly cleanse and fill them with the milk, and stopper them with absorbent cotton thrust into the nozzle. These are to be placed in a pan of water, and the water brought to a boil for about ten minutes. This drives objectionable gases from the milk, and kills all ordinary forms of bacteria. The cotton prevents the re-entrance,

at least for a long time, of germs floating in the air. These bottles, put upon the ice, furnish very respectably prepared rations for a child.

This milk, diluted somewhat with boiling water for the very young, or not at all for those of nearly a year, guarded perhaps by a little alkali, as lime water, will do for a healthy infant. If the digestion be weak, or, as in the matter under consideration, markedly disturbed, other conditions may be maintained. Among the best of these, to my mind, is peptonization by the cold process as recommended by the Fairchild firm. Two grains of extract of pancreatine and five grains of bicarbonate of soda rubbed up with a tablespoonful of milk, then the proportionate amounts of milk and water added to fill a six-ounce nursing bottle, and all this plunged in hot water until the milk be somewhat warmed, then slowly and cautiously administered about every two hours, will usually suffice.

It is a rule abundantly confirmed that fresh cow's milk is much better than any artificial preparation; but it is also a matter of experience that it is frequently impossible to get good, fresh, sound cow's milk, and we are inevitably driven to the manufacturing chemists for an alternate.

Among these may be mentioned malted milk, which I have known to prove of very great service. A family of three children under my direction, in a place where good, fresh cow's milk could not be had, were brought up upon malted milk and water, and nothing else, from birth until a year of age, and they are very vigorous, well-developed children to-day.

Ordinary condensed milk contains a great excess of cane sugar, which readily undergoes acetic acid fermentation, and should be avoided when possible; but even for this a good word must be said, because it is a matter of experience that many times, when driven to the use of this imperfect substance, children not thriving on what should have been a better food do surprisingly well.

Again, while theories would seem to show it impossible, it is known that babies have been raised in fairly good shape upon so contemptible a fluid as veal or chicken broth, and survived to be a credit to their race.

Skin conditions. The bath is important, but in very young babies the medium need not always be water. For several years, while attending a considerable number of dispensary obstetric cases, I pursued the plan of having all children bathed in clean sweet oil and not water, and the results were eminently satisfactory. Bath-chill was thus averted, and the irritations caused by varying qualities of soap, etc., were spared the youngster, and I believe that when this line is pursued better results are had than by the use of soap and water.

My own children were treated thus until three months of age, and the nurse admitted that the trouble was less than with water, and stoutly averred that the children's skins were much better.

Clothing. The normal clothing, at least the underclothing, for an infant is wool, or possibly silk, summer and winter. No other fabric is safe. The vicious habit of exposing little babies' legs to the sudden changes of our American climate cannot be too sweepingly condemned. Undoubtedly many children survive such maltreatment, but it can with equal certainty be demonstrated that this baring of the knees and arms invites surface chill, which results in our American catarrhal stomach. Far worse, since maternal vanity is responsible for many tiny graves.

In this gastric catarrh there is usually a subnormal temperature in the late reaction from the feverishness which often arises, and in this condition of depressed vitality, where the heat-making power is less and where the accompanying leaky skin expedites the loss of body heat, chill of the internal organs is almost inevitable. Thus, little increments of hyperæmia are caused in the internal organs which may seem trivial, but almost certainly do damage to the alimentary tract.

GASTRO-INTESTINAL CATARRH.

This condition prevails largely among children who have passed the first dentition, and may be divided into the lesser *indigestion*—a disturbance which comes and goes—and the greater *mucous disease.*

A gastro-intestinal catarrh may arise in a robust child, and, with little or no treatment, speedily subside. In children who are less resilient, or more locally susceptible, this becomes a fixed condition, called originally by Eustace Smith, of London, by the excellent name *mucous disease*, and must receive special consideration.

To begin with *indigestion*, or gastro-intestinal catarrh. The causes are many: unfavorable surroundings, deficient light and air, too little of outdoor exercise and too much of school or indoor coddling, and along with the undoubted susceptibility which exists at the time of the eruption of the permanent teeth injudicious food and insufficient clothing—all conspire to bring about a very common and troublesome malady of childhood. This disorder prevails less in summer than in winter, because then the conditions of life of the average child are simpler and more wholesome. The outdoor exercise, so needful for the young, keeps the blood upon the surface of the body, and the circulation is more uniform. There are more reasons than can be enumerated here for the necessity of open-air exercise in maintaining the ebb and flow of the vital activities.

The chief cause, however, of gastro-intestinal catarrh is coarse, indigestible food. This acts as an irritant upon the mucous surfaces, which may already have suffered some depreciation, due to these remoter causes depressing vitality enumerated above. An excess of mucus, which in itself is an active ferment, is poured out; hence arise fermentative processes and the resultant organic acids. These, along with masses of

coarse food, irritate the intestine, and a long train of disturbances result. An attack of vomiting and purging may arise which, for the time being, clears out both stomach and intestine. Unless the causes are removed and the food more carefully selected, it recurs again and again. The mass of mucus mechanically interferes with the absorption of the digested material, the blood is insufficiently replenished, and hence the organic activities are lowered and the gastric and intestinal juices deteriorate. Thus is there direct and indirect reaction.

Extension of the catarrhal processes from the air passages is frequently an avenue of mischief, and I have often seen children, and adults as well, in whom an acute attack of vomiting and purging would follow cold in the nose. Sufferers from this trouble became spare, flabby, and pale, with a leaky skin, rough and inelastic to touch; a weak pulse, with irritable heart; tongue marked by the teeth, literally "indented"; the tonsils are likely to become hypertrophied; the sluggishness in secretions causes vitiation, and hence arises the mawkish odor of the breath; the cervical glands are enlarged; the belly becomes prominent or depressed alternately; a certain amount of pain occurs along the track of the colon, especially when sharp turns are made, as in the right and left hypochondrium; rumbling of gas in the intestines; and a generally variable and capricious appetite.

MUCOUS DISEASE, OR CHRONIC GASTRO-INTESTINAL CATARRH.

A troublesome disturbance of digestion which arises after the first dentition. *Mucous disease* is, to my mind, an excellent name for a condition extremely prevalent among American children. Many times, not recognized, it is a fertile source of serious mischief.

The lesions are similar to those of *indigestion*, but much more severe and extensive. It is usually seen between three or four and twelve years of age—during the establishment and completion of the second dentition. Starr points out that it is especially the resultant of whooping-cough. While there is a considerable number of scoffers, and among them, too, some able men, who love to insist that "teething" produces nothing but teeth, undoubtedly there is a profound disturbance of nervous balance during this period, at least when the eruption of a tooth or teeth is imminent. The hyperæmia of dentition seems to be reflected throughout the length of the alimentary canal. Certainly *something* produces increased secretory activity and greater susceptibility to irritants.

The causes enumerated under *indigestion* also obtain here.

The symptoms are those of indigestion magnified and persistent. A steady emaciation prevails; the muscles fall into a condition of pitiable weakness; curious vaso-motor conditions occur; pallor, occasionally varied, especially in the afternoons and under conditions of excitement.

circumscribed by flushing of one or both cheeks, is noticed; along with this there may be pallor of the lips; this pallor may alternate with cyanosis, until the child looks as if it might faint at any moment; indeed, a very little excitement or fatigue will cause it to do so; the skin is usually sallow, leaky, and flabby to the touch; in places a mild pityriasis occurs, and little branny scales fall from the surface; the hair grows lustreless, and in vivid contrast to itself in health; the oral mucous membrane is seen to be pale; the tongue presents a peculiar and pathognomonic variation known as the "glazed tongue"; the organ is seen to be flabby, "indented" by the teeth, a furry coating over most of the surface, except the edges and tip, which are reddened, and in the middle an ovoid patch of glistening surface, which looks as if it had been shaved. Here and there about the surface fungiform papillæ, brightly reddened, show strongly through. At times, especially after a stormy period of vomiting and purging, a second appearance comes upon the tongue, which is known by the name of the "worm-eaten appearance." Here the organ is not so flabby, is more of its normal shape, the furring not so extensive, but more uniform and thicker, and the characteristic worm-eaten appearance is an irregular denudation here and there about the surface just like an old, worm-eaten bit of wood, the surface of which is bright red with sharp-cut edges where the coating outlines it.

Curious mental states often prevail during this disorder; exceeding capriciousness of temper, for which the child may be unwisely punished; morbid cravings; absurd fancies which take the color of the child's temperament, with such variations as its accidental training may cause. A characteristic point also is the tympanitic belly which is almost constant about an hour or two after food; and now and then in the early morning an umbilical colic. Constipation is the rule, and when this is overcome is very likely to alternate with painful tenesmus.

The nights are periods of horror with unrestful sleep, terrifying dreams, sometimes actual walking expeditions which, in fact, are rarely causeless. The urine may be passed unconsciously. Again, grinding of the teeth at night, and the picking of the nose by day, produce a picture which old women gravely insist is due to but one lubricoidal cause. As a matter of fact, worms are rare nowadays, at least in my experience, much more so than formerly. I can distinctly recall the time when it was a common thing to dislodge ascarides, but now it is less frequent, although suitable remedies may be applied as tests.

The temperature is rarely disturbed. It may, however, be a little high, especially after undue fatigue, and is, in a certain sense, an index or nerve tire. Another characteristic point is a prevalent irritative cough, quite independent of any pulmonary involvement.

Treatment. The treatment is much the same as that of indigestion, except that in indigestion the results are soon obtained, whereas in mucous disease it is imperative to regulate the entire environment and conduct of the child for a much longer period, even for months. The indications are to stop the fermentation of the food, and to give this in regulated amounts and at definite intervals. No starch foods should be taken, except carefully guarded bread. Fresh bread is indigestible because of the continued activity of the ferment. After some hours this ceases to be. Also the subjecting of bread to a second heating kills this ferment and makes it more wholesome. Therefore, a reheating does nearly as much as toasting, without the objectionable effect which toast has upon the bowels. The hours for feeding had best be systematized thus: Breakfast at seven, a light meal or "tiffin" at eleven, dinner at half-past two, and a light supper again at seven. The food should consist of milk either guarded with a little lime water, or peptonized by the cold process; broiled meats, beef and mutton, and rarely a little chicken; soups well freed from fat; oysters occasionally; purees of clams, oysters, or fish. The green vegetables well cooked—such as asparagus, spinach, stewed celery, cauliflower tops—with every other day a soft-boiled egg for breakfast, or an egg boiled very hard and the yolk spread on bread, are suitable. Butter is best omitted, but an excellent substitute is the yolk of a lightly boiled or poached egg spread on bread. It is well to make such variety as is possible by using different kinds of bread,—rusk, rasped rolls, etc. The meats should be well selected, tender, and the fat carefully removed. As the child improves, stewed dried fruit with very little sugar, or a baked apple, may vary the monotony; but the best dessert is the innocent preparation known as junket—milk curdled with rennet, calves' foot jelly, or possibly a plain rice pudding.

The clothing should be very carefully inspected—a flannel band about the abdomen to begin with, and *always* wool next to the skin. The outer clothes may be light, especially in warm weather; but the surface of the skin must be protected by a thorough non-conductor, always wool or possibly silk. The skin must be kept in good condition by bathing. In this it is well to use, rather than soap, salt, which is amply cleansing and more stimulating. A second treatment of the skin should be had after the midday exercise, in the shape of the rubbing down with a coarse towel, or, what is extremely good, a salt towel. This consists of an ordinary crash towel dipped in a strong salt solution and dried. Exercise is important to regulate carefully. Where the child is very weak this should be at first altogether passive, by means of massage, either professionally done, or at the hands of an ordinary nurse, who could easily be taught the simpler movements. Later, small increments of exercise may be pre-

scribed, such as are had through the Swedish remedial movements, and, as strength increases, outdoor movement in the form of driving interspersed with short walks. After exercise of all kinds a brief period of absolute rest must be observed—a quarter or a half-hour at least. Exercise tends to keep the blood upon the surface, and to excite a more active ebb and flow. It also stimulates digestion and works many other advantages, provided always it be judiciously regulated and even supplemented by ample rest.

The medicines are of less importance. The first indication is to check the output of mucus; the next to neutralize the acids and prevent their formation. The alkalies are useful here, producing several effects, partly sedative and partly aiding to dissolve the mucous mass. Next comes the restoration of the irritable mucous membrane, and to bring back the normality of secretion. Here aids to digestion and digestive ferments can be combined. Finally, the bowels need careful regulation. In my dispensary work we use two or three simple prescriptions which seem to be entirely efficacious. The first of these is bicarbonate of soda and fusion of gentian. Curiously enough, children object very little to this nauseous dose, and administered before meals it is wonderfully effective. If great objection prevails, a drop of nux vomica to five drops of glycerine, along with the bicarbonate of soda, is better taken. Syrups are to be avoided, and yet the following mixture also has a valuable function: Bicarbonate of soda, nux vomica, and spiced syrup of rhubarb and water make an excellent combination, taken before the three principal meals. The clearing of the bowels, where this is needed, is best done with castor oil, although if the activity of the liver is manifestly impaired a little calomel may be used with advantage, or the tasteless phosphate of soda, or, again, chloride of ammonium persistently used. To restore intestinal tone, and keep the bowels regularly moving, either myrrh alone, or tincture of myrrh and aloes, serves a useful part. I usually tell my students that the most important agent in treating these disorders of the digestion is a pencil and a good-sized sheet of paper. For thus can one write out at length the conduct of the child for the entire twenty-four hours, specifying the hour for medicine, for food and for exercise, the time of bathing, the length of the exercise and the rest, making clear that these shall not be unduly near the feeding time, outlining exactly what foods may be taken and what avoided, and thus alone can the best results be had. I might speak of endless drugs which have, no doubt, their uses, but I think it would be of questionable value.

I close this summary with a few remarks on the preparation of foods for children.

First, of mother's milk. I wish I could believe that mother's milk was

the best food for a baby. It ought to be, but it is not. By this I mean that it so rarely happens that a mother is both a good mother and a first-rate cow that one stands among the rarities. In the lower walks of life the mother has not only large drains upon her through unavoidable physical labor, but has responsibilities, in the bearing of which variations arise which reflect themselves upon her milk. If she content herself with simply being the mother and caring only for the baby, as in the case of a well-paid wet nurse, that would be quite a different matter. A wet nurse is able to be many times better than a mother. The mothers of the upper walks of life have also many drains upon them, chiefly emotional, and they, too, fail many times, but not necessarily oftener than the poorer ones, although the contrary notion prevails. The wet nurse, theoretically the best supply of food for a baby, is seldom much better than is careful hand-feeding. So, when all is said and done, thoroughly careful hand-feeding is about the safest and most reliable.

When the milk of an animal is the aliment, much care is needed from the time it is removed from the cow until it is used by the child. Two or three practical points may not be amiss. Milk from a healthy cow may be used instantly it is drawn, or else not until it has been subjected to a primary chill. It contains certain volatile principles which, if not removed, are partly poisonous. After being drawn, milk should instantly be placed in a temperature of 60 or 65 degrees, in a clean atmosphere, free from all objectionable odors, and there allowed to remain until quite cool. Thus are the gaseous principles expelled from it, and in other ways it is rendered more wholesome. When received by the consumer, it should be put carefully in an hermetically sealed vessel and in a cool place, not necessarily the refrigerator, which usually contains butcher's meat or other materials which may give forth offensive smells, but kept apart by itself, if merely placed in the shade where a good draft blows, and it is cool as in an ordinary cellar. In very hot weather it is well at times to employ sterilization, but this should never be continued any length of time, because sterilized milk does not maintain the health, nor is it competent to form the best of muscle and other structures. Under conditions of stress, pasteurization is usually sufficient.

Variety. No matter how judiciously a child with weak digestion be fed, and how admirably the regimen outlined seems adapted to his needs, there comes a time when he needs change and variety. As the changes in the digestive capacity grow rapidly in the earliest years, care must be exercised to liberalize the dietary consistent with the constitutional demands. A typical illustration of this came under my notice at Bar Harbor last summer. The child, aged three years, of a gentleman who was himself a patient of mine had been ill and was carefully directed by a physician of

the highest ability to live on a prescribed diet, and throve abundantly. This was continued for many months with unvarying regularity. After a time, for no discernible cause, the boy failed, grew irritable, seemed weak, easily tired; began to void uric acid, the skin grew flabby and leaky. The change of air had done nothing for him, and the parents were in despair. A careful search into the matter revealed the wretched lameness of a diet suitable to a child of a year younger, and consisted of milk, soups and egg on alternate days, and zweibach, varied only with junket and rice pudding. In the face of the morbid fears I enlarged this by the addition of a few green vegetables, roast and broiled meat once daily, a little fish, and some stewed fruit, and promptly the whole picture changed.—*Medical and Surgical Reporter.*

Clinical Notes.

A CASE OF MELANOTIC SARCOMA.

By D. Gilbert Gordon, M.D.,
Assistant Demonstrator of Anatomy, Trinity Medical College.

A CASE of melanotic sarcoma which ran its course in two months, and in which there was never at any time any external manifestation. The disease was clearly shown by the *post mortem* to be primarily in the liver.

Case. R.W., æt. 78; married. Had a large family, all grown up, and particularly healthy. A brother and sister are said to have died of cancer; otherwise the family history was good. The deceased called at my office on March the 29th of this year. He complained then of a pain in the right side (more or less general); also a pain in right shoulder. He had been complaining of feeling indisposed for some time. He did not enjoy his food, and, though he attended to business all the time, he was not up to much. He stated that, six weeks previously, he felt a sudden pain in his back (a twist), and since then he had never felt well, and had not enjoyed his food. For the last few nights he had been sleepless. Simple treatment completely removed the pain in the shoulder. A mustard poultice applied to the side gave considerable relief.

April 5th. The pain in the side was more localized over the region of

the liver, and was more severe on breathing and on moving. He suffered considerably from anorexia, constipation, and insomnia. Fellows' syrup was ordered, but could not be taken. A vegetable tonic given later suited well. Rhubarb and soda relieved constipation. It was necessary to give ¼ grain of morphia at night, which always gave rest and sleep. The temperature had been for some days about 99° in the morning and 100° in the evening. Pulse, 68 and 74.

April 9th. Temperature and pulse were still up, but he said he was feeling better. A distinct bulging was felt over region of liver. He could always map out the sore spot; a circle about 1½ inches in diameter, over the region of the gall bladder, he would from day to day name as the sore place.

April 11th. Had been kept in bed for last two days and put on light diet. The urine was smoky in appearance. Examination of it gave an acid reaction; no albumen; no bile; no blood; urates in considerable quantity. It gave us pretty clearly Erlich's test for typhoid.

April 18th. For six days previous to this date he was seen morning and evening. During this time the evening exacerbations and morning remissions were marked. Temperature, 99° to 100° in the morning, and 100° to 101° in the evening. The pain in the side was more troublesome. He had coughed up, two or three times, some bloody sputa, which looked as if it were made up partly of broken-down tissue. The pain extended to abdomen, and flatulence was troublesome. Râles were heard over right lung, especially at back. Yawning was troublesome at this stage. The friends were told that the disease was probably malignant.

April 19th. He was seen on this day by Dr. W. P. Caven. Dullness was marked over right lung, and crepitations were heard over a large area. Dr. Caven thought the disease was of a sarcomatous nature.

The urine and sputa were examined by Dr. J. Caven, and melanin was found in both. The diagnosis of melanotic sarcoma was now certain.

April 20th. The pain was severe on that day. He complained of feeling very tired, and could take no food. In the evening the temperature was 101°, and the pulse 106, and was tense.

April 21st. He got suddenly worse at 10 o'clock a.m. He was seen at 12 o'clock, and was evidently dying. Peritonitis with tympanites was marked. There was great dyspnœa. Death at midnight.

Post mortem. Dr. John Caven performed a *post mortem*, and on opening the abdomen found the subperitoneal fat filled with melanotic deposit.

Lungs filled with same, right lung more so, the posterior part of which was black in appearance, probably partly due to stasis. Spleen and kidneys slightly enlarged (if any), and filled with deposit.

On breaking sternum the marrow was found to be fluid and black in color, evidently due to deposit.

The liver was much enlarged and filled with deposit. Had on section a marbled appearance.

In looking over this case the important facts seem to be:

(1) The patient was perfectly well two months before death.

(2) There never was any sign of tumor or pigment on skin or eye.

(3) Metastasis was of unusual rapidity.

(4) The liver was the part primarily involved.

(5) Death was evidently due to peritonitis, probably from effusion.

The symptoms by which the diagnosis was made were:

(1) The gradual loss of strength, with general depression and steady failure from first.

(2) Loss of appetite and loss of flesh.

(3) The pain over the liver, with the increased size of the organ.

(4) The absence of jaundice.

(5) The rapidity with which the disease advanced.

(6) The melanin in urine and sputa.

TURPENTINE POISONING, WITH AN UNUSUAL SKIN LESION.

By George H. Carveth, B.A., M.D.,

Physician to Toronto Dispensary and Home for Incurables.

Miss A.B., a young woman of nervous temperament, as a result of overstudy and overwork, had become somewhat run down in health, shown by attacks of atonic dyspepsia, constipation, etc. In the early part of January, 1893, she determined to take a dose of castor oil to relieve constipation. In mistake about one-half an ounce of old spirits of turpentine was given to her, mixed with an ounce of whisky. The mistake was noticed only after the turpentine had been swallowed, but nothing was then done, except to take a dose of castor oil. The turpentine was given at 11 o'clock in the evening. A short time after the patient fell asleep and awoke at 4 a.m., complaining of sickness of the stomach. She vomited soon afterwards, and was then restless till about 8 a.m., when a convulsion came on, followed by a state of unconsciousness. I saw her a few minutes after the onset of the convulsion, and found the following conditions present:

Pulse weak, feeble and rapid, face and lips pale, patient restless, delirious at times, talking incoherently, but could be partly roused.

Urine had been passed in quite a quantity since last evening, no irritation of the urinary organs at any time.

Whisky, sweet spirits of nitre, milk, and sweet oil were given, and warmth applied to the body. Vomiting was induced by irritating the fauces. The vomited matters had a strong odor of turpentine ten hours after the turpentine had been taken. The bowels were moved by magnesium sulphate and injections.

After vomiting severely a number of times she regained consciousness and immediately complained of a burning pain in the right leg, saying that erysipelas was coming on, as she could feel the leg hot and painful. On examination the back part of the leg and thigh was found to be red, swollen, and covered for a space of 5 inches by 13 by a bulla or blister, exactly resembling a burn. On pricking the blister, the contents were found to be watery, with a strong odor of turpentine, and in quantity about ten ounces.

The position of this blister was behind the knee, and reaching from one inch above the fold of the ham to 11 or 12 inches down upon the calf of the leg, and in width from 3 to 5½ inches.

At 11 o'clock in the morning the temperature of the patient was 100° F., and pulse 100. By the evening of this day temperature and pulse were normal. Next day, the skin beneath this blister looked dark in color, and on the third day it became quite black, and it was evident that death of the skin had taken place. About the sixth day the line of demarcation appeared between the dead skin and the surrounding healthy parts, but the sloughs were not completely separated till the twenty-first day, leaving a cavity 4 inches by 12, and in depth down to the muscle; the skin and subcutaneous tissue dying and coming away. On the twenty-seventh day the cavity was filled to the level of the surrounding skin, and skin-grafting was done by means of small-sized pieces of skin laid on the now healthy-looking granulations. The grafts took well and the ulcer was healing rapidly, when the time for the ordinary monthly sickness approached. At once the ulcer began to look unhealthy, and a few granulations in the centre of the sore died. On the thirty-sixth day, this small dark spot appeared, and on the forty-third day *all* the granulations had died and come away, carrying all the new skin grafts except two which had been near enough to the edge to receive nourishment from this source.

On the forty-seventh day new granulations began to form over all the floor of the ulcer, and the edges were growing in rapidly. On the forty-eighth day the accompanying photograph was taken. On the fiftieth day the ulcer was healing in all parts, and looking well, new skin grafts taking

rapidly. About this time the general health began to improve, the patient being able to be driven out, with the limb elevated.

On the seventieth day the ulcer measured 1 by 3 inches, and was looking well. As the time for the next monthly sickness came near, healing stopped, and the ulcer remained stationary for a week, but no granulations of any account died, and after this time the healing was rapid.

At the time of the next monthly sickness healing had almost taken place, a spot ¼ inch diameter only being left, and no special effect was seen in the sore except that the scar looked dark and congested for two or three days.

On the one hundred and sixth day, the ulcer was all healed, and the patient able to go about.

ENLARGED GALL BLADDER FROM OBSTRUCTION—EMPYEMA—PRURITUS ANI.

By J. E. Pickard, M.D.,

Virginia City, Nevada.

ENLARGED GALL BLADDER FROM OBSTRUCTION—CHOLECYSTOTOMY.

Mrs. M., æt. 37. Had always been healthy till about four years ago, when she began to suffer occasionally from biliary colic. Passed a large number of small stones at different times. On one occasion during an attack passed one about the size of a quail's egg.

On Jan. 26th I was sent for, and found her suffering considerable pain. Pulse rapid, and slight elevation of temperature. Gave hypodermic injections of morphia and atropia, and used hot applications externally, and gave chloroform and sodium phosphate internally. In a short time passed some small stones, and was relieved. Some subsequent jaundice, which passed away in about a week.

About Feb. 10th began to have constant pain in region of gall bladder. Stomach very irritable and frequent vomiting; slight elevation of temperature and general prostration. Had kept up chloroform and sodium phosphate ever since previous attack; this was continued, with occasional doses of antikamia and morphia, as pain demanded. Hot external applications when pain was most severe. In a few days noticed enlargement of gall bladder. As no

jaundice supervened, concluded there was obstruction of cystic duct. Gave such remedies as are supposed to have a solvent effect on gallstones, in spite of which the tumor increased until, by Feb. 25th, it seemed the size of a cricket ball. Constant pain. Patient becoming constantly weaker. Could take but little nourishment, and pulse weak and rapid. Slight elevation of temperature showed inflammatory process going on. Fearing rupture of gall bladder and escape of contents into peritoneal cavity, I urged cholecystotomy as the only hope of saving patient. Dr. McDonald in consultation, we decided to operate the next forenoon. After the visit on the 25th, patient complained of more pain and great prostration, and on my visiting her again she declared that she had felt something give way, which I did not believe, as tumor still retained its firmness and contour. Gave hypodermic of morphia and stimulants.

At the appointed time on the 26th, with the assistance of Drs. McDonald and H. D. Boyes, proceeded to operate. Made incision about four inches long over central part of tumor and parallel with costal cartilages. On going through peritoneum, offensive bile mixed with pus welled from the opening. The gall bladder had burst, but there proved, fortunately, to be sufficient inflammatory adhesions to make a wall, so preventing escape into peritoneal cavity. Washed out pus cavity with listerine, hydrogen peroxide, and water. Passed fingers into cystic duct and removed the plug, which proved to be a stiff doughy mass of partially dissolved gallstones. Put in large rubber drainage tube, and dressed wound antiseptically, having stitched wound.

From this time out patient made an uninterrupted recovery. No elevation of temperature, pulse steadied down at once, stomach behaved well, and appetite and strength returned rapidly. Washed out cavity with the above solution, and about twenty days after, as all discharge had ceased, removed tube and allowed wound to heal.

May 1st. Patient happened into my office, having walked half a mile up grade. I examined and found her in excellent health.

The question arises in my mind: which is the safer course to pursue—to perform regular cholecystotomy as soon as it is evident that cystic obstruction exists, thus running the risk connected with laparotomy, which is slight in these days of antiseptic precautions; or to wait and risk the chances of rupture and danger of peritonitis, hoping for the obstruction to become dissolved, or the hopes of adhesions before operating? I strongly favor the former course—opening the gall bladder, removing obstruction, stitching cut made in bladder, and closing external wound—because modern methods of surgery have made laparotomy a comparatively safe operation.

EMPYEMA : PLEUROTOMY.

Miss Q., æt. 26. *Family history:* Mother died from tuberculosis, and father from miner's consumption. Brothers and sisters healthy.

Previous history. Has always enjoyed fair health, but never rugged. Always more or less anæmic. Usual weight, about 130 lbs.

Present condition. November 7th, 1892, walked from another part of the town to my office to consult me for "breathlessness" upon the least exertion, explaining that about three weeks ago she was troubled with a slight pain in the left side and had slight chills and fever. Applied mustard plaster and kept her quiet two or three days. Pain left, and, though feeling much better, the appetite did not return, and she felt weak. About a week after getting around, noticed that she easily got out of breath, a condition that gradually increased, so that now, after climbing the stairs to my office, shows marked dyspnœa. Find marked dullness of left side, reaching to axilla. The usual examination showed pleuritic effusion, which aspiration proved to be purulent. Temperature, 100°; pulse, 130; respirations, between 60 and 70. Put her to bed and gave her the usual treatment.

November 9th. Condition unchanged, except increase of effusion. Aspirated, drawing off fourteen ounces of pus. Routine sustaining treatment continued. From this date until December 13th condition remained the same. The cavity refilled and was aspirated two or three times, with same results as before. Patient continued to lose in strength and flesh, so determined on more radical treatment; though, believing the case to be tubercular, did not feel at all hopeful of the final results.

To-day, assisted by Dr. McDonald, performed pleurotomy without resection. Local anæsthesia by hypodermic injection of cocaine. Made incision three inches long between eighth and ninth ribs in posterior axillary line. There was a discharge of about a pint of thick, foul-smelling pus. Washed out cavity with listerine, hydrogen peroxide, and water, and placed in two large rubber drainage tubes, and dressed wound with corrosive sublimate, absorbent cotton, and iodoform gauze.

The after-treatment consisted in daily washing out cavity with antiseptic solutions. After a few days, found a loose slough in cavity which proved to be a large slough of lung substance, a handful of which was removed. There is nothing of note to record in the subsequent progress of the case, patient making an uninterrupted recovery, rapidly gaining flesh and strength. There never was any elevation of temperature after the operation. On the twenty-fourth day, removed drainage tubes and allowed wound to close. Examined patient recently, and found her in perfect health.

From my experience in such cases, I am firmly convinced that the only proper procedure is pleurotomy, either with or without resection of ribs,

as soon as pus is discovered; that while many cures are reported from simple repeated aspirations, etc., there may be lost much valuable time by such expectant methods, and that pleurotomy, with our present knowledge of antiseptics, is safe, radical, and more promising of good results.

Recently I have had several cases of pleurisy with serous effusion, and I can testify to the value of salol and sodii salicylas in hastening absorption.

PRURITUS ANI.

In a recent number of THE PRACTITIONER, I noticed some suggestions as to the treatment of pruritus ani, the writer at the same time speaking of the disappointments so often met with in the treatment of such cases. Some years ago I happened to have a number of such cases. There seemed no complications in the way of hemorrhoids or seat worms. Yet the treatment of these annoying cases was very discouraging, both to me and my patients, though I had tried almost everything that the literature of the subject could suggest. Happening to speak to Dr. Duncan of my ill-success, he told me that he had never had a failure in curing them in a very short time (that is, uncomplicated pruritus ani) by the application twice daily of an ointment of calomel, forty grains to the ounce of simple ointment. Since then, during the past five years, I have applied the treatment in a number of cases, and have never been disappointed once in the results. About a month ago, a cigar dealer here applied to me for relief of such a trouble. After a very few applications, he told me he was entirely relieved. For years the itching had been intense on going to bed, and his rest badly broken. Have repeatedly had such results, and strongly recommend a trial of the treatment.

A CASE OF PERFORATION OF INTESTINE.

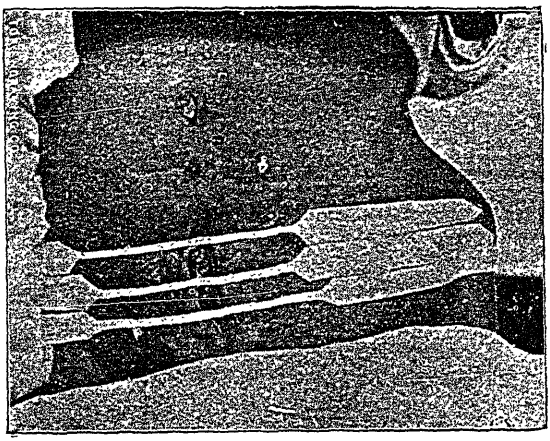
Under the care of James F. W. Ross, M.D., in the Toronto General Hospital.

REPORTED BY A. S. TILLEY, M.D., C.M.,
House Surgeon, Toronto General Hospital.

JAMES B., æt. 32; carpenter; married. Was admitted to General Hospital, April 30th, at 3 p.m., suffering from general peritonitis, and other symptoms indicating perforation of the bowel.

Two years ago last December he was operated on for strangulated hernia. The bowel was found to be gangrenous, and as a result he had a fæcal fistula. Last December it closed, but occasionally flatus escaped through the wound. After the closure of the fistula, he suffered from great distention in the right iliac region near the wound. This happened daily for a time, but gradually it occurred less frequently until it appeared only twice a month.

He retired Saturday night, the 29th of April, feeling as well as usual, but was awakened by severe pain over all the abdomen, and sent for the family physician, who diagnosed perforation of the bowel and sent him to the hospital for treatment. He was placed under the care of Dr. Ross, who decided to make an abdominal section at once.



PHOTOGRAPH OF ABDOMEN.
(Showing healing of abdominal incision with intestine lying in bottom of wound.)

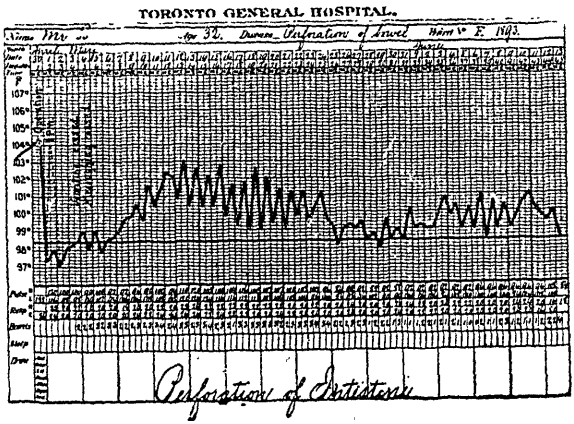


CHART OF CASE COMPLETE TO JUNE 13TH.

When the patient was placed on the operating table his temperature was $104\frac{2}{5}°$; the heart sounds could not be heard, even with the aid of a stethoscope; his respirations were over 40 per minute, and he was unconscious. The anæsthetic used was ether.

On section, fæcal matter was found in the peritoneal cavity, together with pieces of undigested apple and green onions, leading to the belief that the perforation was high up, and not at the seat of the fistula. The peritoneal cavity was thoroughly flushed out with warm water. More than two-thirds of the intestines were passed through the incision and examined, but the perforation could not be found. The patient was so low at this time that Dr. Ross rapidly stitched up the incision and dressed the wound as he would if he expected the patient to live.

After he was put to bed his temperature was $100\frac{2}{5}°$, pulse 136, and respiration 36. For four days he could not retain anything in his stomach. During this time he was given strychnia and brandy hypodermically, and enemata of brandy and peptonized milk. The latter were continued until the 9th of May. On the 5th he took two drachm doses of equal parts of milk and lime-water every hour. This was gradually increased until he took three or four ounces every hour. He also had, at this time, two drachms of whiskey every hour. At the present he is taking two drachms every two hours.

Hiccoughing and vomiting came on immediately after the operation. The vomited matter was very dark at first. The hiccoughing was controlled by chloranodyne, which also kept him quiet, lessened his pain, and gave him sleep. Vomiting ceased on the first day, and hiccoughing on the sixth day after the operation.

On the 12th of May diarrhœa set in. This was controlled by pil plumbi cum opio. He had from four to eight movements in twenty-four hours. For the last two weeks his temperature has risen proportionately to the degree of constipation. The accompanying chart will give the temperature in a plainer language than can be penned.

For a few days the dressings had little or no discharge on them, when it became more profuse and had a fæcal odor. This lasted for about a week. On the 20th of May an apple seed was discharged through the wound. At the present time there is no discharge. The accompanying cut shows the edges of the wound, to which the underlying intestine has become attached. The wound was intentionally allowed to gape while being photographed, so as to show this. The motion of the bowel can at any time be clearly seen. The wound is granulating together quite satisfactorily.

He was on an absolutely milk diet until about the eighteenth day after the operation, when he was given custard, and this was gradually added to so that at the present time his bill of fare is milk and lime-water, lemon egg-nogg, chicken broth, strained gruel, beef tea, mutton broth, and custard and jelly. He has a splendid appetite, asks for solid food, and is much annoyed when he sees trays of more substantial food going to the other patients. He also sleeps well, and the prospect of his recovery is good.

Progress of Medicine.

MEDICINE

IN CHARGE OF

W. P. CAVEN, M.B. Tor.,

Lecturer in Clinical Medicine in the University of Toronto; Physician to Home for Incurables.

Cerebro-spinal Meningitis and Pericarditis as Sequelæ of Pneumonia.

Venturi describes a case (*Lo Sperimantale*, April 30th) in which a patient became first affected by pneumonia, which ended by crisis on the ninth day; convalescence proceeded satisfactorily for the next seven days, but was then suddenly cut short by rigors and a fresh rise of temperature, which ushered in an infective pericarditis and meningitis, to which the patient finally succumbed. A bacteriological examination of the exudation showed that death in this case was due to the action of the pneumococcus described by Fraenkel, this microbe being revealed both by direct cultures and also in the blood of rabbits which died in consequence of inoculation with the exudations. The points in the case to which special attention is drawn are: (1) The fact that there was a period of complete freedom from symptoms while the patient, in all probability, still harbored the microbe; (2) that with human beings it is not true that any general immunity is conferred by a single infection, although this has been shown to be the case with rabbits by the researches of Klemperer. It seems, on the contrary, that a sojourn in the body may actually increase the virulence of the infecting microbe.—*Epitome.*

Oil Enemata in Chronic Constipation.

Dr. Fleiner distinguishes two varieties of chronic constipation, viz., the atonic and the spasmodic. These two forms of chronic constipation are sometimes found combined. The lower half of the large intestine is then in a state of spasmodic contraction, while the upper half is atonic and distended with gases and fæces. The distinction between atonic and spasmodic constipation is of the highest importance as regards treatment. Electricity, massage, and laxatives, which are so efficacious against the former, not only fail in the latter, but are actually harmful, for the spasm of the intestinal wall is increased by the irritation produced. Better results are obtained in some cases by the administration of narcotics, particularly

belladonna and hyoscyamus, and of warm injections of infusions of chamomile, peppermint, anise, etc., but these means also very often prove inefficient. Olive oil injections, however, constitute a ready and safe way of relieving even the most obstinate cases of spasmodic constipation. The oil exerts a stimulating and soothing action on the intestine. It can also be used in cases of atonic constipation; but as this is removed by other means of a still simpler kind, the injections are especially indicated in cases of mixed and spasmodic constipation. For purposes of administration Professor Fleiner employs a cannula with a bulbous end, similar in appearance to an ordinary vaginal tube, but large enough to allow of the easy discharge of the oil. The cannula is connected by means of a flexible tube with a syringe containing about fifteen ounces of pure oil. The patient is made to lie on his back with the pelvis elevated, the cannula is introduced, and the oil injected slowly. The operation usually takes from fifteen to twenty minutes. The cannula need not be passed very high up the rectum, for, by placing the patient in the position above described, intestinal pressure is lowered and the oil is, as it were, aspirated by the intestine. For some time after the injection the oil gives rise to no sensation whatever, but after a while the patient feels a desire to pass wind. There is no pain if pure oil is used. At the end of a few hours, in the morning if the enema was administered at night, a more or less abundant evacuation is produced, which contains only half the quantity of oil injected. The injection is repeated daily until the intestine is cleared of its contents. Two or three enemas are usually sufficient for that purpose. When this has been done, the effect is kept by means of an injection of about ten ounces of oil at intervals of a few days. When the intestine is distended with fæces, the first injection may not succeed in moving the bowel. In such cases an enema of water is given a few hours after the oil injection. Nothing but pure oil of good quality should be used; that is to say, oil free from all rancid and acid principles, which are apt to give rise to colic. Needless to say that the apparatus should be kept scrupulously clean. After each operation the tube and cannula are cleaned by washing first in alcohol and then in water. Apart from chronic constipation, which is so frequently met with in neurotic subjects, in anæmia, and various gynecological affections, oil enemata are also very useful, according to Professor Fleiner, in the treatment of membranous colitis, in typhlitis, rectal inflammation, and the intestinal disturbances connected with diseases of the stomach.—*Medical Week.*

Motor Disturbances in Neurasthenia.

Pitres, of Bordeaux, recently read a paper on this subject before a learned society at Marseilles. Tremor is the most marked motor disturb-

ance of neurasthenia, especially in the upper extremities; hardly noticeable when the arms are hanging down, tremor is at once apparent when they are raised in the attitude of taking an oath. This tremor is like the so-called alcoholic tremor; or, better still, like that described by Marie as characteristic of exophthalmic goitre, and is most pronounced in acute neurasthenia. Emotion, fatigue, and all kinds of excesses exaggerate it. Tremor is present in more than half of all neurasthenic cases. The other motor disturbances are simply accidental episodes, and are in nowise characteristic of neurasthenia, as muscular twitching simulating paramyoclonus multiplex, cramps, rhythmic spasm of the neck, tongue, or œsophagus, and intermittent lameness. Astasia-abasia, often considered a symptom of hysteria alone, Pitres finds of comparative frequence in neurasthenia. Romberg's sign is not unusual, and aids in the erroneous diagnosis of pseudo-tabes. Absence of knee-jerk may also mislead. Loss of pupillary reaction to accommodation and the presence of the reflex to light—the reverse of the Argyll-Robertson pupil—is one of the most singular neurasthenia anomalies. Symptoms of grave organic disease are also symptoms of neurasthenia, and careful examination and judgment are necessary to avoid errors in diagnosis, prognosis, and treatment. Neurasthenia lasts longer than hysteria, and the symptoms disappear more slowly. Neurasthenics are but slightly, if at all, susceptible to hypnotic influence. Hence the futility of hypnotism in this special disorder.—*Medical Record.*

Tolysal and Tolypyrin.

Tolysal and tolypyrin are two new remedies which belong to the antipyrin class. Tolysal is recommended by Hennig in doses of one or two grammes as an antipyretic, antirheumatic, and analgesic. Tolypyrin is recommended by Dr. P. Guttmann as a substitute for antipyrin, which drug it resembles in action and dose.—*Medical Record.*

Heart Polypus.

At the meeting of the London Pathological Society, February 7, Dr. Voelcker (*British Medical Journal*) exhibited a specimen of this nature. It occurred in a woman, aged 54, who died four days after admission with general œdema, cyanosis, and bronchitis. A systolic murmur was heard at the apex. After death no vegetations or infarcts were found. The right side of the heart was enlarged, the left ventricle hypertrophied and dilated, and the mitral valve thickened. In the right auricle was a large gelatinous-looking clot attached to the auricular septum, of the form and size of a champagne cork; it exactly fitted the mitral orifice. The clot

was neither softened centrally nor calcified; in the deeper part were many new-formed capillaries and all the evidences of "organization." Dr. Delépine had given references to two cases in which such clots were in process of vascularization. The author thought that the clot probably arose on a vegetation at the lower border of the foramen ovale. Osler had recorded two cases in which a mass of recent vegetation was found around the edge of the foramen ovale.

Dr. Morison referred to a similar case that had been observed by Professor Gairdner, of Glasgow.—*Maryland Medical Journal.*

THERAPEUTICS

IN CHARGE OF

O. R. AVISON, M.D. Tor.,

Demonstrator of Materia Medica and Elementary Therapeutics in the University of Toronto.

AND

GRAHAM CHAMBERS, B.A., M.B., Tor.,

Professor of Analytical Chemistry and Toxicology, Ontario College of Pharmacy; Lecturer in Organic Chemistry and Toxicology, Woman's Medical College.

Ointment for Urticaria in Children.

℞.—Chloral.....gr.x.
Powdered camphor
Powdered gum-arabic, of each.....℥i.
Simple cerate.....℥i.

Triturate together the first three substances until liquefaction takes place, and add the cerate. At night the ointment is to be applied to the area which is involved. It will diminish the itching and produce quiet sleep.—*Therapeutic Gazette.*

Antiseptic Suppositories.

℞.—Pulv. iodoform.....℥ii.
Pulv. ac. boracici.....℥ii.
Ol. theobrom.....q.s.
Div. in suppositories.....No. xii.
M. et t.

These suppositories form a convenient substitute for the iodoform emulsion in the treatment of tubercular joints and tubercular abscesses generally. One suppository introduced into the vagina daily for one week after operation upon that organ or the cervix uteri, or after accouchement or abortion, preserves the aseptic condition of the tract, and removes absolutely the necessity for using the vaginal douche.

Ivy Poisoning.

℞.—Ac. carbolici.....3i.
Ext. grindelia } .....3ii.
Rob. fl. }
Aquæ ad.....3viii.
Ft. Lot.

Sig.—Apply constantly upon lint.

Effects of Morphine on the Female Organs.

Passower (*Centralbl. f. Gynak.*, Mo. 2, 1893) recently read a paper before the Obstetric Society of St. Petersburg, in which he related the course of two cases under his own observation. It confirmed an opinion, already supported by the observation of others, that the abuse of morphine eventually leads to atrophy of the female organs. Passower's cases were of the ages of twenty-nine and thirty. One consulted him on account of the resultant amenorrhœa. The drug was discontinued, and the catamenia reappeared. The patient took to morphine again, and straightway the menses ceased. Between 1887 and 1889 Passower observed the case; sixteen pounds weight was lost, and the subcutaneous fat disappeared. The vulva atrophied. The measurements of the uterus during that period ran as follows: December, 1887, $3\frac{1}{10}$ inches; May, 1888, $2\frac{9}{10}$ inches; November, 1888, $2\frac{7}{10}$ inches; April, 1889, $2\frac{6}{10}$ inches; September, 1889, $2\frac{3}{10}$ inches; and July, 1890, $1\frac{9}{10}$ inches. The atrophic process no doubt began in the ovaries and spread to the other parts of the genital tract. This is evident from the early appearance of amenorrhœa and the later atrophy of the vulva, and also from physiological evidence; thus the submaxillary glands atrophy in dogs subjected to doses of morphine. How much of the drug can be taken without danger of these ill effects is entirely an individual question.—*British Medical Journal.*

To Deodorize Iodoform, Creasote, and Guaiacol.

The odor of iodoform, creasote, or guaiacol upon the hands can be overcome by washing with linseed meal. Articles having an odor of iodoform may be washed in tar-water, to which oil of wintergreen has been added. The taste of pills of creasote can be disguised by means of a little powdered coffee. The odor of iodoform or guaiacol in rooms can be dissipated by burning coffee.—*Deutsche Medizinal Zeitung (Medical News).*

Treatment of Boils by Boric Acid.

L' Union Médicale quotes Alison as having obtained good results in the case of general furunculosis by the administration for eight or ten days of from ten to fifteen grains of boric acid a day, divided into two doses. At

the same time, four or five times a day, the inflamed areas were washed with a hot solution of boric acid. In this way he claimed to have been able to relieve the boils which had already formed, and to do much towards preventing other outbreaks. By this means he thinks it possible to avoid surgical intervention.—*Therapeutic Gazette.*

Treatment of Syphilitic Palmar Patches.

Dr. V. de Holstein (*La Semaine Médicale*, No. 10, 1893) had a young man under treatment who suffered from a very extensive psoriatic syphilitic eruption upon the palms of his hands. He prescribed the following salve:

℞.—Calomel, ... gms. 5
(ʒj ¼)
Lanoline, } aa ..... gms. 15
Lard, }
(ʒiv).

Every evening, on retiring, he was instructed to rub for a few minutes the palms of his hands with a little of this salve, wear a pair of gloves during the night, and then remove the application in the morning with soap and water. The next morning there was a surprising improvement: at the end of four or five days they were imperceptible on superficial examination, and soon they entirely disappeared. Since then he has often used it with invariable success in several cases of syphilitic palmar patches. —*The Cincinnati Lancet-Clinic.*

Trional.

Trional, under quite recent clinical tests, is found to have a special value in uncomplicated agrypnia, or wakefulness with a certain amount of excitement. In these cases it is said to have acted promptly and effectively in doses of 1 to 2 grammes. Trional is useful also in convalescence from the abuse of cocaine and morphine. Some of the reports state that doses of 2 grammes would usually procure for these patients a sleep of seven to nine hours' duration. According to a recent report of Boettiger, dementia with hallucinations was very favorably influenced by trional. The same writer reports thirty-three cases of insomnia, with physical disturbances, in the insane. These were primary or secondary, or were accompanied by moderate delirium or motor restlessness. Doses of 1 to 2 grammes of trional promptly induced a sleep of six to ten hours. The full report of the cases referred to was published in the *Berlin Klin. Woch.*, No. 42, 1892.—*The Medical Age.*

Salol Gargle.

Siefert (*Centralb. f. Klin. Med.*) confirms Georgi's favorable report. He used salol as a wash or gargle in ulceration of the tongue, stomatitis, angina, and diphtheria, first dissolving six parts of salol in one hundred of spirit, and then adding a dessertspoonful of this solution to a glass of warm water. Seifert also used salol as a powder for insufflation, but he finds it less beneficial than iodol, because, though antiseptic and non-irritating, it does not adhere sufficiently well to mucous membranes and ulcerated surfaces.—*Quarterly Therapeutic Review.*

A New Antiseptic Mixture.

Dr. Cavazzini recommends for dressings the following antiseptic powder:

℞.—Iodoform, 55 parts.
Salicylic acid, } aa 20 parts.
Bismuth subnitrate, }
Camphor, 5 parts.

The powder is of a yellow color, and free from disagreeable odor. Torpid and fungoid granulations are favorably influenced, and suppuration is greatly diminished.—*American Journal of Pharmacy.*

Hyperidrosis of the Feet.

Kaposi recommends the following prescriptions for this annoying condition:

℞.—Naphthol, gr. xxij.
Glycerin, gr. xlviij.
Alcohol, ℥ j.

Sig.: Apply night and morning; then dust.

Or the following:

℞.—Pulv. naphthol, gr. v.
Pulv. amyli, ℥ j.

Every morning. —*La Semaine Médicale.*

[We have found a dilute solution of permanganate of potassium a very useful wash in these cases.—G.C.]

OBSTETRICS

IN CHARGE OF
ADAM H. WRIGHT, B.A., M.D. Tor.,
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The Treatment of Puerperal Convulsions.

M. Charpentier (*Gazette des Hôpitaux*, January 21, 1893; *Sheffield Medical Journal*, April, 1893) closed a recent communication to the Paris Academy of Medicine with the following conclusions: If during pregnancy there is albumin in the urine, however small the amount, an absolute and exclusive milk diet should be insisted upon from the start. It is *par excellence* the preventive treatment of eclampsia. If a convulsion occurs, and the patient is vigorous and very cyanotic, she may be bled to the extent of sixteen ounces, and then chloral and milk given as soon as possible; if she is not so strong, if the cyanosis is less marked, and if the attacks are not so frequent, chloral alone is enough. Labor should be allowed to begin spontaneously, and, if possible, it should be allowed to terminate without interference. If it is delayed by feebleness of the uterine contractions, the forceps may be applied, or the child turned if it is living; if it is dead, craniotomy may be resorted to. Before instruments are used, the os uteri should be completely dilated or dilatable. It is only in exceptional cases, where medical treatment has failed, that labor should be brought on. The Cæsarean operation and *accouchement forcé*, especially by deep incisions into the cervix, should be absolutely rejected.—*New York Medical Journal.*

[I have lost a good bit of my old-time reverence for the "exclusive milk diet." I have stopped forcing milk down the throats of people who detest it, whose stomachs rebel. I have almost forgotten this "exclusive milk" business in the treatment of typhoid fever. However, milk is a good food in the albuminuria of pregnancy. Do not forget, at the same time, buttermilk, koumiss, and various other modifications of milk. I earned the unbounded gratitude of a patient the other day, who was valiantly, and with much groaning, struggling with milk, by recommending buttermilk and a certain kind of mixed diet. The following day she was the happiest creature I had seen for a long time. I would recommend: Milk, or some of its modifications, such as buttermilk, etc.; plenty of water, or mineral waters; bread and butter; rice, tapioca, and the like; greens, such as lettuce, water cress, etc.; a limited amount of certain fruits, such as oranges, bananas, etc. In addition to such diet, I consider the treatment "*par excellence*" to be the administration of small and

frequently repeated doses of a saturated solution of Epsom salts, sufficient to cause from four to ten watery motions in the twenty-four hours—to be continued for *weeks* or *months*, if necessary.—A.H.W.]

Bringing Down the Leg in Breech Presentation.

Potocki (*Sem. Méd., Brit. Med. Jour.*) gives the following directions as to the Lachapelle and Pinard manœuvre in bringing down the leg in breech presentations: "The fœtal thigh is seized, drawn outwards and backwards, flexed and abducted; then the foot falls on to the back of the operator's fingers through flexion of the leg, which is spontaneous, and encouraged by the pressure on the muscles of the back of the thigh." He thinks it better to bring down the anterior leg. The procedure should never be attempted until the os is fully dilated.

Strychnine During Pregnancy as an Aid to Labor.

Dr. Duff, of Pittsburg (*Therapeutic Gazette*), has been giving strychnine as a remedy preparatory to labor, under the following circumstances:

(1) When there is general debility and want of muscular power.

(2) When there have been in previous tardy labors irregular and feeble uterine contractions.

(3) When there has been a tendency, after previous labors to post-partum hemorrhage.

(4) When there have been severe after-pains.

He commences six weeks or two months before the "expected" time with strychnine, gr. $\frac{1}{60}$, three times a day, increasing it when well borne to gr. $\frac{1}{40}$-$\frac{1}{30}$.

The Axis Traction Forceps.

The principles upon which Tarnier's axis traction forceps is constructed are now generally recognized as correct, but the instrument has not yet come into general use in all parts of the world. I fear that its use in Canada is very limited. Cameron, of Montreal, so far as my knowledge goes, is entitled to the credit of first bringing it before the notice of the profession in this country, but his efforts to create any enthusiasm over it have met with only partial success. The Edinburgh school has adopted the principle, apparently, without any reservation. Dr. William Keiller, of Galveston, Texas, has written an admirable paper on the subject (*American Journal of Obstetrics*, April, 1893) which is well worthy of careful perusal by all who do obstetrical work. He is an Edinburgh graduate, and an able exponent of the views of that great school on

matters pertaining to the use of this instrument. He describes and recommends the Milne-Murray modification of the Simpson-Tarnier forceps, which is so constructed and hinged that there is no interference with flexion, extension, or rotation of the head in its passage.

He considers that it is the best in all operations, whether low or high. With reference to the low operation, he says: "The pelvic canal from the coccyx forward is by no means straight; it is distinctly curved, and the axis is always varying. This is the very place where tears are mostly likely to take place; it is, therefore, of the utmost importance that the head be born in its smallest diameters. In unassisted labor the head descends with its smallest suboccipito-bregmatic diameter in the dilating ring of maternal tissue, and the chin flexed on the sternum, till the occiput engages under the symphysis; then the suboccipital region is caught by the pubic rami, and brow and face rotate round the point. Thus an ever-increasing diameter of the head passes over the perineum: First, suboccipito-bregmatic, smallest of all, then the suboccipito-frontal, suboccipito-facial, and, lastly, the large suboccipito-mental; and if the perineum does not split, it is a wonder. Here, at least, it is the duty of each physician to assist nature, to prevent extension of the head, and to secure that, instead of becoming fixed under the pubic arch, the occiput of the child shall continue to descend with the rest of the head, and that the extension shall not be allowed to take place till after the perineum has been passed. This can be done, when the forceps is not in use, by grasping the head thus—the thumb in the distended anus catching the face, and the fingers over the occiput, so that the whole head is under complete control and its extension can be prevented; while the fingers over the occipital region can drag the occiput down, and encourage descent of the whole child with the head in the flexed position.

"Where the forceps is used, let it be still used as a true axis-traction instrument; by no means forsaking the rods and taking to the handles, as is advised by the Tarnier school. Be more careful than ever to follow the indications as to the axis of traction given by the handles, and get the head born by very gentle traction between the the pains.

"Thus Milne Murray states that in ten years' practice, where he has used axis-traction forceps in all kinds of cases, he has never had a single tear beyond the slight slit in the margin of the mucous membrane which is inevitable in all first labors.

"Personally, I have had very good results. Croom especially emphasizes the use of this forceps in saving the perineum in occipito-posterior presentations.

"Passing now to the high operation, if axis-traction forceps are valuable in the low operation, they are invaluable when the head is at the brim.

"Milne Murray states emphatically that 'a properly constructed pair of axis-traction forceps will deliver a child in a flat pelvis down to the limits which can be dealt with by turning, and with a much greater chance of delivering it alive.' I can myself speak of the comparative ease with which a full-time child can be delivered through a true conjugate of three inches. Milne Murray has delivered a full-time child through a true conjugate of 2.75 inches."

I have used the Murray forceps for some years. I have also carried in my satchel the small Sawyer forceps, and used it in some simple cases when the head was low. My preference now, however, is for the axis-traction forceps in all cases, whether the head is high or low. It appears to me that this modified Tarnier, as a surgical instrument, is about as nearly perfect as anything in this world can be.—A.H.W.

The Limitations of Cæsarean Section.

In a paper on this subject (*American Journal of Obstetrics*) read by Dr. Robert A. Murray at the last meeting of the New York State Medical Society, we find the following conclusions:

(1) Cæsarean section should be done always where the conjugata vera is below two and three-quarter inches.

(2) It should be done in the Roberts or Nægele pelvis with marked deformity, or where there is fixation of one or both sacro-iliac synchondroses from diseases—cases in which pubiotomy would be ineffective.

(3) It is the best operation with diameters even larger than two and three-quarter inches, when the child's head is large and could not probably pass with a living child if pubiotomy were done.

(4) Where tumors or exostoses are present, the Cæsarean section or the Porro operation is the best.

(5) In cases of cancer of the cervix it should be chosen rather than pubiotomy, and should be done before labor sets in, so that no sepsis result.

(6) The size of the child's head, in moderate contractions at the superior strait, will oftentimes be the determining factor as to whether an elective Cæsarean section or a pubiotomy be the best operation.

Cancer of the Cervix Uteri Complicating Pregnancy.

That cancer of the cervix does not prevent impregnation is a fact so well known as to require no comment; indeed, every gynecologist can recall cases in which it has occurred at such an advanced stage of the disease as to seem almost incredible. The presence of extensive necrosis, with a constant acrid discharge, has seemed to be no bar to the activity and progress of the spermatozoa, provided that there was not actual mechan-

ical obstruction in the form of extreme cicatricial contraction of the canal. The history of Cæsarean section furnishes numerous examples of this, and I could cite others in which pregnancy advanced several months in patients with incurable malignant disease of the cervix uteri, and was entirely unsuspected until abortion followed a palliative operation. I believe that, under some circumstances, incipient epithelioma actually favors conception in those who have been long sterile, by determining an unusual flow of blood to the uterus, and thus increasing, so to speak, the receptivity of the endometrium.—*Henry C. Coe, M.D., in American Journal of Obstetrics.*

Fœto-Placental Circulation During Delivery.

Cariglia (*Nouv. Arch. d. Obstet. et de Gyn.*, Vol. vii., No. 9) has shown by experimental observation that the afflux of blood, which the fœtus receives from the placenta directly after the birth, is caused by the contraction and retraction of the uterus. His conclusions are:

(1) The blood passes to the fœtus even in the absence of respiratory movements.

(2) Even after respiration is established, the weight of the child varies with the uterine contraction and retraction.

(3) In premature expulsion of the placenta the child loses weight.

(4) The pressure in the vena cava is not sufficient to prevent the passage of the blood from the placenta to the child. This resistance, moreover, is diminished by respiration. Since a diminution in the weight of the child is noted during the first movements after birth, immediate ligature of the cord deprives the newborn infant not only of the reserve blood, but of a part of its own.—*Brooklyn Medical Journal.*

SURGERY

IN CHARGE OF

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How to Administer Chloroform Properly.

Mr. W. J. Cleaver gives the following valuable advice in regard to the administration of chloroform: Take your folded towel or cap of flannel stretched over a wire frame, and your chloroform bottle, graduated if you like, but this is of no consequence; let the temperature of the operating room be at least sixty-five degrees F.; if your patient be one of very nervous kind, give from half an ounce to an ounce of brandy an hour beforehand; put your catch forceps or your tongue forceps on the pillow beside

you; pour a dose of chloroform, a drachm or two, on to the towel or cap and hold it, to commence with, two or three inches away from the mouth and nose of your patient, gradually bring it nearer, but never so near as to exclude air from mixing with the chloroform vapor; at the same time keeping your mind and eye on the respiration movements alone. If the patient shows any symptoms of struggling, let assistants take hold of his wrists and allow him to move his arms about as long as he does not interfere with the administration. If he endeavors to get up, he must of course be restrained; but on no account let half a dozen dressers throw themselves upon him, their united weight coming probably near upon half a ton. What chance has free respiration in such a case? A little pressure on the shoulders will, in ninety-nine cases out of a hundred, be found to be quite sufficient; when a patient is forcibly held down with half a dozen big men on top of him, his struggle ends in a kind of nightmare, with perhaps a fatal shock at the close of it. Continue the administration quietly and gradually, without being put out of countenance by the repeated demands of the operator—to know whether he is not yet under; and such remarks as, I never knew a man take such a lot, put it closer to his nose, what a time he is getting under, etc., etc. You are giving the chloroform, not the operator; therefore take no heed of him. When there is no conjunctival reflex, and a pinch on the abdomen bears no result, the pupil of the eye fairly contracted, and the breathing regular, but perhaps stertorous, you can allow the operating surgeon to proceed.

Pay no attention to the operation, however interesting it may be; watch your patient's breathing only, and continue the chloroform when you see any signs of returning consciousness. If you do this, and this only, you will never have cause to regret it.—*Medical and Surgical Reporter.*

Our personal experience leads us to say that the average anæsthetist varies too much the proportion of chloroform vapor inhaled by the patient. Now he pours half a drachm of the anæsthetic upon the towel, and the patient's life is endangered by an overdose; now he absolutely withholds it, and muscular rigidity with movement of the limbs indicate approaching consciousness.

Our ideal anæsthetist administers the chloroform constantly, but drop by drop, until complete anæsthesia is produced, when the interval between the drops is lengthened. Dropping, not pouring, is the secret of success in chloroform administration.—L.M.S.

Ichthyol in Erysipelas.

Since the abandonment, some years ago, of iodine as an application in the treatment of erysipelas, there have been many competitors for the place once held by this drug in the confidence of the profession, as well as that of the laity.

Of these none—white paint not excepted—can approach in popularity to ichthyol sulpho-ichthyolate of ammonium). In speaking of this remedy, Dr. T. S. Morton (Philadelphia Polyclinic) says: "Where the face or scalp is invaded a 30 per cent. mixture of ichthyol in lanolin is smeared upon the parts and gently rubbed in every two hours. But where dressings are applicable the ointment (the same strength) is spread upon lint, applied thus to the parts, and covered in with wax paper and a bandage.

"A considerable experience with various remedies for erysipelas in pre-antiseptic days, and occasional cases since, has led me, in view of the results attained with ichthyol, to believe that in this agent we have the most powerful and satisfactory remedy that has yet been introduced. It is scarcely necessary to add that wounds through which infection has passed must be sterilized before the ointment is applied. It is my habit to accomplish this by spraying first with hydrogen dioxide, then washing with 1-100 sublimate solution, and finally dusting in aristol or iodoform thickly. The ointment is then spread on without intermediate dressing."

While ichthyol is particularly useful in erysipelas, it is also indicated in superficial phlegmons, cutaneous hyperæmias generally, and inflammation of the superficial parts.—L.M.S.

The Present Position of Gall-Bladder Surgery.

The frequent occurrence of symptoms which (with our increased knowledge of the diseases of the gall bladder and their treatment) we recognize as indicating surgical interference justly claims our consideration of the following conclusions recently presented by Czerny (*Epitome of Medicine*), and which appear in a recent issue of the *Atlanta Medical and Surgical Journal:*

(1) Gallstones require operation, if they cause frequently repeated or lasting trouble.

(2) Empyema of the gall bladder imperatively demands operation, as does hydrops, if it gives serious trouble.

(3) The typical operation for gallstones consists in incision, removal of the stones, and suture of the gall bladder; in this, however, the abdominal wound should be drained for a short time.

(4) If the cystic duct is closed, if the gall bladder is the seat of inflammation, or the contents are greatly altered, then a temporary gall bladder fistula must be made.

(5) Extirpation of the gall bladder is indicated only in cases of severe inflammatory or carcinomatous involvement.

(6) When the ductus choledochus is closed, the operation is absolutely indicated if the strength of the patient will permit. If one does not suc-

ceed in removing the stone or obstruction, then it is recommended to produce a fistula between the gall-bladder and duodenum.

(7) The best incision for gall-bladder operations is an ⌋-shaped cut; the vertical limb lies in the linea alba, and the horizontal part runs towards the right just below the level of the umbilicus.

(8) The danger to life in gallstone operations will be probably less than in operations for vesical calculus.

Thermal Death Point of Bacteria.

We have several times recently been asked for information as to the thermal death-point of the more important bacteria. As an answer to these inquiries we cite the following, taken from Sternberg's admirable "Manual of Bacteriology":

The temperature favorable for the growth of most bacteria is between 20° and 40° C. Some species are able to multiply at the freezing temperature, and others at as high a temperature as 60° to 70° C. As a rule, the parasitic species require a temperature of 35° to 40°; low temperatures do not kill bacteria.

Pruden has made extended experiments upon the influence of freezing. Staphylococcus pyogenes aureus withstood freezing for sixty-six days, a fluorescent bacillus from Hudson River ice for seventy-seven days, and the bacillus of typhoid fever for one hundred and three days.

Cadéac and Malet kept portions of a tuberculous lung in a frozen condition for four months, and found that at the end of this time tuberculosis was still produced in guinea-pigs by injecting a small quantity of this material.

In considering the influence of high temperatures, we must take account of the very great difference in the resisting power of the vegetative cells and the reproductive elements known as spores; also of the fact as to whether dry or moist heat is used, and the time of exposure.

Dry heat. When micro-organisms in a desiccated condition are exposed to the action of heated dry air, the temperature required for their destruction is much above that required when they are in a moist condition, or when they are exposed to the action of hot water or steam.

The spores of bacillus anthracis and of bacillus subtilis resisted this temperature (120° C.), and required to insure their destruction a temperature of 140° C., maintained for three hours. This temperature was found to injure most objects requiring disinfection, such as clothing and bedding. But the lower temperature which destroys micro-organisms, in the absence of spores (120° C. = 248° F.), can be used for disinfecting articles soiled with the discharges of patients with cholera, typhoid fever, or diphtheria, as the specific germs of these diseases do not form spores. It is probable also that it may be safely used to disinfect the clothing of smallpox patients,

for we have experimental evidence that a lower temperature destroys the virulence of vaccine virus (90°-95° C.—Baxter).

In practical disinfection by means of dry heat, it will be necessary to remember that it has but little penetrating power. In the experiments of Koch and Wolffhügel, it was found that registering thermometers placed in the interior of folded blankets and packages of various kinds did not show a temperature capable of killing bacteria after three hours' exposure in a hot-air oven at 133° C. and above.

Moist heat. The thermal death-point of bacteria, in the absence of spores, is comparatively low when they are exposed to moist heat. The results of the writer's experiments are given below.

The results obtained in these experiments, for non-sporebearing bacteria, are given in the following table. The time of exposure was ten minutes, except for the cholera spirillum and the cheese spirillum of Deneke.

THERMAL DEATH-POINT OF BACTERIA.

	Centigrade.	Fahrenheit.
Spirillum choleræ Asiaticæ	52°	125.6° (4 m.)
Spirillum tyrogenum (cheese spirillum)	52	125.6 (4 m.)
Spirillum Finkler-Prior	50	122.
Bacillus typhi abdominalis	56	138.8
Bacillus of schweine rothlauf (rouget)	58	136.4
Bacillus murisepticus	58	136.4
Bacillus Neapolitanus (Emmerich's bacillus)	62	143.6
Bacillus cavicida	62	143.6
Bacillus pneumoniæ (Friedlander's)	56	132.8
Bacillus crassus sputigenus	54	129.2
Bacillus pyocyanus	56	132.8
Bacillus indicus	58	136.4
Bacillus prodigiosus	58	136.4
Bacillus cyanogenus	54	129.2
Bacillus fluorescens	54	129.2
Bacillus acidi lactici	56	132.8
Staphylococcus pyogenes aureus	58	136.4
Staphylococcus pyogenes citreus	62	143.6
Staphylococcus pyogenes albus	62	143.6
Streptococcus pyogenes	54	129.2
Micrococcus tetragenus	58	136.4
Micrococcus Pasteuri	52	125.6
Sarcina lutea	64	147.2
Sarcina aurantiaca	62	143.6

The following determinations of the thermal death-point of pathogenic organisms have been made by the authors named: Bacillus anthracis (Chauveau), 54° C.; bacilius mallei—the bacillus of glanders—(Lœffler), 55° C.; bacillus gallinarum—micrococcus of fowl cholera—(Salmon), 56° C.; bacillus of diphtheria (Lœffler), 60° C.

In the writer's experiments, the micrococcus of gonorrhœa was apparently killed by exposure for ten minutes to a temperature of 60° C.

The experimental data given show that the pathogenic bacteria tested and different kinds of virus are all killed by a temperature of 60° C. or below; some, like the cholera spirillum and micrococcus pneumoniæ crouposæ, failing to grow after exposure to as low a temperature as 52° C. for four minutes. By extending the time a still lower temperature will effect the same result. Thus, according to Chauveau, the anthrax bacillus is killed by twenty minutes' exposure to a temperature of 50° C.; and Brieger sterilizes cultures of the diphtheria bacillus, to obtain the soluble toxalbumin produced in them, by exposure for several hours to 50° C. A temperature of 60° has been found to decompose the toxalbumin. The non-pathogenic bacteria tested have, as a rule, a higher thermal death-point—58° C. for bacillus prodigiosus, 64° C. for sarcina lutea, etc.

It is a remarkable fact that certain bacteria not only are not destroyed at higher temperatures than this, but are able to multiply at a temperature of 65° to 70° C. Thus Miquel, in 1881, found in the waters of the Seine a motionless bacillus which grew luxuriantly in bouillon at a temperature of 69° to 70° C. Van Tieghem has also cultivated several different species at about the same temperature, and more recently Globig has obtained from the soil several species which grow at temperatures ranging from 50° to 70° C.

The resisting power of *spores* to heat varies in different species; but the spores of known pathogenic bacteria are quickly destroyed by a temperature of 100° C. (212° F.). In the writer's experiments, the spores of bacillus anthacis and of bacillus alvei failed to grow after exposure to a temperature of 100° C. for four minutes, and only a few colonies developed after two minutes' exposure to this temperature. The thermal death-point of spores of the "wurtzel bacillus" and of bacillus butyricus (of Hueppe) was the same—100° C. for four minutes.

Schill and Pischer, in 1884, made a number of experiments to determine the thermal death-point of bacillus tuberculosis. They found that five minutes' exposure to a temperature of 100° C. in steam destroyed the vitality of the bacillus in sputum in five minutes. When the time was reduced to two minutes a negative result from inoculation was obtained in two guinea-pigs, but one inoculated at the same time became tuberculous. My own experiments and those of Yersin, made since, lead me to think that there may have been some cause of error in this experiment of Schill and Fischer, and that the thermal death-point of the spores of bacillus tuberculosis is considerably below the boiling point of water.

In the practical application of steam for disinfecting purposes, it must be remembered that, while steam under pressure is more effective than

streaming steam, it is scarcely necessary to give it the preference, in view of the fact that all known pathogenic bacteria and their spores are quickly destroyed by the temperature of boiling water.

A Lesson in Antisepsis.

The scene occurred in one of the most prominent of our New York hospitals, the time of action was within the last five years, and the *dramatis personæ* were a patient who was to have a portion of his cerebral cortex removed, one of the best of New York surgeons, a prominent neurologist, assistants, visitors, and students. The surgeon had deftly and carefully removed the bone and made a flap in the meninges, and the neurologist was about to decide the location of the cortical centre. Turning on the current of his battery, he applied the electrodes to his tongue to determine the strength of the current, and was about to transfer the electrodes to the cortex, when the surgeon, who had watched this method of current-testing with evident concern, arrested the neurologist's hand, saying, at the same time, that the electrodes must be disinfected over again after contact with his mouth. The disinfection of the instrument being completed, the neurologist confirmed the location of the centre, and the surgeon prepared to complete his work. As he took his stool to resume the use of the knife, he found that the light was insufficient; rising, he caught hold of the gas fixture placed above the operating table, pulled it down over the field of work, placed his stool in a little more convenient position, and, forgetting to disinfect his hands, proceeded with the operation. The mote caused by the neurologist's *gaucherie* had been removed, but the beam of the surgeon's forgetfulness resulted in the death of the patient in consequence of suppurative meningitis.—*New York Medical Journal.*

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF

EDMUND E. KING, M.D. Tor., L.R.C.P. Lond.

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Urethroplasty in a Case of Large Defect and a Fistula of the Urethra.

Schüller describes, in the *Berliner klin. Wochenschr.*, 1892, No. 34, the following case: The patient was a strong young man, aged thirty years. In 1882, in the course of a gonorrhœa, a small fistula formed just behind the glans, probably in consequence of a perforating chancre of the urethra.

In May, 1887, he was operated upon for the relief of the fistula. In all, twelve to fourteen operations of the most varied character had been performed, including several flap-transplantations from the skin of the prepuce and penus. None of the operations were successful, and, as the flaps sloughed in several instances, the fistula, which was small at first, became large by this loss of substance.

The author first saw the patient in 1890. At this time there was a defect in the anterior portion of the floor of the urethra, into which a five-pfennig piece could readily be admitted. This was separated from the meatus by a thin thread of tissue. One and eight-tenths cm. behind the defect (toward the scrotum) there was a small fistula, through which a probe would barely pass. Between the two openings the skin was cicatricial and adherent. In passing his water the patient was able only with difficulty to protect himself and his clothing, as the stream tended to run back. Some urine was passed through the small fistula also.

Schüller decided to operate on the large defect first, which he did by the following method: Both borders of the deficiency were split longitudinally, rather deeply, and the borders folded out. At the posterior angle the incisions were united. The flaps were thus in two layers, as in Duplay's method of operating in hypospadia, the lower flaps belonging to the urethra, and the upper ones to the skin. The mucous membrane was stitched together first, so that the edges were turned a little toward the urethra, and the skin flaps then united. The small fistula was closed some months later by the same method. Healing occurred, leaving two hair-like fistulæ, probably from suture-tracts. These were closed later.

The result was entirely satisfactory; there was no evidence of stricture, and moderate-sized instruments passed readily.

The operation describes occupies a position midway between flap-transplantation and linear union.—*American Journal of the Medical Sciences.*

Use of Lactic Fermentation in the Bladder as an Antiseptic Application in Cases of Ammoniacal Complications of the Urine.

Roberts (*Lancet*) was consulted by a patient who, five years before, was treated by lithotrity. The patient was compelled to employ the catheter for the complete evacuation of his bladder, at first twice a day, and for the last two years once a day.

At the time of examination there was very little irritation of the urinary passages, and the patient was required to relieve the bladder only once during the night. Examination of the urine showed that it was turbid,

intensely acid, and contained sugar. Microscopic examination showed micrococci and bacilli, resembling those seen in souring milk, and also toruli, having the characteristic appearance of yeast cells. There was also pus, and a trace of albumin. The patient complained of none of the usual symptoms of diabetes. A remarkable feature of the case was the maintenance of a sharply-acid reaction of the urine and the absence of recurrent formation of phosphatic concretions in the bladder. The conditions in this case were peculiarly favorable for ammoniacal decomposition and the formation of phosphatic concretions, yet neither of these affections supervened. The explanation of this, Roberts holds, is to be found in the saccharine urine, which favors acid fermentation. In the case noted three fermentations tending to acidity appeared to be going on concurrently. The chief of these was the lactic fermentation, and lactic acid was identified as the main cause of the intense acidity of the urine. The second was the alcoholic fermentation engendered by the yeast cells which were always present in the patient's urine. The third was the acetic fermentation, for acetic acid was clearly demonstrated in the distillate from the urine. Robert states that it is quite certain that if, at some future time, the patient ceases to be glycosuric, and still continues the use of the catheter in a careless way, the urine would, in no long time, be in the grip of the ammoniacal fermentation, and there would then be danger of the formation of phosphatic concretions in the bladder.

This case suggests that lactic fermentation might be turned to therapeutic uses. This agent might be tried in intractable cystitis from ammoniacal decomposition of the urine, and in recurrent phosphatic formations after operations for stone. The mischief in these cases is contingent on the establishment of the ammoniacal fermentation in the bladder, whereby urea is changed into carbonate of ammonia. This change, if it goes far, renders the urine irritating to the mucous membrane and provokes cystitis; it also imparts an alkaline reaction to the urine, with consequent precipitation of the mixed phosphates. If a counter-fermentation of the lactic type could be maintained, the irritating quality of the urine would be diminished, its acidity would be restored, and the further decomposition of phosphates would be prevented. Attempts in this direction might be made by injecting into the bladder a saccharine solution which was in process of lactic fermentation. For this purpose malt extracts are probably the best available means. An ounce of such an extract might be injected once, twice, or thrice a day into the empty bladder, and retained as long as possible. A course of treatment of this kind continued for a week or two would probably give the lactic fermentation the upper hand, and even enable it for a time, at least, to maintain its supremacy after the saccharine injections had been discontinued; for it has been observed that

organisms of the lactic type multiply freely in non-saccharine urine, and their presence appears to protect the urine to an important degree against the invasion and development of the ammoniacal fermentation. When the urine is strongly ammoniacal it would be necessary, as a preliminary step, to irrigate the bladder with an acid solution in order to abate the ammoniacal reaction; because it has been found experimentally that the lactic fermentations cannot proceed in the presence of a high percentage of carbonate of ammonia. For this purpose a solution containing ten grains of citric acid in a pint of warm water might be safely used. Two or three pints of such a solution passed through the bladder would be sufficient to prepare the viscus for the reception of the diluted malt extract, and so render the development of the lactic fermentation within it possible.—*Therapeutic Gazette.*

Indicanuria as a Symptom of Latent Suppuration.

Indican, in small quantities, is a normal constituent of healthy urine, but under certain circumstances the amount is so large as to merit the designation of indicanuria. This condition is usually dependent on decomposition of the intestinal contents consequent on constipation; but it has recently been discovered in the urine in connection with the formation of pus in such quantities as to authorize the belief that its presence may afford an important indication of latent suppuration. The first thing, of course, is to eliminate the intestinal tract as the source of the indicanuria, and this is done by the administration of naphthol, bismuth, or other disinfectant. Should chemical analysis still reveal the persistence of the indicanuria, there is reason to suspect suppuration. In several cases observed by Dr. Keilmann, of Dorpat, the information thus obtained led to a successful search being made for foci of suppuration, the indicanuria subsiding as soon as the pus was evacuated. The analysis is simple enough to admit of its application by every one, which is more than can be affirmed of many of the tests proposed by laboratory physiologists. Equal quantities of urine and strong hydrochloric acid are shaken together in a test tube, and a little chloroform is added. In the presence of indican this becomes blue from the indigo liberated by the decomposition of the indican, and falls to the bottom of the tube. A fair idea can thus be readily obtained of the amount of indican present, but for purposes of diagnosis it is necessary to resort to a quantitative analysis. This does not involve much additional trouble advantage being taken of the bleaching powers of hypochlorite of calcium, a standardized solution of this salt being dropped into the above mixture until complete decoloration results. Three or four drops of a five per cent. solution may suffice for this purpose, but in some cases as much as fifty, or even eighty, drops may be required.—*Medical Press and Circular.*

Certain Forms of Nervous Disease.

Dr. I. Adler, in a very interesting and instructive paper on "Some remarks on oxaluria and its relations to certain forms of nervous disease," concludes as follows:

I am well aware that these observations are too few in number, and too defective in many respects, to serve as a basis for definite and authoritative general conclusions. The subject is an intensely difficult one, and our knowledge of even its elementary chemical and physiological bearings still very uncertain. Only long-continued and patient analytical and experimental work can ultimately furnish the data for a future physiology and pathology of oxalic acid in the human organism. While not pretending to solve any of the problems connected with this subject, it seems to me, nevertheless, that from the foregoing analyses and observations, as well as from the work of other observers and experimenters, the following conclusions may be provisionally deduced:

(1) Oxalic acid is a normal, though possibly not a constant, constituent of the urine.

(2) The amount present in a given quantity of urine can be determined with any degree of reliability only by quantitative analysis. All approximations by means of microscopic examination are untrustworthy.

(3) The chief source of oxalic acid in the urine is the oxalic acid contained in the food, though it is probable that minute quantities are produced in the course of normal metabolism. Further investigation will have to demonstrate if, and under what conditions, morbid metabolism affects the production of oxalic acid.

(4) Impeded respiration, diseases of the heart and lungs, do not of themselves tend to produce an excess of oxalic acid in the urine.

(5) The establishment of pathological oxaluria as a type of disease *sui generis* is not warranted by the facts at present at our command.

(6) The nerve symptoms assumed as characteristic of pathological oxaluria are not caused by an excess of oxalic acid in the blood and in the urine. Analysis will show that such excess is by no means as frequent as has often been assumed.

(7) Where such excess does occur not to be accounted for by ingesta, it is probably one of several symptoms of metabolic alterations primarily caused by disturbances of the nervous or digestive organs, or both, but no factor in the causation of disease.

(8) In considering the excretion of oxalic acid in the urine, it is of the utmost importance to take into account at the same time excretion of the other principal constituents, particularly urea and uric acid.—*The Medical Record.*

PEDIATRICS

IN CHARGE OF

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A Case of Diphtheria, Measles, and Chicken-pox.

William D. Booker, of Baltimore, reports a case of continued diphtheria, measles, and chicken-pox (*Archives of Pediatrics*). In the family there were four children, the eldest aged 9 years, and the youngest 18 months.

Diphtheria occurred first in the third child, and was quite typical. Cultures were made from the throat and diphtheria demonstrated.

Shortly after the attack of diphtheria the oldest child had chicken-pox, and in about two weeks the second child contracted measles, and while sick also had chicken-pox.

While the second child was sick with measles, it was discovered that the youngest child had membrane in the throat, cultures from which gave diphtheritic bacilli and a few streptococci. This diphtheria was seen first on December 21st and on December 29th. The first vesicle of chicken-pox appeared to be followed by a moderately thick eruption over the body, and accompanying the appearance of the vesicles there was considerable fever, cough, coryza, and conjunctivitis.

January 1st. Measles appeared on face, neck, and arms, and on the following day extended to all parts of the body. In some places the patches of measles were seen surrounding the vesicle of chicken-pox. Later, the membrane extended to larynx, and intubation was performed. Child died on January 4th.

Dr. Booker considered that the condition of the throat and air passages resulting from the effects of measles favored the extension of diphtheria into these parts; for prior to the appearance of measles, the throat had become almost free from membrane, while at the autopsy it was discovered in the pharynx, covering the uvula and tonsils, and extending to the larynx, lining the trachea and larger bronchial tubes.

Tubercular Neuroses of Childhood.

Dr. B. K. Rachford (*Arch. of Pediat.*) considers chronic anæmia to be the great foundation cause of the neuroses of childhood, and, while recognizing the part played by syphilis, malaria, and rheumatism in the production of anæmia, he ascribes the underlying blood condition in a very large proportion of cases to tubercular infection. To support this contention, he gives

the following figures: Out of 407 cases of tuberculosis under fourteen years of age, taken from the records of the Children's Clinic, Medical College, Ohio, 139 cases had as a complication, or, as might be said, as a symptom, one of the neuroses; that is to say, that 3470 of all cases of tuberculosis occurring in dispensary practice in Cincinnati, Ohio, had some well-marked neuroses. Among other neuroses are included persistent headache, epilepsy, night terrors, panyngismus stridulus, hysteria, etc. Of the 139 neurotic cases from the records, 30 had chorea, 23 had incontinence of urine, and 80 had other neuroses. That 3470 of tubercular cures should have well-marked neuroses is a startling fact; yet it is a statement based on statistics, and not on theory.

It does not follow that tuberculosis was the most important etiological factor in all these cases. A few also had malaria, and three of the chorea cases gave some evidence of rheumatism. But the number of cures included in this list that gave evidences of chronic disease other than tuberculosis are so few that, if excluded, these figures would not be materially changed. This being true, it may be fairly concluded from what had previously been said that the 139 cases of neurotic disease associated with tuberculosis must, for the most part, have had tubercular anæmia, and this must lead to the conclusion that the tuberculosis was at least one of the important etiological factors in these cases. But the conclusion that the cases of tubercular disease having neurotic affections were anæmic does not depend alone on the argument that tuberculosis, as a rule, produces anæmia, and anæmia sometimes produces neurotic disease; for in all recent cases it was demonstrated by blood examination that all patients having a neurosis complicating tuberculosis were invariably anæmic, and in no instance was a case of tuberculosis with neurotic complication found that did not show marked reduction of both hæmoglobin and blood corpuscles.

If instead of noting the cases of tuberculosis complicated with neurotic disease inquiry is made into the percentage of cases of neurotic disease showing evidence of tuberculosis, the figures are not less convincing. Of 61 cases of chorea in dispensary practice 30 gave evidence of tuberculosis, and this same percentage holds for all other neuroses. These facts also bear testimony that tuberculosis is a very important factor in the production of the neuroses of childhood.

The author does not underestimate the importance of predisposing factors, or faulty development, or neurotic inheritance, nor of such exciting causes as fright, adherent prepuce, etc., which may precipitate an attack in a child prepared by inheritance and anæmia for these diseases. All he wishes to do is to give to anæmia, and especially tubercular anæmia, the important position it deserves as a factor in the etiology of the neuroses of childhood.

Vulvitis in Children.

In the *Gazette des Hopitaux* a case is reported by Dr. Lop of "gonorrhœal rheumatism" following vulvitis in a girl aged two years. The child had suffered from discharge for a fortnight; it was free, tenacious, and greenish-yellow; the vulva was acutely inflamed. On the ninth day after the commencement of the discharge, a painful swelling appeared in the right radio-carpal joint. On admission into the hospital the wrist was red, tender, and much swollen. There was absence of fever, urethritis, albuminuria, and cardiac or pulmonary complication. It appeared that there was no reason to suspect venereal taint of any kind. The discharge was carefully examined and gonococci discovered. Sublimate lotions and painting of the part with a five per cent. solution of nitrate of silver soon cured the local discharge. After fifteen days of antiseptic treatment, no more gonococci could be found. At the same time the articular complication subsided. Opinion is still divided, but many authorities deny that gonococci is a specific germ, and declare that they have detected it in the vulvitis of virgins.—*Pacific Medical Journal.*

The Relation of Rheumatism and Chorea.

Dr. Charles W. Townsend presented a paper on the above subject to the American Pediatric Society at Boston, May 4, 1892, and arrived at the following conclusions:

(1) Fright, eye-strain, debility, and school pressure, particularly the latter, which often includes some of the former, are potent exciting causes of chorea.

(2) Rheumatism, although absent from the history of at least half of the choreic patients, occurs with greater frequency among the choreic than the non-choreic cases.

(3) There is an intimate relation between chorea and rheumatism.

(4) The heart murmur so frequently found in chorea, sometimes associated with chorea and sometimes not, is in a considerable proportion of the cases due to endocarditis, and leads to organic valvular disease.

Dr. Floyd M. Crandell next offered a paper on the same subject, and stated that he should class rheumatism, fright, hysteria, excitement, pregnancy, not as all-powerful agents for the production of chorea, but rather as exciting agents for the production of a disease in subjects predisposed to it, the most universal and potent of which is rheumatism.

Dr. Samuel S. Adams presented the third paper on this subject, with the following conclusions:

(1) That chorea is due to rheumatism in but a small percentage.

(2) That the heart murmurs are hæmic in the largest number of cases.

(3) That the successful treatment would seem to exclude latent or apparent rheumatism.

(4) That anæmia and chlorosis are well marked in nearly all cases.

(5) That nerve impoverishment is by far the most potent factor.—*Arch. f. Pediat.*

Injection of Ice-Water into the Intestine.

Dr. Julius L. Salinger again brings to notice the rectal injection of water in the treatment of the bowel diseases of children. He says the method to be preferred is that by which the water is allowed to slowly flow into the bowel, with retention of the water in the bowel as long as possible. He thinks forced injection should never be used, nor should the water be made to flow too quickly into the bowel, as headaches, umbilical pain, vomiting, and even shock may occur.

He uses a simple rectal syringe, or an ordinary fountain syringe, instead of any especial apparatus.

In a child two years old, he injects a pint of ice-water, gradually increasing to a quart, every four hours. His ordinary rule is to inject a pint of ice-water for a child six months old, running up to the amount of a quart for a child two years old, and he finds it rarely necessary to give larger quantities than a quart. This injection not only relieves the diarrhœa and dysentery, but also reduces the temperature.

He says it has almost a specific action in the summer diarrhœa accompanied by vomiting in children.—*Therapeutic Gazette.*

Bromoform in Whooping Cough.

It was used in thirty cases, and the results were uniformly gratifying. It is conveniently prescribed thus:

℞.—Bromoform.....M i.
Pulv. Tragacanth Co.. .....ʒ ss.
Syr. Simp..... .....ʒ ss.
Aq. ad..... .....ʒ ss. M.

This forms a pleasant mixture, and the bromoform is well suspended. In his experience the appropriate dosage of bromoform was as follows: *m*ss. for children under one year, *m*i. up to three years, *m*ii. up to six years—thrice daily to commence with. If necessary, these doses may safely be gradually increased till they are doubled.—*F. W. Burton-Fanning in The Practitioner.*

Diabetes Following Influenza—Recovery.

The boy, fifteen years old, had been quite well until a month previously, when he was attacked by influenza. Three weeks ago he began to suffer from thirst. This steadily increased, and was a very distressing

symptom when he sought advice. His urine began to increase in amount *pari passu* with the thirst, and he had to get up eight or nine times in the night to pass urine. The total amount for the twenty-four hours would appear during the last few days to have been from twelve to fifteen pints. He had lost flesh and strength rapidly. There was no history of diabetes in the family. Urine pale, of typical diabetic appearance, loaded with sugar; specific gravity, 1040. An absolutely strict diabetic diet was ordered, all carbohydrates, so far as possible, being excluded. Under this regimen the patient improved at once. After one week, the daily excretion was about sixty-five ounces of specific gravity 1030, still containing sugar, though in greatly diminished amount. He was then given half a grain of codeia three times daily, immediately after meals. Two days later, nine days from the commencement of treatment, the sugar entirely disappeared. Since that date (March 19th) the urine has remained absolutely free from sugar, and the patient has completely regained health and strength. In the first week of June the diet was gradually relaxed, until by the end of that month the patient returned to his ordinary food, and the codeia was left off altogether.—*Hetherington and Brown in The Lancet.*

PATHOLOGY

IN CHARGE OF

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Universal Staining Fluid.

Davalos recommends as a universal staining fluid for all kinds of micro-organisms the following modification of Ziehl's solution:—Fuchsin, 0.25; alcohol, 10; carbolic acid (crystals), 5; water (distilled), 100. The solution is to be filtered. Cover-glass preparations should be stained for from 1 to 2 minutes; washed, dried, and mounted in Canada balsam.—*Centralb. f. Bakt. u. Parasit*, May 1, 1893.

Subcutaneous Implantation of Pancreas: Its Importance in the Study of Pancreatic Diabetes.

E. Hedon: Arch. de Physiol, Oct., 1892.

The pancreas, separated from all of its normal anatomical connections, is able to exist when grafted beneath the skin, continues to secrete pancreatic juice, and to exercise its function as a blood vascular gland. This

has been irrefutably demonstrated by (1) the absence of glycosuria in dogs from whom the pancreas has been removed in cases in which there have been subcutaneous grafts; (2) the immediate oncoming of glycosuria in cases in which, after the removal of the abdominal pancreas, the subcutaneous graft has also been removed; (3) the fact that the absence of glycosuria is conditional upon the integrity of the gland implanted, since atrophy of the implantation is followed by glycosuria.—*Rev. Inter. de Brit. Med.*, February 25th, 1893.

McFARLAND (J.) ON THE GIANT CELL OF TUBERCLE.

Conclusions: (1) Giant cells are cellular monstrosities, accidental, not purposeful, resulting from the overgrowth of epithelioid cells.

(2) This overgrowth is brought about by mechanical or chemical irritation caused by the presence of a foreign body, whether a living or dead micro-organism, or some inert particle.

(3) Being the offspring of a cell possessed of amœboid and phagocytic properties, the giant cell possesses them to some degree, as shown by the ingestion of foreign particles.

(4) Whether living, active tubercle bacilli are thus devoured must remain *sub judice.*

(5) The giant cell exerts no special deleterious influence upon the tubercle bacillus, but seems instead to be injured by it, a more observable degeneration occurring in those cells which contain many bacilli than in those which contain none.

(6) The giant cell of tubercle does not differ essentially from giant cells elsewhere, except that it shows a more marked tendency to undergo cheesy degeneration, a fact probably due to the peculiar poisonous products of the bacilli in the tubercle.—*International Medical Magazine*, Nov., 1892, in *Epitome of Medicine* for Jan., 1893.

THE PART PLAYED BY GIANT CELLS IN PHAGOCYTOSIS.

The February number of the *Journal of Pathology and Bacteriology* contains an article by Knud Faber, of Copenhagen, on the "Part played by giant cells in phagocytosis." Faber's conclusions have been reached after experiment upon animals. Using rabbits, he injected subcutaneously a solution of agar-agar which would solidify and remain solid at a temperature as high as 40° C. Twelve injections were made, and the tissues and contained agar examined microscopically, having been removed from the animals at various intervals of times after inoculation. The longest interval allowed to elapse before examination was 80 days, the shortest 1 day.

Giant cells were found to occur constantly after the ninth day among the epithelioid cells of the chronic inflammatory process excited in this way. Their nuclei varied from 2 to 60 or upwards, and were not infrequently collected at the periphery of the cells, as in the giant cells of tubercle. In almost all instances these giant cells contained masses of agar, and, in Faber's own words, "In the agar containing giant cells there now goes on a process which can only be interpreted as a digestion of agar, of which the numerous stages can be followed out by comparing the different cells." The complete digestion of the agar is proven by the use of a mass containing carmine. In some cells, clumps of agar colored by the carmine are visible, whilst in others carmine particles alone can be found—the soluble agar having been removed, but the insoluble carmine remaining. As to the origin of the giant cells in such cases, Faber says that it is easy to see that they originate from epithelioid cells—how, it is difficult to say. Karyomitosis he has not seen, and believes that the nuclei are formed by fragmentations. Fusion of two or more epithelioid cells also seems possible, though certainly it is not so common as direct nuclear division. The writer concludes that "it seems to be a general law that giant cells appear where, in the organism, there takes place (or, at any rate, an attempt is made at) vigorous resorption or destruction of an irritating foreign body, more especially where the object to be resorbed offers a certain resistance."

Tuberculosis in Dogs.

M. Cadiot has examined into the frequency of occurrence of tuberculosis in dogs, and his results are as follows: In 7000 dogs examined at the Alport Veterinary School, 27 were tuberculous, or 1 in 250. The lungs were the organs most frequently affected. It was possible to prove in several cases that the diseased animals had lived with tuberculous people. They were then directly infected, and might, in turn, become sources of infection.—*Le Progrès Médical*, April 1, 1893.

Editorials.

UNIVERSITY PARK HOSPITAL

We publish in this issue a letter from Mr. Mulock, the Vice-Chancellor of the university, to the senate, respecting the present position of the Park Hospital. At a meeting of the senate held on June 2, the Vice-Chancellor gave a full and clear explanation of the history of the various negotiations connected with the scheme. After a prolonged discussion, in which Dr. Burwash, Principal Caven, Chancellor Boyd, Principal Sheraton, and others cordially endorsed the scheme, the following resolution was unanimously carried:

Moved by Dr. Burwash, seconded by Principal Caven: "(1) That this senate recognizes with great satisfaction the fact that in the gift of the late Hon. John Macdonald there is evidence of a disposition to make our university the almoner of a portion of the increasing wealth of our country. We rejoice in the generosity and public spirit which prompt such gifts. We shall ever regard the custody of such benefactions as among our most sacred trusts, and hold ourselves responsible for the faithful observance, to the extent of our ability, of the provisions and conditions under which they are placed in our hands. In the gift for the foundation of the Park Hospital, we recognize a benevolent intention with which this senate is in full sympathy, and which we will use our best endeavors to carry into effect. (2) That the following committee be appointed to confer with the Board of the Park Hospital Trustees and with the trustees of the university concerning the Park Hospital scheme and report to this senate at an early date as to the best method of carrying out its spirit and intention: The Vice-Chancellor, President Loudon, Hon. Chancellor Boyd, Hon. Mr. Justice Maclennan, Rev. Principal Caven, Rev. Principal Sheraton, Rev. Principal Teefy, Mr. George Gooderham, Hon. S. H. Blake, Dr. A. H. Wright, Dr. L. McFarlane, Dr. I. H. Cameron, Mr. George A. Cox, and the mover."

Unfortunately, there has been a certain amount of opposition to the scheme during the past two years, which has been very discouraging to its promoters. We hope, however, that a more intimate acquaintance with the details of the negotiations and transactions connected with the undertaking will remove many doubts and fears that have prevailed in certain quarters. The committee to whom the matter has been referred has commenced work, and will probably have a report prepared for the senate in the near future.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

The last meeting of this young and vigorous society, of which a résumé appears in this issue, was held in Detroit, and is said to have been highly successful. Dr. James F. W. Ross was the only member from Ontario present, and, as he started for North Muskoka on the last evening of the meeting on a holiday trip, we have been unable to get any further details, apart from those furnished in the report as published in this issue. We are pleased to know, however, that Toronto has been chosen as the place for meeting next year. The association has had a standing invitation from Toronto for the last three years, and we are pleased to know that it is now accepted without any dissenting voice.

We have before referred to the fact that this society is American in the broadest sense of the term. Its gates are as freely opened to Canadian obstetricians and gynecologists as to those of the United States. At the Philadelphia meeting in 1890 a Canadian was elected president, there being at that time only two Canadian members, Drs. Wright and Ross. The next year, at the meeting held in New York, the following Canadians were elected to membership: Drs. Cameron, Machell, and Nevitt, of Toronto; Dr. Griffin, of Hamilton; Dr. Howitt, of Guelph; and Dr. Praeger, of Nanaimo, B.C.

Toronto is likely to give the association a hearty welcome. We hope at the same time that many from a distance will come and, by participating in the proceedings, add much interest to the meeting. The date of meeting is to be decided hereafter by the Executive Council.

THE ONTARIO MEDICAL ACT.

Certain proposed changes in the Ontario Medical Act have been freely discussed during the last two years. Much labor in the way of oratory and letter writing has been expended, and not altogether in vain. A bill has been passed by the Ontario Legislature which includes certain rather important amendments. The principal changes will be as follows:

(1) The number of members from territorial divisions will be increased from twelve to seventeen.

(2) The elections will be held once in four, instead of once in five years.

(3) Contested elections will be tried by county judges.

(4) All matters pertaining to fees to be paid by members of the profession towards the expenses of the council will be under the control of

the elected members of the council; *i.e.*, the representatives of the universities and Medical Council will have no voice and no vote regarding the annual fee.

It will be seen that two burning questions have been settled in a way that is likely to give general satisfaction. The territorial representatives will be increased. The decision as to the *annual fee* will be in the hands of the members elected by the profession at large. This arrangement recognizes the principle that the duties of the "school men" will be directed towards matters pertaining to the curriculum and examinations, rather than questions of finance. Why it was necessary thus to curtail their powers is not very clear, but we cannot see that any harm will come from it.

We sincerely hope that the amended act will settle certain of the *vexed* questions for all time. The agitation has not been pleasant in many respects; nor has it, at the same time, been an unmixed evil. The apathy of former years respecting council matters has, for the present at least, disappeared; and the work of our medical legislators will be watched with intelligent and critical interest by their constituents. The next election, which is to be held in 1894, will not be a sleepy one.

Meetings of Medical Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Sixth Annual Meeting, held at Detroit, Michigan, June 1, 2, 3, 1893.

FIRST DAY—JUNE 1ST.

Dr. Henry J. Carstens, of Detroit, delivered an address of welcome, which was responded to by Dr. Geo. H. Rohé, of Baltimore.

Dr. Geo. F. Hurlbert, of St. Louis, read a paper entitled "Intrauterine Asphyxia, with Report of Three Cases." The first case was delivered by natural means, the other two with instrumental assistance. In all, the fœtal heart sounds had been heard distinctly half an hour before delivery, but somewhat weakened in force. In all, at the time of delivery, the appearance presented by the children was one of extreme pallor, with a deepened tinge of the lips and absolute muscular relaxation. The heart beat at the rate of from 40 to 50 per minute. The usual methods of artificial respiration were resorted to, to the extent of introducing a catheter into the trachea. That air did penetrate was evidenced by the slight

crepitus heard during compression of the chest in the expiratory part of the respiratory act. Artificial respiration was maintained until the heart ceased beating; until it ceased to respond to the stimulus presented by the aeration of the blood by the artificial respiration. In none of the cases were there any external evidences of pathologic conditions. The umbilical cords did not exceed the normal limits, but in all three cases blood clots were found occupying the placental surface in more than half of its area. These clots were well formed, intimately attached to the placental tissue, and smooth upon the uterine side. There was nothing to indicate that the clot had been torn from the uterine surface, but rather that placental separation had taken place and the clot had formed and become adherent to the placental tissue. So far as the mothers were concerned, they were in average good health; the first was a primipara, the last two multiparæ. The labors had not been more than twelve hours in duration, and presented no abnormality other than that in the first case the delivery was of the "piston-rod" variety, the head being forced down to the perineum at each pain, and promptly receding to the brim upon the disappearance of the pain. In none of the cases were the pains sustained and vigorous, but rather short and inefficient. In none was chloroform used, and in only one, the first, a rectal injection of twenty grains of chloral was given during the first stage. The element of compression upon the head was not at all pronounced, and would not have attracted attention. In the last two cases there was no pulsation appreciable in the cord; in the first case no record of this fact had been made. The children were separated from the mothers immediately, and in the first a small amount of blood was permitted to escape from the severed end of the cord. Unfortunately, in none of the cases was a *post-mortem* examination obtained. There was only a moderate amount of the amniotic fluid following the birth of each child. In the first two cases dilatation was well advanced before the membranes ruptured; in the last case rupture occurred at the beginning of dilatation.

Dr. Henry J. Carstens, of Detroit, Mich., related a case similar to those reported, and attributed the condition of the child to either large doses of ergot, given by an irresponsible practitioner, or to some disturbance of the centres of respiration.

Dr. John M. Duff, of Pittsburgh, expressed the view that in the case of stillborn children—when apparently before birth they were well, the heart beating properly, etc.—death is due to cerebral hemorrhage. He has seen two *post-mortem* examinations within the past two years corroborative of this view.

Dr. Wm. H. Wenning, of Cincinnati, read a paper on "Placenta Prævia."

He pointed out that the pathology of placenta prævia is far from being definitely settled, owing to the discrepancy between clinical phenomena and anatomic demonstrations. The term was originally employed to express the fact of the after-birth lying before, which might apply to a prolapse of the placenta as well as a primarily low insertion. At the present day it implies a fixation of the placenta to the lower pole of the uterine cavity. Omitting minor points of discussion, the placenta may be said to be prævia when it is inserted wholly or in part to that portion of the lower uterine segment which is subject to distention in pregnancy or labor.

Dr. John Milton Duff, of Pittsburgh, read a paper entitled "The Care of Pregnant Women."

He said that every pregnant woman needs moral and hygienic, if not medical, treatment from the time pregnancy is recognized until convalescence from the lying-in.

Before attending a woman in labor the physician should be familiar with her personal and family history (medically speaking), so that he may note personal or family idiosyncrasies; discover and treat diseased conditions, if present; determine the presentation, if not the position, of the child *in utero*; ascertain the dimensions of the pelvis, the presence of deformities, and the general physical condition; and judge of her ability to withstand the throes of labor—in short, so that he may be able to anticipate any accident or abnormal condition that might arise during labor, and, if possible, to ward it off or treat it promptly, scientifically, and successfully.

Attention was called to strychnine as an adjuvant in the treatment of disorders of pregnancy and as an aid in parturition.

Good results were reported from the systematic administration of doses of from one-thirtieth to one-sixtieth of a grain three times a day for from two to six weeks prior to the expected onset of labor.

Dr. Edmund M. Pond, of Rutland, Vt., read a paper entitled "Dilatation of the Cervix for Dysmenorrhœa," in which he advocated the use of a light Palmer dilator, and packing the uterus when the cervix is elastic; to be repeated, if necessary. In case of failure, a heavy dilator is to be tried. If the cervix is long, conical, and cartilaginous, and dilatation and packing have failed, free division from the internal to the external os, dilatation with a light instrument, and introduction of a stem pessary, to be worn from ten to fourteen days, are to be recommended.

Dr. Geo. S. Peck, of Youngstown, O., read a paper on "Extra-uterine Pregnancy," and reported several interesting cases.

Dr. Eugene Boise, of Grand Rapids, Mich., read a paper on "The Nature of Shock." He concluded that shock is not a paresis, either par-

tial or general, of the vaso-motor nerves, but a hyper-irritation of the entire sympathetic system. The skin is pale and livid, from contraction of the arterioles, in consequence of stimulation of their vaso-motor nerves. The heart's action is rapid from stimulation of its sympathetic nerve supply. There is scanty secretion of urine from contraction of the renal arteries as a result of stimulation of their nerve supply. The skin, though pale and livid, is bathed in perspiration from stimulation of the secretory nerves of the glands. The pupils are dilated from stimulation of their sympathetic nerve supply. The pulse at the wrist, while rapid and small, as would be expected in vaso-motor stimulation, is soft and compressible in consequence of the scanty relaxation or dilatation of the heart. The condition of the heart may not have been actually demonstrated, but may justly be inferred by analogy—reasoning from the action of the uterus under similar conditions. Each contraction of the uterus is normally followed by a period of perfect relaxation. Over-irritation or stimulation of the uterine ganglia or sympathetic nerve-supply causes rapid contraction, with very imperfect relaxation. It is fair to infer the same condition in the heart under similar conditions. Thus the supply of blood to the arteries is scanty, and the blood pressure is low. That the condition of the heart is one of stimulation rather than of paresis may be considered demonstrated by the fact that, in cases of sudden death from severe shock, the heart has been found contracted and empty. Admitting the correctness of this pathology, it follows that the treatment should be conducted on the line of sedation to the sympathetic system, as by amyl nitrite, nitro-glycerin, morphine, and the application of moist heat, *first*, to the surface; *second*, through the long tube in the colon; and, *third*, by transfusion of a saline solution at a comparatively high temperature.

SECOND DAY—JUNE 2ND.

Dr. Walter P. Marston, of Detroit, read a paper entitled "A Contribution to the Pathology of Surgical Diseases of the Gall Bladder."

Dr. James F. W. Ross, of Toronto, followed with a paper on "A Few Practical Notes on the Establishment of Anastomosis between the Gall Bladder and Intestine for Obstruction of the Common Duct, with the Relation of a Case of Obstruction of the Common Duct by a Small Growth." (See page 410 in this issue.)

The president, Dr. L. S. McMurtry, delivered the annual address. His subject was "The Present Position of Pelvic Surgery." After a brief sketch of the history of ovariotomy, it was pointed out that from its beginning the department of pelvic surgery has been promoted and advanced by the labors of a few men. When the new surgery of the peritoneum was introduced, it was seized upon in a reckless way by the multitude, and for a time its very existence was threatened. The splendid results of the

few who were trained for the work by a rigid apprenticeship were made the basis of operations by many wholly unprepared to carry out an exacting and difficult practice. Operations were undertaken upon inadequate and erroneous conceptions of pathologic conditions, and even, indeed, without any definite pathologic data whatever, until in many influential quarters the greatest discredit was thrown upon the work of able and conscientious men who were masters of pelvic pathology and pelvic surgery.

Dr. Rosenwasser, of Cleveland, Ohio, read a paper entitled "What are the Indications for Abdominal Section in Intra-pelvic Hemorrhage?" He offered the following conclusions:

Intra-pelvic hemorrhage may be free into the peritoneal cavity, or primarily or secondarily circumscribed by true or false membranes. Though nearly always due to ruptured ectopic pregnancy, the same surgical principles underlying the treatment of other similar hemorrhages are applicable in intra-pelvic hemorrhage. Such treatment must, therefore, vary according to the conditions dependent on the hemorrhage, and, secondarily, on the original cause of the hemorrhage; hence to prevent free intra-pelvic hemorrhage, abdominal section is indicated in all cases of presumably recognized unruptured tubal pregnancy, either as prophylactic, or for the purpose of removing pathologic conditions not otherwise curable. In all cases of free intra-pelvic hemorrhage, from whatever cause, early or immediate section is the only safe means of averting a fatal termination. In cases of circumscribed intra-pelvic hemorrhage, section is indicated for the removal of increasing blood clot and *débris*, whether due to recurrent bleeding or continued growth of a fœtus; and whenever the symptoms indicate decomposition of the blood clot. Lastly, section is also indicated whenever the pressure of the circumscribed blood mass causes obstruction of the bowel.

Dr. H. W. Longyear, of Detroit, read a paper entitled "A Plea for Better Surgery in the Closure of the Abdominal Incision." From investigation and observation, he has concluded that suppuration of the wound made in abdominal incision can occur with either method, but is much less liable to take place with the buried suture, if properly placed and sealed, than with the *en masse* suture, as, in the latter, pyogenic germs may enter the wound *via* the sutures or their sinuses. In fact, suppuration is often the result of the dragging in of germs attending the removal of the *en masse* suture.

Very thin or very fat walls lead to the development of hernia after abdominal incision, by preventing the accurate coaptation of the aponeuroses, which could only take place with the *en masse* suture, and would be prevented by the use of the buried method. The extra-peritoneal treatment of the tump in either case is bad, and will some day be considered

unsurgical; but if the fascia is brought closely around the stump and held there by the buried suture until it forms a solid, firm ring around it, the viscera will be less liable to burst through it than if sutured but for nine or ten days, and afterward wedged apart, before firm cicatrization has had time to take place. When the aponeuroses form solid union with the buried suture no bandage will be required, as they are as strong as before incision. Imperfect closure is very much less liable to occur when the exact method of the buried suture is used than with the "guess" method of the *en masse* stitch. In one it is known that the fascia is approximated, while in the other there is less certainty. Long incisions are always to be deprecated, but if healed by first intention after the use of the buried suture hernia cannot occur, as by this method the chance of the interposition of other tissues between the apposed edges of the fascia is obviated. The straining of vomiting resulting from the nausea of prolonged anæsthesia need not be feared when the buried suture is used, as the fascia cannot be separated with any such force when united with a strong suture. Too early rising is only to be feared after removal of sutures, and as the buried suture remains indefinitely to exert its restraining force this cause has to do only with the *en masse* suture.

Drainage will be required with both methods of suture, but with the increasing tendency to use small tubes the danger is becoming much less. Large gauze drains should be avoided on this account. The buried suture, however, properly protected from the drainage opening by one *en masse* stitch, will usually insure solid union of the fascia close to the tube, and thus give the best result. Failure to take up the aponeurosis in the suture can only occur with the *en masse* stitch. Too early removal of sutures can only occur with the *en masse* stitch, and is obviated by using the buried suture. The use of soft catgut is permissible only when the safe tendon suture, or even silkworm gut or silver wire, cannot be obtained.

If the patient becomes too fat, the cicatrix of the aponeurosis will not separate if reinforced with a strong tendon suture. Non-union of muscles is not likely to occur if their sheaths are properly approximated and held in place by the buried suture. If cut transversely, a fine tendon will insure their union. The use of the interrupted suture is easily obviated by simply using the buried animal suture in the closure of all abdominal incisions.

Dr. C. A. L. Reed, of Cincinnati, contributed a paper entitled "The Management of the Abdominal Incision."

He said that the occurrence of suppuration and of ventral hernia in the line of the abdominal incision pointed to some defect of technique or management. In preparation, it was recommended that, first, an application of oil be made, followed by ether, with some strong alkali; then

cleansing with clear water, followed by the persistent application, for over half an hour preceding the operation, of a strong solution of mercuric chloride. The incision should be made carefully in the median line through the linea alba, and the peritoneum should immediately be laid open smoothly with the knife. In closure it was recommended that an interrupted suture of silkworm gut be passed from within outward on both sides entirely through the tissues, but so passed that it enters the wall of the peritoneum near the margin, dips deeply into the median tissue, and is brought out near the margin of the integument. The sutures should not be tied too tightly, and with the knot to one side of the incision. The wound should be dressed with aristol, boric acid, and a bandage carefully applied. When the sutures are removed a firmly-fitting adhesive strip should be applied that will not cause compression of the incision, with a consequent tendency to separate the internal margin.

THIRD DAY—JUNE 3RD.

Dr. John C. Sexton, of Rushville, Ind., contributed a paper upon "The Causation and Prevention of Central Laceration of the Perineum."

He pointed out the rarity of the accident, as a result of the many almost perfect methods of prevention. Among the deformities and irregularities of formation that tend to cause the accident are defective or abnormal development of the perineum or pubes, and anomalies of the expellant forces and positions of the vertex. The use of chloroform to a degree suspending the action of the uterine muscles was advised against as dangerous. Resort to episiotomy was especially cautioned against. It was insisted that timely and skilful use of the forceps could prevent central laceration of the perineum.

Dr. X. O. Werder, of Pittsburgh, contributed a paper entitled "Pregnancy following a Partial Suprapubic Hysterectomy, complicated by Hemorrhage through the Abdominal Cicatrix."

The interesting points of the case reported were:

The discharge of the menstrual flow through a small fistulous opening remaining after a partial supra-vaginal hysterectomy; and the occurrence of pregnancy eight or nine weeks after the operation in a woman previously sterile.

The pregnancy terminated at about term in the delivery of a healthy, though poorly developed child, in spite of a firm and unyielding fixation of the uterus to the abdominal wall, and in spite of frequent and profuse hemorrhage from the placental site through the sinus opening in the lower angle of the abdominal cicatrix.

Dr. George H. Rohé, of Catonsville, Md., read a paper entitled "Further Observations on the Relation of Pelvic Disease and Psychical Disturbances in Women." He gave the further history of eighteen cases

reported last year in which the uterine appendages of insane women were removed for pelvic disease. Two additional cases have been operated upon. In both, the ovaries were cystic. Of these twenty cases, there was physical recovery from the operation, with improvement of the general health in eighteen; death in two; absolute mental recovery and discharge from the hospital in four; complete physical and partial mental recovery in three; decided mental improvement, but not sufficient to justify discharge from the hospital, in seven. In three the mental condition remained unchanged, but the physical condition was decidedly better. In one case the patient was removed from the hospital by friends a few weeks after operation and placed in another institution, where she is reported to be worse mentally. A case of melancholia with suicidal tendencies was also reported in which a badly-lacerated cervix was repaired, with complete and rapid mental recovery and discharge.

The following officers were elected:

President, Dr. George H. Rohé, of Catonsville, Md.; first vice-president, Dr. Walter P. Manton, of Detroit, Mich.; second vice-president, Dr. George F. Hurlbert, of St. Louis, Mo.; secretary, Dr. William Warren Potter, of Buffalo, N.Y.; treasurer, Dr. X. O. Werder, of Pittsburgh, Pa.

It was decided to hold the next meeting at Toronto, Canada, at a date to be fixed on by the Executive Council.—*Medical News.*

Correspondence.

PARK HOSPITAL.

To the Senate of the University of Toronto:

As president of the Board of Trustees of the Park Hospital, I have been requested by the board to address you in regard to the present position of the hospital.

As you are doubtless aware, the Wycliffe College property was purchased for $60,000, the donation of $40,000 from Hon. John Macdonald having been applied on account of purchase money, the unpaid portion amounting to $20,000 being secured by mortgage on the property, payable at the end of five years, and bearing interest at the rate of six per centum per annum, payable half-yearly in the meantime. This mortgage is held by the Canada Life Assurance Company, who also hold as collateral security the bond of eight of the trustees for payment of the interest till the principal is due. The half-year's interest due last November was not paid,

and the company allowed payment thereof to be deferred till May. Thus a year's interest became due on or about the 1st instant, and the company require payment this month, otherwise threaten proceedings. Some of the sureties for this interest are quite willing to pay their rateable proportion; others, it is said, are not. The adverse criticism to which the scheme has been subject, and the belief that such criticism will be continued if any attempt be made to advance the scheme, has paralyzed the movement. Some of the many influential and wealthy citizens who identified themselves with it have withdrawn from all connection, whilst nearly all of the remainder desire to do so. Several persons who intended to give substantial aid have been discouraged in such intentions, and some at least have entirely altered the same. Thus the scheme, once full of promise, has been almost wrecked; the only thing required to complete such result being that the company sell the property under their mortgage.

The company may adopt either of the two courses, namely, may collect interest on their mortgage from the sureties until maturity of the mortgage, and then proceed against the property for principal money, or may now proceed against the property itself by bringing the same to a sale or foreclosure. When this stage is reached there will disappear, I fear, the last chance for the university having an hospital under its control. The establishment of such an institution must depend, I think, upon private charity. If Mr. Macdonald's generous act becomes abortive, no one is likely to again bring such an opportunity within the reach of the university. The Park Hospital scheme, if carried out, will in time, I believe, afford to the University Medical Faculty hospital facilities at least equal to those supplied to McGill by the Victoria Hospital, in which already some professional appointments have been made. Without the hospital our university might find the prestige of its Medical Faculty eclipsed by the attractions of the more fortunate McGill. Thereafter our Medical Faculty will be maintained at great disadvantage; in fact, it may be a question whether it will be able, in the long run, to survive so unequal a contest.

These views, strongly as I entertain them myself, I present with much diffidence, not knowing whether they are shared in by the medical gentlemen connected with the university. Whether it is possible for the senate to avert the threatened destruction of the scheme I cannot say, though I think that even yet it might be saved were the senate to manifest some sympathy with it. It appears to me reasonable to assume that no one is likely to contribute of his means towards the project intended largely for the university's benefit, but which does not receive the senate's endorsement. Personally, I have no desire to continue the thankless task of struggling against opposition to place the scheme upon a working basis; but feeling beyond all doubt that it is capable of great advantage to the

university, I am unwilling to withdraw my support from it so long as there is any chance of its being proceeded with. At the same time I desire the senate to understand that, though willing to continue in such connection, I would infinitely prefer being relieved from any such further duty, and shall cheerfully make way for another to take my place.

I remain,

Your obedient servant,

Toronto, May 25th, 1893. (Signed) W. MULOCK.

BRITISH COLUMBIA MEDICAL COUNCIL ELECTION.

To Dr. G. L. Milne, Registrar of British Columbia Medical Council:

SIR,—The following is extracted from a letter received by one of the undersigned from a practitioner in the province:

"I am in receipt of your letter of the 29th ult., asking me for my vote in the coming election of members to the Medical Council. I have received from Dr. Milne under one cover a receipt for the payment of this year's dues to March, 1893, a voting paper, and a list of candidates in the coming election to the Medical Council, to be held on the 24th inst. The list does not contain your name or that of a certain other practitioner who has recently solicited my vote for the same election. I presume there must be some arrangement of balloting among the candidates to determine who is to retire from the contest. As there is no time to ascertain as to this, and record my vote before the election, I have made a selection from the list submitted to me. I will add that the list had nine names, and that the only writing the document has on it besides the names is the sentence 'only vote for seven.'"

It is readily seen from the above that this gentleman considered the "list of candidates" sent by you to him to be an *official* list of those from whom a selection had to be made. This was the direct outcome of your sending it to him. Whether you intended to create this idea or not is, of course, best known to yourself. It must be well known to you that every qualified practitioner is in one sense a candidate for election, for many men have received votes at the several elections held who have never expressed their desire to serve on the council, yet had they been elected would not have declined to act. But your furnishing such a list has in this instance (and may have done so in many others) had the effect of leading this practitioner into the belief that only those named by you were eligible for election. Had this list been sent by you as a "ticket" in an official manner, there would have been less to find fault with; but inasmuch as you sent it under the same cover as official documents, the whole was deemed official, and treated as such.

Moreover, it is our opinion that it would not have been in the best taste under any conditions for the *registrar* to issue such a list. It must have been apparent to you that you would be giving a false air of authority to an action that is certainly not one of the duties of the *registrar*, as laid down in the Medical Act. We feel we would be lacking in our duty to the profession were we to neglect to give this expression of our dissatisfaction at the line of action taken by you, which we consider deserving of a strong reprimand, not only from us, but from the council, and the whole profession in the province; for the abuse of office, or even the appearance of it, is not one of the features that should characterize the registrar of the Medical Council.

(Signed) E. A. PRAEGER,
MARK S. WADE.

P.S.—It is our intention, to which we retain the right, to publish this letter.

May 6th, 1893.

Medical Items.

DR. C. A. TEMPLE has commenced practice on Spadina Avenue, Toronto.

DR. ROBERT WILSON, formerly of Morden, Man., died at Vancouver, B.C., May 25.

DR. J. H. COLLINS has returned from Europe, and will shortly locate in Chicago.

DR. HUGH WATT, M.P., Cariboo, B.C., (Vict. '80) was in Toronto for a few days in May.

DR. FRED. A. ROSEBRUGH (Tor. '92) is at present with Mr. Lawson Tait at Birmingham.

DR. W. OLDRIGHT, Toronto, spent a couple of weeks in Chicago, going there about June 1st.

DR. J. E. PICKARD, of Virginia, Nev., was married to Miss Collier, of Point Edward, Ont., May 24.

DR. P. P. Burrows, Lindsay, and Dr. J. T. McKenzie, Trenton, have been appointed associate coroners.

DR. W. H. GROVES, of Burnhamthorpe, has gone to New York to spend some months in the Polyclinic.

DR. DANIEL CLARK, of Toronto, has been elected vice-president of the Medico Legal Society of New York.

DR. BRUCE RIORDAN, of Toronto, attended the meeting of American Railway Surgeons, held at Omaha.

DR. G. R. MCDONAGH, of Toronto, left home, June 14, for an extended trip, and will be absent from his office for two months.

DRS. T. G. RODDICK and JAS. STEWART have been appointed on the active staff of the Royal Victoria Hospital, Montreal.

DR. JOHN A. SCOTT, of Maxwell, Ont., went to Chicago, June 10th, to take a post-graduate course, and also visit the World's Fair.

DRS. G. F. MCKEOUGH and R. N. BRAY were elected president and secretary of the Chatham Medical Society at its last meeting.

DR. HAROLD C. PARSONS, late of the Toronto General Hospital house staff, has gone to Mount Airy, Md., to take charge of the Garret-Hospital.

DR. W. H. B. AIKINS has been appointed physician on the staff of the Toronto General Hospital, in the place of Dr. Burritt, placed on the consulting staff.

DR. PRICE BROWN, who has been in New York attending the annual meeting of the American Laryngological Association, returned to this a city few days ago.

AT a regular meeting of the senate of the University of Toronto, held May 26th, Drs. B. E. McKenzie and Frederick Winnett were appointed demonstrators of anatomy.

DR. A. F. MAVETY, who practised at Kingston for two years after graduating in 1890, has been appointed professor of the practice of medicine in the Toledo (Ohio) Medical College.

DR. J. H. MCCASEY, of Concordia, Kansas, who was elected last April to the position of medical superintendent of the Topeka State Asylum, of Kansas, spent a few days in Toronto early in June.

A SAD accident happened at Cataraqui Bay, near Morrisburg, May 21, whereby Dr. Hector Macdonald, one of this year's graduates from Queen's University, lost his life through drowning from a sail-boat upset.

DR. GEORGE H. ROHÉ, of Catonsville, Md., superintendent of the Maryland Hospital for Insane, was elected president of the Medical and Surgical Faculty of Maryland at the recent annual meeting, held April 25-28.

THE following are the new house staff of the Toronto General Hospital for the coming year: Drs. Harvie, Fulcher, Touch, and Peters, of the Medical Faculty of Toronto University; and Drs. Glaister, Bird, Burrows, and Tomlinson, of Trinity Medical School.

AT the last meeting of the Toronto Medical Society the following officers were elected: President, Dr. J. F. W. Ross; 1st vice-president, Dr. W. Greig; 2nd vice-president, Dr. J. Spence; recording secretary, Dr. J. N. Brown; corresponding secretary, Dr. E. H. Adams; treasurer, Dr. G. A. Carveth; members of the council, Drs. H. J. Machell, A. B. Atherton, and G. Gordon.

THE following officers were elected at the last meeting of the Toronto Clinical Society: President Dr. L. MacFarlane; vice-president, Dr. G. S. Ryerson; recording secretary, Dr. Edmund E. King; corresponding secretary, W. H. B. Aikins; treasurer, Dr. A. B. Atherton; members of executive, Drs. A. A. Macdonald, A. H. Wright, Allan Baines, F. L. Grasett, and A. J. Johnson.

AT the last meeting of the American Gynecological Society the following were elected to office: President, Dr. Lusk, of New York; vice-presidents, Dr. S. C. Busey, of Washington, and Dr. Bache Emmet, of New York; treasurer, Dr. Matthew D. Mann, of Buffalo; members of council, Dr. Chadwick, of Cleveland, Dr. Reynolds, of Boston, and Dr. Baer, of Philadelphia.

THE appointment of Dr. George M. Sternberg, as Surgeon-General of the United States Army, is gazetted. Dr. Sternberg was fifteenth on the roster, but in the army to the south of us that does not count. There is one thing sure, that there is no more representative man, no more scientific investigator, than Dr. Sternberg on the army staff; but it can hardly be called just to pass over the so many of his seniors.

COUNCIL EXAMINATIONS, 1893.—The following speaks for itself: *Primary:* Passed, 112 candidates; of whom 63 were students of the University Medical Faculty. 52 per cent. of all the students passed, while 73 per cent. of the University Faculty did so. *Final:* Passed, 85; of whom 42 were students in the University Medical Faculty. In this examination 73 per cent. of all the students passed, while 85 per cent. of the students of the University Medical Faculty did so.

AT the annual meeting of the Toronto Medical Society, held May 25, the following officers were elected: President, Dr. James F. W. Ross; 1st vice-president, Dr. W. J. Greig; 2nd vice-president, Dr. J. Spence; recording secretary, Dr. J. N. E. Brown; corresponding secretary, Dr. E. H. Adams; treasurer, Dr. G. A. Carveth; council, Drs. Machell, Atherton, and G. Gordon. At the same meeting the retiring president, Dr. N. A. Powell, presented the society with a handsome portrait of Dr. Oliver Wendell Holmes, of Boston.

MEDICAL ALUMNI'S OFFICERS.—The Medical Alumni Society of Toronto University has elected these officers: Dr. E. E. Kitchen, St. George, president; Drs. A. A. Macdonald, L. McFarlane, E. J. Barrick, John Ferguson, of Toronto, and F. A. Eccles, of London, vice-presidents; Dr. Bruce Riordan, treasurer; Dr. W. Harley Smith, secretary; Drs. J. D. Thorburn and Edmund E. King, auditors; Drs. Adam H. Wright, B. Spencer, Edmund E. King, J. D. Thorburn, W. H. B. Aikins, James McCallum, C. J. Hastings, George Peters, E. Herbert Adams, and George Carveth, members of the council.

DEATH OF MR. MARCUS BECK.—We deeply regret to announce the death of Mr. Marcus Beck, Professor of Surgery at University College, London, which took place at Isleworth on Sunday, May 21st. Though it was known to most of those who were well acquainted with him that he had for many years been the subject of diabetes, the end came with a suddenness which made the shock of his loss all the more grievous to the members of his family and to his friends. The immediate cause of his death was diabetic coma supervening on influenza. He was forty-nine years of age. Marcus Beck was not only an accomplished and thoroughly scientific surgeon, but a man of wide and varied culture, and of singular personal charm. In him the profession has lost one of its ablest and most high-minded members.—*British Medical Journal.*

HEALTH OFFICERS' CONVENTION.—The annual meeting of the Association of Health Officers of Ontario will he held at Guelph, Ont., on June 27 and 28. The association is composed of medical health officers, engineers, members of local boards of health, and associate members, consisting of all citizens who may wish to take part in the discussions. Special rates of railway fares and hotel expenses will be arranged, and all delegates are requested to communicate with Dr. Bryce, secretary of the Provincial Board of Health, as soon as possible. Among the papers to be discussed are the following by Toronto well-known physicians: "Dangers of a smallpox epidemic and necessity of a general vaccination," by Dr. Bryce; "Diphtheria epidemics and how principally propagated," by Dr. Hodgetts, Toronto; "Toronto water supply," Dr. J. J. Cassidy, Toronto; "Diseases in Canadian cattle," J. J. McKenzie, B.A., Toronto; "The epidemological aspects of outbreaks of specific diarrhœa," by Dr. Norman Walker, Toronto; "Some systems of sewerage and sewage disposal that are available for Ontario cities," A. Macdougall, C.E., Toronto.—*Toronto World.*

RESULTS OF THE FINAL EXAMINATIONS OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.—The following candidates have passed the final examinations of the College, May, 1893: Honors—H. C. Bird, Barrie. Passed—J. H. Austin, Brampton; R. D. Alway, Grimsby; F. J. Ball, Rugby; W. F. Brown, Medina; W. J. Burrows, Lambeth; J. Bowie, Embro; R. Brodie, Claremont; Minnie M. Brander, Priceville; F. Blanchard, Sutton; R. F. Bruce, New Lathrop, Mich.; W. Chambers, Toronto; L. H, Campbell, Bradford; N. Campbell, Cookstown; T. W. Carlaw, Warkworth; R. M. Calder, Grimsby; J. E. Countryman, Tweed; J. K. Creighton, Nilestown; J. H. Duncan, Emery; R. E. Darling, Warkworth; T. Douglas, Harriston; W. Doan, New Sarum; W. Elliott, Mitchell; T. B. Fletcher, St. Thomas; J. K. M. Gordon, St. Helens; W. Glaister, Crosshill; J. L. Gibson, Cherry Valley; E. E. Harvey, Newry; J. R. Hopkins, Stony Creek; J. N. Harvie, Crillia; H. K. Hyndman, Exeter; J. A. Henderson, Orangeville; H. J. James, Clayton; F. H. Koyle, Brockville; W. H. Lambert, Arnprior; J. E. Lehman, Orillia; C. J. Laird, Guelph; J. A. Locke, Brimston Corners; A. Lockhart, Sydenham; F. Martin, Erin; R. E. Macdonald, Stratford; P. J. Motoney, Ennismore; W. S. Macdonald, London; H. F. Mackendrick, Galt; R. S. Mines, Kingston; J. E. Murphy, Newboro; J. R. Mackenzie, Toronto; W. F. Meikle, Cowansville; D. Marr, Ridgetown; J. Moore, Bath, Mich.; W. J. Mackenzie, Warwick; J. H. McGarry, Niagara Falls; G. McGrath, Campbellford; K. McLennan, Dunvegan; A. H. Nicholl, Listowel; W. E. Olmstead, Ancaster; J. B. Peters, Toronto; H. D. Pease, Toronto; F. W. Perritte, Toronto; J. M. Rogers, Toronto; J. T. Robinson, Collingwood; A. F. Rykert, St. Catharines; R. F. Rorke, St. Thomas; J. W. Smuck, Renforth; T. E. South, St. George; H. H. Sanderson, Sparta; E. H. Stafford, Chicago; J. C. Stinson, Brantford; S. G. Storey, Cedar Springs; J. H. Shouldice, Hamilton; R. G. Smith, Perth; A. B. Singleton, Perth; A. B. Singleton, Newboro; P. D. Tyerman, Toronto; C. J. Taylor, Toronto; E. Tomlinson, Brantford; C. W. Thompson, St. Marys; W. H. Tufford, Toronto; A. H. F. Tegart, Schomberg; H. A. Wardell, Dundas; J. J. Williams, Tottenham; J. A. G. Wilson, Warkworth; W. F. B. Wakefield, Thorold; D. D. Wickson, Toronto.

OBITUARY.

O. S. WINSTANLEY, M.R.C.S. ENG.—Dr. Winstanley was for many years one of the best known and most highly respected practitioners of Toronto. On account of poor health he left Canada, and lived for several years at Santa Barbara, in Southern California.

MEDICAL EXAMINATIONS.

TRINITY UNIVERSITY.

Final Examinations for M.D.C.M.—W. Glaister, T. Douglas, J. C. Stinson, E. Tomlinson, R. E. Macdonald, J. T. Robinson, C. H. Bird, F. J. Burrows, D. J. Dunn, R. Brodie, F. W. Mulligan, J. K. M. Gordon, P. J. Moloney, W. J. Ross, R. J. Corbett, J. A. G. Wilson, J. H. McGarry, R. King, W. A. Thomson, N. Campbell, J. H. Austin, W. F. Wakefield, J. H. Hudson, F. G. E. Pearson, W. T. Arnott, A. F. Rykert, J. J. P. Armstrong, C. W. Beemer, W. Doan, H. McKendrick, T. W. Carlaw, J. E. King, W. W. Andrus and J. R. Roseborough (*æq.*), J. B. Ferguson and J. M. Rogers (*æq.*), Miss M. M. Brander, F. J. Ball, C. Carter, L. Lapp, R. J. Teeter, R. S. Dowd, J. R. Bingham, D. D. Wickson, C. J. Taylor, W. H. P. Tufford, H. H. Alger, I. Bowie, R. E. Darling, C. J. Laird, J. H. Duncan, R. D. Alway, S. H. Large, A. B. Singleton, J. R. Hopkins, Miss E. J. Ryan.

TRINITY MEDICAL COLLEGE.

Final Fellowship Degree.—Charles Harold Bird, John Coplin Stinson, Wm. Glaister, Edward Tomlinson, Francis James Burrows, Fred. Wm. Mulligan, Thomas Douglas, Ralph Brodie, David J. Dunn, Robert Elgie Mac-

donald, J. T. Robinson, William A. Thomson, Warren Doan, Innes T. Bowie, R. T. Corbett, J. R. Roseborough, R. J. Teeter, J. A. G. Wilson, R. A. S. Dowd, T. W. Carlaw, W. J. Arnott, J. J. P. Armstrong, H. H. Alger, J. R. Bingham, C. Carter, N. Campbell, R. E. Darling, J. B. Ferguson, J. E. King, Robert King, S. H. Large, W. J. Ross, D. D. Wickson, J. H. Duncan, A. B. Singleton.

Dr. Sheard's prize in Physiology—F. G. Wallbridge. Dr. Ryerson's prize in Applied Anatomy—F. J. Burrows.

Scholarships.—The 1st first year's scholarship, $50, J. R. McRae; the 2nd first year's scholarship, $30, J. H. Oliver; the 3rd first year's scholarship, $20, A. V. Hart and W. H. Weir (*æq.*); the 1st second year's scholarship, $50, J. C. Hutchison; the 2nd second year's scholarship, $30, Frederick Parker.

Medals.—The second Trinity silver medal, William Glaister; the first Trinity silver medal, John Coplin Stinson; the Trinity gold medal, Charles Harold Bird.

TORONTO UNIVERSITY.

Final Examinations for M.D.—H. A. Bruce, M.B.; C. J. McNamara, M.B.

Degree of M.B.—R. D. Alway, F. J. Ball, C. W. Beemer, F. Blanchard, W. F. Brown, R. M. Calder, T. Coleman, B.A., G. S. Glassco, F. E. Grant, J. R. Hopkins, C. J. Laird, W. H. Lambert, W. J. McKenzie, J. A. McMillan, B.A., J. A. McNaughton, F. Martin, W. E. Olmstead, F. G. E. Pearson, J. M. Rogers, A. F. Rykert, B.A., H. H. Sanderson, J. H. Shouldice, E. H. Stafford, H. A. Wardell, J. A. Armstrong, J. H. Austin, W. Chambers, W. Elliott, T. B. Futcher, E. E. Harvey, J. N. Harvey, B.A., V. W. Hill, J. E. Lehmann, D. McAlpine, J. H. McGarry, H. F. McKendrick, J. R. Mackenzie, D. Marr, A. H. Nichol, B.A., W. F. Park, H. D. Pease, J. B. Peters, F. W. Pirritte, T. E. South, S. G. Story, C. J. Taylor, C. W. Thompson, P. D. Tyerman, W. F. B. Wakefield, J. J. Williams.

MEDALS AND SCHOLARSHIPS.

Faculty Medals.—Gold, J. N. Harvey, B.A.; silver, 1st, T. E. South; 2nd, W. Elliott; 3rd, T. B. Futcher. E. E. Harvey, equal, subject to the granting of a second medal by the Faculty of Medicine.

Scholarships.—Third year, 1st, W. J. McCollum; 2nd, J. H. Bull. Second year, 1st, T. W. G. McKay; 2nd, J. R. Lancaster. First year, 1st, W. Goldie; 2nd, E. L. Roberts.

M'GILL UNIVERSITY.

E. D. Aylen, H. W. Blunt, W. E. Bostwick, J. A. Brown, J. D. Cameron, R. W. Carroll, A. D. Coburn, M. A. Cooper, W. E. Deeks, B.A., T. A. Dewar, G. F. Dewar, Edward DuVernet, G. W. Fleming, H. M. Goff, B.A., F. B. Gunter, B.A., M. Haight, M. K. Hall, J. A. Henderson, R. W. Jakes, W. H. Jamieson, J. W. Lawrence, W. Lindsay, A. D. McArthur, R. B. McKay, B.A., S. R. McKenzie, K. McLennan, W. McMillan, R. F. McMorrine, C. H. Masten, R. Matheson, W. C. Mills, J. M. Moore, R. H. Phillimore, R. F. Rorke, J. W. A. Seguin, J. W. Scane, E. J. Semple, B.A., G. F. Shaw, T. P. Shaw, J. E. Tomkins, J. L. Walker, J. T. Whyte, B.A., R. Wilson, C. A. Yearwood, B.A., H. B. Yates, B.A.

Mr. T. W. Hewitson has passed all the examinations required for the degree of M.D., C.M., but is not of age. He will receive his degree on attaining his majority.

QUEEN'S UNIVERSITY.

Final Examination for M.D.—G. H. Austin, A. N. Baker, B. F. Black, J. E. Countryman, J. H. Cormack, J. J. Gibson, J. L. Gibson, G. C. Giles, H. J. James, N. P. Joiner, J. A. Locke, Miss M. Leavitt, R. S. Minnes, M.A., W. G. Malcolm, J. E. Murphy, H. McDonnell, G. McGrath, M. J. Neville, A. C. Robertson, F. S. Ruttan, Miss C. Ryae, R. G. Smith, W. Walkinshaw.