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Original Communications.

THE SURGICAL TREATMENT OF GENERAL PURULENT PERITONITIS.*

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Many years ago a Mr. Bates, of Sudbury, England, drew the attention of the medical profession to the use of large and frequently repeated doses of opium and the rigid adherence to the horizontal position in the treatment of acute general peritonitis. In a pamphlet issued he related, in an unpretending manner, a number of cases of this disease treated as above mentioned. This pamphlet was subsequently brought to the attention of Dr. Watson, the writer of a celebrated work on Medicine, published about the year 1848.

The principle adopted by Bates was that of keeping the intestines at rest. In discussing the treatment of acute peritonitis Watson says that he himself used the two grand remedies for inflammation, namely, blood-letting and mercury, and further, that these remedies were especially beneficial in treating the adhesive inflammation of serous membranes. He also believed that the abdomen should be covered with leeches for the topical extraction of blood.

The schools were then, as now, divided as to the desirability of administering purgatives in the treatment of peritonitis. The opium treatment of Bates was then brought prominently before the profession by Dr. Alonzo Clark, who died in 1887, in New York City, aged eighty-one years. For fifty years he had been actively engaged in the practice of his profession. Graduating from the College of Physicians and Surgeons of New York, he was soon appointed Professor of Pathology in the Vermont Medical College, and subsequently became Professor of Physiology and Pathology in the New York College of Physicians and Surgeons. He never attempted surgical

* at Meeting of Ontario Medical Association, June, 1903.

work, but was at one time the foremost pathologist on this continent. To Dr. Clarke has been given a large part of the credit for promulgating the opium treatment of peritonitis. It was said of him that if he has done nothing more than to put forward his views on this subject he would be entitled to the lasting gratitude of mankind. The dose of opium that he administered was not fixed, but depended upon the needs of each individual case, all the time bearing in mind the important fact that cases of acute peritonitis will, as a rule, bear very massive doses of this drug.

Among the most frequent causes of peritonitis is some break in the chain of continuity from the stomach to the rectum and in such cases purgatives can only do harm by causing the pouring out of more of the contents of the digestive tract into the peritoneal cavity.

After abdominal surgery had made some considerable progress it was found that numbers of patients died from post-operative peritonitis and a crusade was instituted against the use of opium in the treatment of this disease. Many surgeons were satisfied in their own minds that free evacuation of the bowels after operation within the abdomen produced rapid convalescence. From this standpoint it was argued that purgation and not obstipation was the proper treatment for peritonitis. We know now that many of these patients who were thus rapidly relieved were not suffering from true peritonitis, but from a certain amount of peritoneal irritation and congestion and they would have made an easy convalescence without the use of any drugs.

Two great advances were made, the one largely through the work of Howard Kelly, of Baltimore, and the other through the work of Prof. Mikulicz, of Breslau. In the first instance drainage of the peritoneal cavity was done away with and this source of post-operative contamination from without was removed from the surgical arena. In the second instance Prof. Mikulicz taught us how to isolate irremovable infective areas by the protective agency of intraperitoneal gauze packing.

Those of us who have been doing abdominal surgery for years now see less not only of peritonitis but of the peritoneal irritation above mentioned than we saw in times past, owing to the two changes in treatment above mentioned, and also to the fact that our aseptic technique is now more thoroughly carried out.

All abdominal operators have unfortunately seen patients in whom purgatives have been administered for the relief of post-operative peritonitis, become more and more distended with tympanitis and succumb finally to the disease without having a single free evacuation of the bowels. On the other hand, abdominal operators have seen such patients die after they have

been freely purged. It has been stated that the results obtained by surgeons in the use of saline purgatives in the treatment of peritonitis have been startlingly brilliant. I am not so sure that this statement is correct. It is not possible to say that those who recovered after an attack of genuine post-operative peritonitis did so as a consequence of the administration of purgatives. I do not believe that the use of saline purgatives will prevent peritonitis after operation. The free movement of the bowels at an early date after the abdomen has been opened is not an indication that peritonitis has been prevented, but is rather an indicator that peritonitis does not exist, and that, as a consequence, a movement of the bowels can be easily obtained. When such a free evacuation of the bowels has been procured the surgeon's mind is relieved and the patient is much more comfortable.

I have not found opium, administered after operation, cause the harm that has been attributed to it by some. I always give sufficient opium to keep the patient from suffering severe pain in order that the vital forces may not be impaired.

In looking over a subject to present to the Toronto Medical Society I thought it would be interesting, not only to myself, but to others, to go back over my surgical experience with general purulent peritonitis. I divided all the abdominal operations performed by me into groups of 500 and in each group selected the cases of general purulent peritonitis, and made a comparative statement of the results.

	Recov.	Deaths.	Total.
General Purulent Peritonitis, caused by --			
Perforation of appendix.....	14	21	35
Perforation of uterus (attempted abortion).....	0	2	2
Gonorrhœa.....	1	1	2
Ruptured pyosalpinx.....	0	2	2
Ruptured pus pocket (appendiceal).....	0	2	2
Perforation of intestine.....	1	0	1
Curettagè of uterus.....	0	1	1
Gangrene of rectum.....	0	1	1
Cause not made out.....	0	1	1
	16	31	47
Cases sponged out and drained.....	0	1	1
Cases sponged out and not drained.....	1	2	3
Cases flushed with water and drained.....	3	27	30
Cases flushed with water and not drained.....	2	0	2
Cases flushed with normal saline and drained....	6	1	7
Cases flushed with normal saline and not drained.	4	0	4
	16	31	47
Of the cases operated on I find --			
Natural diarrhœa.....	2	0	2
Purgatives given.....	3	10	13
Opium and purgatives.....	2	1	3
Opium alone.....	8	6	14
No record of exact treatment.....	1	14	15
	16	31	47

Forty-seven cases of general peritonitis were operated upon, thirty-one died and sixteen recovered. I refer only to cases in which pus was distributed all over the abdominal cavity, in which the intestines were reddened and the patients were in an extremely dangerous and even desperate condition. In the first series, fifteen cases were operated on, thirteen died and two recovered, a percentage of recoveries of only thirteen. In the second series twenty-one cases were operated on, fifteen died and six recovered, a percentage of recoveries of twenty-nine. In the third series (not as yet completed) eleven cases were operated on, three died and eight recovered, a percentage of recoveries of seventy-three. The last death, I may say, occurred but recently, tending to reduce the percentage of recoveries in the last series.

In the first series the intraperitoneal wash used was plain water, and the subsequent treatment adopted was the administration of purgatives. In the second series some were washed with plain water and others were washed with normal saline solution, and in some cases purgatives were administered, and in others opium was given. In the third series the intraperitoneal wash used was normal saline solution and opium was administered in large doses whenever it was supposed to be indicated.

It is my intention to speak of the treatment adopted in the last series. The method adopted is as follows: The abdomen is opened by an incision large enough to insure rapid and thorough work. The cause of the peritonitis is, if possible, located and surgically treated, so that it is eliminated as a subsequent factor in the case. The attention is then turned to the diseased membrane, the peritoneum itself covering intestines, liver, spleen and pelvic organs. It must be remembered that in the peritoneal cavity are five distinct pouches in which septic material readily lodges, namely, the post-hepatic pouch, the post-splenic pouch, the two lumbar pouches, and the large pouch of the pelvis. Each of these is thoroughly douched in turn by a strong stream of normal saline solution heated to a temperature of about 100 degrees F. It is useless to wash the pus from one pouch without thoroughly cleansing it from the others. The instrument found most useful for reaching the different pouches is a medium-sized Tait's ovariectomy trocar of ample calibre, dull at the point, and with large lateral perforations near the end, through which the fluid is introduced into the peritoneal cavity. If this washing cannot be accomplished without partial or total removal of the intestines through the opening there is no reason why the intestines should not be lifted out. It is now believed that in prolonged operations for the resection of intestine the constant douching of the parts with a warm normal saline solution prevents shock.

The anesthetist and the operator, during the carrying out of this procedure, for the treatment of purulent peritonitis, must not become so alarmed by the rapidity of the pulse as to stop before the work has been properly completed. It is a well-known fact that patients dying from peritonitis linger for many hours with an almost imperceptible pulse. Many of those who have very thready pulse on the completion of these manipulations will soon rally after they have been placed back in bed. The administration of the anesthetic can frequently be discontinued while the washing is being carried out, and a few whiffs may again become necessary when the sutures are being introduced.

The operator must now consider the question of drainage. Should he institute drainage or should he close without drainage? I have had results that have thoroughly satisfied me when no subsequent drainage was resorted to. If the washing is thorough, and there is no definite suppurating and pus exuding area, and it has been possible to surgically seal up the original source of the infection, it is unnecessary to use drainage in any form. But if an old abscess sac that has ruptured and has produced the peritonitis is still present and cannot be removed, drainage must be instituted, and in such cases I have combined the gauze packing to protect the recleansed peritoneal cavity and a glass or rubber drainage tube to insure removal of any excess of fluid. The gauze does not act as a good drain for any length of time, owing to the fact that its meshes become filled with granulations and organic matter.

The next point in the treatment is the administration of normal saline solution by hypodermoclysis. Three pints of normal saline solution should be injected under the breasts or elsewhere, and a hot saline injection should be thrown into the rectum as soon as possible after the abdominal wound has been closed. The patient is now placed in bed, and the administration of opium is begun and continued until the respirations have been reduced to ten or twelve per minute.

Loomis, in 1885, said that in twenty-four hours after the administration of the opium a rash may make its appearance on the skin. This rash is often accompanied by itching of the surface and a disposition to rub the nose. The pupils become contracted, the eyes become suffused, the countenance assumes a dull expression, and there is an irresistible disposition to sleep. The pulse is lessened in frequency and force, and the respirations are reduced. The patient should now be held in this state of semi-narcotism. The amount of sleep obtained is not of much importance, but the profoundness of the slumber should be noted. If it is found difficult to arouse the patient, the administration of the opium must be stopped for a time

until he can be easily wakened. When the pulse begins to diminish in frequency and becomes fuller, we may be hopeful that the peritonitis has been controlled. Loomis gave from two to five grains of opium, or one-half to one grain of morphine at a dose. It will be noticed that, as the inflammation subsides, the patient becomes more and more susceptible to the influence of the drug, and much smaller doses will be required. Slowness of respiration and the absence of pain cannot be relied on as indications that the inflammation is controlled, but when the pulse becomes diminished in frequency, and with it the tympanitis subsides, ultimate recovery is extremely probable unless some secondary complications arise. The complications I have met with have been pneumonia, single and double, pleurisy with effusion, double parotitis, and secondary accumulations of pus in other parts. It is not wise to be over-anxious regarding the constipation that will exist, because a free, spontaneous movement of the bowels generally follows the subsidence of the inflammation.

What are the indications in the treatment of this disease? In the first place, we should remove from the peritoneal cavity the germs and the toxins produced by them; in the second place, we should introduce some material that will produce chemical change by destroying the activity of infective matters, non-irritant, and a preservative of organic matters, and something that can be absorbed into the system without being productive of harm. A solution of common salt fulfils these indications. A $\frac{1}{2}$ to $\frac{3}{4}$ per cent. solution of salt causes little or no change in normal tissues with which it comes in contact and is used, as you all know, in physiological experiments and microscopy whenever it is desired to keep the tissues as nearly normal as possible. Externally applied, common salt is stimulant and rubefacient, but when diluted its irritating properties disappear. Among those antiseptics that have very little influence on animal poisons, but simply preserve organic matters from decomposition, is chloride of sodium.

Thirdly, something should be introduced into the system to minimize the poison that has been already introduced into the blood. Owing to the condition of the intestinal tract, it is almost useless to attempt to administer drugs by the stomach. More absorption is likely to take place from the lower bowel. It is therefore advisable to introduce saline solution beneath the skin and per rectum.

In cholera epidemics, salt and water has been frequently injected into the veins, and it was credited with having hastened and secured recovery. It was also given by the stomach to arrest the disease. The salt was supposed to act directly upon the cholera poison.

Fourthly, the administration of some drug that will act either as an antidote to the poison already absorbed, or that will delay further absorption until reesterilization of the fluid or greater immunity of the system has taken place, or that will act in both capacities.

Having seen a case of severe atropine poisoning, I was struck with the resemblance of the symptoms to those produced by the poison of acute general peritonitis. The face was anxious, the abdomen much distended, and the pulse rapid. Atropine poison, then, produces symptoms very similar to those of the toxins formed in acute general peritonitis. Opium is the antidote to the one, and there is no reason why it should not be the antidote to the other. Opium may then act as an antidote in this disease.

It is well known to those who have performed many abdominal operations that a process of sterilization of intraperitoneal fluids produced during the acute general peritonitis must take place, because we find large collections of sterile fluid left in the abdomen after the subsidence of such inflammation, and often retained there for many years. If this is so, we must believe that a fatal termination may be warded off by preventing the rapid absorption of intraperitoneal fluid until the process of sterilization has been partially or completely accomplished. We know that opium acts on the secreting and excreting organs, with the exception of the skin, in such a way as to lessen their activity. Opium restrains tissue change. It checks digestion in the stomach and checks secretion and movement of the intestines.

I find that in one case of poisoning by opium there were found at the autopsy patches of a milky whiteness over portions of the peritoneum without any appearance of inflammation or of peritoneal effusion. I see no reason why opium in large quantities should not assist in preventing the absorption of fluid from the peritoneal cavity. If so, it is a very valuable factor in the treatment of this disease.

And, now, let me say, in conclusion, that I believe that the abdomen should be opened for the treatment of acute general purulent peritonitis. Someone may ask, How do you know a case of acute general purulent peritonitis when you meet it? In reply, I would say that the symptoms are very definite and ought to be recognized by the modern practitioner. In the first place, we have sudden, severe pain that is soon followed by an extreme rigidity of the abdominal muscles, a tenderness on pressure, a vomiting or a tendency to vomit, and a pinched expression of countenance that is very noticeable. The muscles are at times almost tetanic in their rigidity, so that the various bundles can be prominently made out by the wavy lines produced across the abdomen. The thermometer and the pulse

rate give us but little, if any, assistance, and they can both be overlooked in coming to a conclusion. If we wait for an indication from either of them we will frequently be tempted to delay surgical procedure until the golden opportunity has passed by.

It has been stated that no symptom is more serious in acute peritonitis than tympanitis. I think that this is scarcely so. When tympanitis has set in the disease is far advanced and the tympanitis is an indication of that advancement. But I have seen many patients die long after the tympanitis had come and had disappeared again.

The surgical treatment in these cases should come first and the medical treatment should follow, and the order of things that has obtained for years should be changed. After the surgeon has finished his part of the work he should hand the case over to the physician in order that the physician may carry out the medical treatment to the fullest extent.

Waiting for operation until some symptoms arise that are supposed to call for operative interference means a delay that should never occur. Acute general purulent peritonitis of the type of which we are speaking has very definite symptoms presenting at an early stage.

I do not wish it to be understood that I advocate operative procedures in every case of peritonitis. I am sometimes particularly anxious to stay my hand in cases of localized peritonitis, and I may particularly mention that form that proceeds from gonorrhoeal infection of the pelvic organs. It is at such times more dangerous to operate than to wait. In such cases the gonorrhoeal virus, that is terribly poisonous, may be carried to localities in which it does not exist.

One well-known author says: "In those cases where we can discern no exciting cause which can be removed or benefited by surgical interference it is not wise to operate." The very difficulty with which we have to contend is this very discernment that is required. It is difficult to discern the exciting cause even after the abdominal cavity has been opened, and it is certainly much more difficult to discern the exciting cause when the abdominal cavity remains closed. If we adopt the advice above given, I am afraid we will be waiting for a *post mortem* examination. It is not necessary that in the presence of general peritonitis we should wait to make an accurate diagnosis as to the cause of the peritonitis.

Unfortunately, many have dabbled in abdominal surgery who were totally unfitted by previous training for such work, and, as a consequence, many of the terrors and dangers of the past that surrounded such operations are still present in the modern mind. Many seem unable to grasp the idea that the opening of the peritoneal cavity in competent and skilled hands is but

a trivial matter. When peritonitis exists we need not fear the production of a disease that is already present, and if no peritonitis exists the mere opening of the abdomen should not produce it.

I have never lost a patient from what is called an interval operation for the removal of the appendix, nor for the relief of acute appendicitis when performed within about thirty-six hours of the invasion of the disease. Instead of endeavoring to ascertain which of the cases should be operated upon we should set ourselves the task of discovering which of the cases should not be operated upon.

I have endeavored to give you my own thoughts upon this important subject, together with the results of any little work I may have done, and you must judge of the results for yourselves.

APPENDIX OF CASES IN DETAIL.

CASE 1.—Mrs. P., aged 25. (Dr. Carveth.) October, 1888, confined. In February, 1889, had an attack of gonorrhœa; recovered. Fourth confinement, March 4th, 1891, easy labor; good recovery. April 6th, suddenly seized with pain in umbilical region; chill; vomiting and diarrhea. At noon, April 7th, expression of face anxious; tongue, dry and brown; temperature, 102; pulse, 100. Abdomen very tender all over, but not especially so in pelvic region. Noon, April 8th, temperature, 103; pulse, 120; abdomen much swollen and tympanitic; constipated. Morning of 10th, not improved and brought to General Hospital under my care. Diagnosed gonorrhœal peritonitis; general, far advanced; held out but little hope, but advised laparotomy. April 10th, 1891, at 1 p.m., at Toronto General Hospital, assisted by Dr. A. H. Wright, opened abdomen; sero-pus flowed out; bowels very red and almost gangrenous in places, covered with lymph flakes mixed with pus; no adhesions; bowels so distended that it was difficult to keep them in abdomen; appendix healthy, no obstruction found. Bowels not allowed outside as loop by loop was examined. No bile color found in fluid and thus concluded not perforation of gall-bladder. No urinous odor and no symptoms pointing to perforation of renal calculus or perforation or rupture of bladder. No fecal extravasation. Tubes and ovaries normal in size, but looked black and purple, almost gangrenous. Pelvic organs all looked very dark red and purple. Washed out with sterile water, drained. Died twenty-four hours after. A *post-mortem* found nothing to account for inflammation until ovaries and tubes were drawn up, almost purple in color with ecchymotic spots. Pus in tubes, but no gonococci. Bowels in places almost gangrenous and rotten, either from severity of inflammation or pressure by distention.

CASE 2.—Mrs. U., aged 19. (Dr. Leslie.) Menstruation normal; severe pain right iliac region, localized for two hours, then diffused over abdomen; paroxysmal; vomited; diarrhea set in. Up out of bed and walking about; again seized with pain over abdomen; could not bear weight on abdomen; temperature, 99.3; pulse, 104; respiration, 24; up and out again, when pain recurred. Patient removed to Toronto General Hospital. Urine colored with blood, probably vaginal; a trace of albumen. Microscopical examination showed blood corpuscles and pus. Diagnosed acute general peritonitis from perforated appendix and gonorrhoeal infection; pulse at the time of operation, 150-160. July 10th, 1892, assisted by Dr. Wright, opened abdomen in median line; peritoneum congested, intestines almost scarlet; a semi-glutinous serum escaped; ovaries and tubes adherent and fixed; uterus bound down by adhesions; decided the trouble was from gonorrhoeal infection: removed tubes and ovaries, which were swollen and grayish-purple color and filled with pus; washed out thoroughly with plain water, and drained; recovered.

CASE 3.—F. M., aged 11. (Dr. Wallace.) Sudden pain in abdomen; vomiting; increase of tenderness in right iliac region; distention not marked; vomiting excessive; gas passed through intestine, showing no obstruction of bowel; pulse rapid; diagnosed appendicitis. August 18th, 1892, Toronto General Hospital, assisted by Dr. Wright, opened to the right of the rectus muscle; general purulent peritonitis found from perforated appendix; washed out thoroughly with plain water and drained; became very weak during operation; purgatives given; died.

CASE 4.—Mrs. H., aged 47. (Dr. Lowe.) Several children; been losing a great deal of blood lately at menstrual periods. On examination a tumor was found, larger on the left than on the right side, stretching across the abdomen; tumor been growing rapidly; abdomen tender to touch; has bearing-down pains and pain across back; diagnosed large fibroid tumor extending to umbilicus; advised hysterectomy. While awaiting hysterectomy, patient was taken with sudden severe pain low down on left side of abdomen; temperature and pulse elevated; three days later looked much worse. September 1st, 1892, at Toronto General Hospital, assisted by Dr. Wright, opened abdomen in median line; general peritonitis from rupture of pus tube on left side; removed fibroid as well as the ruptured tube; sponged out; closed; patient died.

CASE 5.—Mr. T., aged 24. (Dr. J. M. Cotton.) Wakened with pain in abdomen; ate his breakfast and vomited it; rode to town, but owing to severe pain, was forced to return; became easier after getting an opiate. Forty-eight hours after pain returned more severely; rigidity of the abdomen, distention;

pulse, 135 ; bathed in perspiration ; commencing collapse. On November 14th, 1892, in kitchen of patient's house, assisted by Dr. Cotton, while neighboring man held lamp, opened abdomen to right of right rectus ; came on a pus pocket containing very offensive pus ; pus pocket evidently ruptured into general peritoneal cavity. Washed out with plain water ; placed gauze drain ; purgatives given ; died.

CASE 6.—Rev. M., aged 65. (Dr. Harris.) Severe pain in abdomen ; went around two days ; went out, preached ; pain intense ; vomiting set in ; pain localized, right iliac region ; rigidity of right rectus ; induration ; bowels moved several times ; distention came on, very tympanitic ; vomiting continued ; acute general peritonitis diagnosed ; mass to be felt on right side through rectum ; pulse, 112 ; temperature, 102 ; four-headed consultation, difference of opinion. Operation deferred, as some supposed simple obstruction of fecal accumulation, which could be removed by purgatives ; bowels freely moved, still difficulty remained ; pulse higher and vomiting continued ; patient much weaker ; though a week had been lost, decided to operate. At the residence, assisted by Dr. Harris, February 15th, 1893, opened to right of right rectus ; found thickened appendix ; pus oozed out from perforation in appendix. Appendix itself evidently the seat of abscess. This had ruptured into peritoneal cavity ; acute general peritonitis ; irrigated abdomen with plain water ; glass drain ; purgatives administered ; patient died ten days after ; abdominal symptoms much relieved, but general systemic condition unimproved.

CASE 7.—Mr. B., aged 30. (Dr. Harrington.) Three years before patient had been operated on for strangulated hernia ; fecal fistula had resulted ; fistula then closed. Returning home in evening he ate a hearty supper consisting, among other things, of green onions. At three in the morning was awakened with pain in abdomen ; rigidity of abdominal muscles ; pain all over abdomen ; rapid pulse, 130 ; decided to operate ; patient looked collapsed. On April 30th, 1893, at Toronto General Hospital, assisted by Dr. A. H. Wright, opened abdomen in median line ; sero-purulent fluid all over abdominal cavity ; washed out with plain water, portion of green onions from among intestines ; drew out half of intestines from abdominal cavity ; searched for perforation ; could not find it ; drained ; patient almost died on the table ; slowly improved ; recovered ; stimulants only ; colliquative diarrhea ; died one year after from perforation in the same place ; no operation, second attack.

CASE 8.—Miss D., aged 32 ; took ill October 26th, 1893. Severe pain all over abdomen ; during sleep vomited ; pain became localized in left side ; temperature and pulse elevated ; improved ; got up out of bed ; taken ill again ; distention of

abdomen. On the fifth day severe sudden pain in right iliac region; anxious expression; legs drawn up; tender spot on pressure, usual place. On October 30th, 1893, at St. Michael's Hospital, assisted by Dr. Amyot, opened abdomen; gush of pus as soon as peritoneal cavity was opened; intestines matted together in ileo-cecal region; appendix lay in pelvis; peeled out from adhesions; removed; appendix was gangrenous and perforated near the tip; abdomen thoroughly flushed with plain water; post-hepatic, post-splenic pouches, iliac fossa and cul-de-sac of Douglas being thoroughly washed; gauze and tube drainage; small quantity of opium; died.

CASE 9.—Mrs. H. (Dr. Lesslie.) Never well since labor, two months before. Diagnosed purulent peritonitis. September 16th, 1894, at small house, patient being too weak to move to hospital, assisted by Dr. Lesslie, opened abdomen in middle line. As I cut my finger, requested Dr. Lesslie to do washing out with plain water and finish operation. Large quantity of pus; drained; patient died.

CASE 10.—Mrs. McF. (Dr. Eadie.) Patient passed pen-holder into uterine cavity of uterus to produce abortion. Pain came on and taken violently ill Sunday night; ill Sunday, Monday, Tuesday. No doctor sent for until Wednesday, when Dr. Eadie found her suffering great pain; tenderness on left side of abdomen, low down; could gain no information as to cause at first. I saw patient Friday; found suffering from tenderness over whole abdomen; evidence of general peritonitis. Pulse, 120; temperature, 103; evidently very ill. Owing to cause of trouble did not care to tell husband, therefore did not care to operate then. Heard nothing until Sunday night, when I was called to operate. December 16th, 1894, at residence, opened in median line. Found large quantity of pus and large flakes of nasty-looking lymph. Washed out thoroughly with plain water; drained; largest quantity of pus in pelvis. Pulse dropped from 130 to 109; temperature to almost normal. Temperature began to rise again next afternoon, and she died the following morning, thirty-six to forty-eight hours after operation.

CASE 11.—Mr. M., aged 42. (Dr. A. H. Wright.) Taken on Tuesday with sudden pain in abdomen at umbilicus; rapidly distended and given purgatives without effect; no flatus passed at this time; vomiting. At 6 a.m., Friday, suddenly collapsed; great change in appearance; pulse not over 90, temperature about 99. Friday afternoon I saw him; found slightly jaundiced; waited while large enema was given; brought away some fecal coloration but no fecal matter. He stated a small amount of fluid passed down; had suffered with large inguinal hernia for some time; this complicated diagnosis; decided to

wait. Saturday afternoon saw him again; large amount of flatus expelled. This pointed to appendicitis, with acute general peritonitis; pulse not over 90. Diagnosis lay between appendicitis and intestinal obstruction, in some way connected with hernia. January 19th, 1895, at patient's residence, assisted by Dr. McFarlane, opened in median line. Great difficulty in keeping intestines in place; enormously thickened omentum; gradually separated and peeled off; large quantity of sero-pus came from pelvis; intestines deeply congested; omentum covered with purulent lymph; large portion of omentum removed; appendix could not be found. Washed out with plain water and drained; closed. From appearance of patient did not think likely to live more than forty-eight hours; it seemed impossible to recover from such a condition; purgatives administered; died January 21st.

CASE 12.—Miss G. (Dr. C.) Abdomen distended, rigid; pulse about 130, temperature 103; vomited; diagnosed acute general peritonitis; decided to operate immediately. Eight days previously Dr. C. curetted interior of uterus for ante flexion; on fourth day after operation symptoms of fever, headache, increase of pulse, some tenderness in neighborhood of stomach. February 20th, 1896, at patient's residence, assisted by Dr. W., opened in median line; peritoneal cavity filled with pus and flakes of lymph; washed out with plain water; broke up all adhesions; right and left tube very much inflamed, thickened and pulpy; left ovary particularly pulpy; drained; closed: purgatives administered; died same evening.

CASE 13.—Dr. Y. About 4 a.m., Friday, taken ill with sudden, severe pain in abdomen; vomiting; was up and around, but had to go to bed; one attendant thought perhaps suffering from renal colic, other thought appendicitis; thought of sending for me Friday evening, but did not send until Saturday. I saw him Saturday at 8 p.m.; concluded perforation of appendix; advised immediate operation, but stated afraid too late. February 23rd, 1896, at 1 a.m. (Sunday), at patient's residence, assisted by Dr. C., opened on right side near Poupert's ligament; omentum coiled up, broke through folds and evacuated pus, flocculent and serous; large hole in appendix, through which could insert little finger; almost ulcerated off at cecum; so rotten, ligature tore through; removed appendix; washed out with plain water; drainage and iodoform gauze packing; foreign body found in appendix; died.

CASE 14.—Mr. D. O. R. (Dr. Youker.) Four weeks previously, while in Michigan, severe attack of what appeared to be appendicitis; lump formed and disappeared; no improvement; brought home; improved and able to be up and out Driving a couple of days previous to attack, which began at

2 a.m., Saturday, February 20th. Sent for me Sunday and arrived on night train. Diagnosed general purulent peritonitis from secondary rupture of pus sac; operated February 22nd, 1897, 2 a.m., by lamplight, at patient's residence, assisted by Dr. Youker. As soon as peritoneum cut through, sero-purulent fluid discharged; mass of adhesions and pocket of pus; appendix removed; washed out with plain water. Adhesions of intestines not disturbed, as whole upper portion of peritoneal cavity shut off by them; pulse at operation, 120; drained with gauze and tube; closed; purgatives given; died.

CASE 15.—Miss N., aged 22. (Dr. Britton.) Grippe one year previously, ill two days; noticed lump one year ago; pain in front after urinating, voided frequently, two years ago; last week thought lost flesh. Diagnosed multilocular ovarian tumor; advised operation and arranged date; afterwards patient decided to wait. I warned her of risk; heard nothing for a few days, when the doctor called to see me. That morning she was suddenly taken ill (February 21st); afraid tumor had burst; temperature, 104; pulse, 120; evidence of peritonitis. I saw patient Wednesday; very ill; pulse, 120; distention. Thursday morning saw again; pulse, 128; more distended, evidently very desperate condition; concluded only chance in operation, and even that could scarcely save life. At 3 p.m. same day, February 25th, 1897, at residence, assisted by Dr. Britton, opened in median line. Abscess of left ovary burst; peritoneal cavity full of sero-pus; two enormous pus tubes, largest I ever saw, containing each fully one pint of pus; after great difficulty removed right; very firm adhesions; abscess of right ovary; left tube removed; both tubes burst during removal; washed out with plain water; drained; pulse began to fall towards evening, and patient died between 12 and 1 a.m.

CASE 16.—Rev. J. M. Ill four or five days; attack of appendicitis; temperature and pulse about normal; distended; vomiting; circulation poor, although pulse not above 110, and full; temperature, 99; reminded me very much of Case 11. Hopeless prognosis before operation; decided to drain right loin. March 6th, 1897, at residence, assisted by Dr. Hunter, opened on right side; walled off pus sac with very thin lymph wall that looked like yolk of egg, ready to burst; slightest touch broke it; very offensive pus; sero-pus all over abdomen; washed out with plain water; did not disturb adhesions around appendix; no sutures applied; iodoform gauze dressing in and over outside of wound, and sterilized wool. Next day saw patient; vomiting; distention increased. Doctors had punctured intestines in an endeavor to remove gas, but failed; distress from distention very great; pulse only 90,

temperature, 99; vomited large quantities of porter-colored material during my visit; purgatives administered; died.

CASE 17.—Mrs. B. (Dr. A. J. Johnson.) Sudden pain in abdomen two weeks ago; acute general peritonitis; high fever; temperature, 105; found hardened mass right side, on level with navel, about 2½ inches in diameter, felt brawny. On examination through vagina large mass behind and below uterus, pushing it up; concluded secondary phlegmon from original appendicitis. September 10th, 1897, at St. John's Hospital, assisted by Dr. Johnson, incised in median line; purulent collection in cul-de-sac of Douglas; hard mass, proved to be appendix, perforated; two fecal concretions escaped; general peritonitis; omentum and bowel adherent; removed appendix; washed out with plain water and packed gauze through another incision; two drainage tubes; gauze through lower portion of incision; purgatives; died.

CASE 18.—W. F., aged 11. (Dr. Forfar.) Ill Tuesday with pain in abdomen after receiving a blow from a boy in play; went to school Wednesday and on Thursday until noon; pain more severe; vomited. Saturday afternoon (December 4th) saw patient; pulse, 160; no abdominal distention; rigidity of muscles; pain over McBurney's point; restless; diagnosed gangrenous appendix; ruptured at nine that morning. Opened in right iliac region; washed out with plain water; made counter opening in loin same side, drew piece of sterilized rubber drainage tube through; packed gauze over appendix and into loin; another opening in median line; packed gauze into left loin, up under stomach and down into the cul-de-sac of Douglas to establish free drainage of pus, that filled entire peritoneal cavity. Patient died 9 a.m., Sunday, December 5th, eighteen hours after operation. *Post-mortem* showed gangrenous appendix, that had evidently burst into cavity of peritoneum.

CASE 19.—B. H., aged 7. (Dr. Simpson.) Distention; all symptoms of appendicitis with peritonitis; very poor, but only chance by operation. December 18th, 1897, at residence, assisted by Dr. Simpson, opened to right of right rectus; appendix turned upward with short mesentery; adhesions; abscess sac with pus; appendix removed; washed out with plain water and drained; closed; did not improve and only lived a little over twenty-four hours; distention became greater; vomiting continued; died.

CASE 20.—T. L., aged 19. (Dr. Barton.) Taken ill Monday with slight pain in abdomen, but worked; pain continued; Tuesday, worse; vomited once. Doctor saw him Wednesday; tenderness over appendix; rigidity of right abdominal muscle; elevation of temperature, about 101; pulse, about 90.

I saw patient Friday; no distention; rigidity; temperature, 101; pulse somewhat feeble, though not over 100; diagnosed appendicitis and advised operation at once. December 31st, 1897, at Toronto General Hospital, assisted by Dr. Barton, opened to right of median line; gangrenous appendix in pelvis; intestine very much thickened by septic infiltration; impossible to remove appendix; friable tissue; sero-pus general; washed out with plain water; packed with gauze; drained through open wound; pulse, 160 on table; opium and purgatives given; recovered.

CASE 21.—T. D., aged 9. (Drs. McLean and Gilchrist.) Taken ill February 7th; pain in abdomen; appeared to be improving; Thursday, severe pain, much worse; distention; pulse not elevated. I saw patient Tuesday evening (15th); distention; circulation poor; slow respiration; pulse about 80 to 100; looking very ill; dark rings under eyes; concluded abdomen full of pus; on percussion, dullness in each flank; advised operation, but slight hope of recovery. February 15th, 1898, at Orillia, assisted by Dr. McLean, opened along right rectus; pus free in abdominal cavity; horribly offensive; made second opening to left of rectus muscle; washed thoroughly with plain water; appendix hanging in pelvis, perforated at tip; removed. Two drainage tubes inserted; pulse about as good as before operation, but slight hope held out; died.

CASE 22.—T. C. (Drs. Eadie and McMahon.) Vomiting for about one week; evidence of peritonitis. March 26th, 1898, at St. Michael's Hospital, assisted by Dr. McKeown, opened in median line; peritoneal cavity full of pus; appendix healthy; no perforation; sigmoid flexure thickened; mesentery, black gelatinous material that looked gangrenous; appendices epiploica of rectum were gelatinous, inflamed, black patches; evidently case of gangrene of mesentery of rectum with peritonitis; could not do anything; closed; died March 31st.

CASE 23.—Miss C. (Dr. Cleland.) Took ill May 10th, with sudden pain in abdomen; managed to get home, but suffered great pain on way; severe vomiting. Dr. Cleland found tenderness above navel across abdomen; tenderness in right loin, also over appendix; temperature slightly elevated in two or three days. Pulse gradually increased, when I saw patient it was 120; distention of abdomen increased; advised operation; concluded appendix high up in abdomen and back in loin. May 17th, 1898, at Toronto General Hospital, assisted by Dr. Cleland, opened abdomen; gangrenous, thickened appendix, tip upwards near liver, filling posterior part of loin; abscess cavity opened; removed appendix from adhesions

with great difficulty. Washed out with plain water and drained; opium and purgatives administered; died.

CASE 24.—H. H. (Dr. Walters.) About a week or ten days before complained of sudden acute pain in abdomen. One doctor thought colic, another intussusception, another typhoid fever; no elevation of pulse when I saw him; all thought it impossible to be appendicitis in this condition. I said the worst cases were those in which there was no elevation of temperature or pulse, and I thought abdomen full of pus. July 4th, 1898, at private residence, assisted by Dr. Macdonald, opened in median line; very severe inflammation of peritoneum; adhesions; abscess cavity extended high up into left loin beneath spleen; concluded hopeless, but removed appendix; closed three holes in cecum and washed out both cavities with plain water; drained; died.

CASE 25.—F. R. W., aged 23. (Dr. Cuthbertson.) Pinched appearance of countenance; temperature, 98.2; pulse, 120. July 18th, 1898, at Grace Hospital, assisted by Dr. Cuthbertson, opened hurriedly, owing to patient's condition; abscess and gangrenous appendix at bottom of it in right iliac region; did not disturb adhesions; general purulent peritonitis present. Washed out with plain water, packed with gauze and left wound open; died.

CASE 26.—Mrs. M. (Dr. Eakins.) Saw patient in consultation; distention; temperature, 102; pulse, 120. Ill about ten days; was vomiting. Diagnosed peritonitis and appendicitis; advised operation, although held out but little hope. September 2nd, 1898, at private residence, assisted by Dr. Eakins, opened in right ilium semilunaris; found appendix dipping into abscess sac; pus; appendix ulcerated off; large rent at lower end of cecum stitched; did not disturb adhesions; washed out with plain water and drained; pulse went to 156 on table; temperature gradually rose all day after operation, as well as pulse; no vomiting; nourishment good; slept well with $\frac{1}{4}$ gr. of morphia. September 3rd, at 9 p.m., pulse, 150; temperature, 105.2; died at 2 a.m. on the 4th.

CASE 27.—Mr. E. (Dr. White.) Taken ill Friday; on Saturday severe pain; saw doctor. Doctor came to see him on Sunday when in bed; telephoned me Monday night; arrived Tuesday morning, but evidently too late to be of service. October 4th, 1898, at private residence, assisted by Dr. White, opened above Poupart's ligament on right side; peritoneal cavity full of pus; not distended; appendix turned up under liver, enlarged, large perforation, evidently gangrenous and burst two days before; washed out with plain water and packed with gauze; two rubber drainage tubes inserted to keep wound open; pulse rapid when left table; purgatives administered; died.

CASE 28.—Mr. J. (Dr. J. E. Elliott.) On Wednesday, December 15th, 1898, went on his train to Hamilton, arriving home in the evening. On way home, to avoid horse and waggon while crossing road, turned and slipped; felt sudden pain in back on right side just behind liver; nauseated and vomited; went home feeling doubled with pain; doctor saw him shortly after; chill; temperature, 102; pulse, 120. Doctor saw him next morning again, and I saw him within twenty-four hours; abdomen rigid, thoracic respiration, tenderness on pressure over McBurney's point and back in loin, rigidity of abdominal muscles chiefly on right side; decided ruptured appendix with posterior attachment; advised immediate operation. December 16th, 1898, Toronto General Hospital, assisted by Dr. Elliott, opened to right of right rectus; appendix curled away back under liver in peculiar manner; found perforation; under surface of liver covered with grayish lymph, like diphtheritic membrane; removed appendix; washed out with plain water, but did not drain. There was pus throughout abdominal cavity; closed; recovered.

CASE 29.—Dr. Y., aged 52. Friday, January 6th, 1899, taken ill; tenderness in abdomen, gradually passed off; improved and went around Saturday. Sunday, pain increased and sent for Dr. Farley; suffering intense pain and gave hypodermic injection; pulse, 140; called Dr. Eakins in consultation; patient requested me sent for; saw him Tuesday night at 9 o'clock; vomiting large quantities blackish-looking fluid; bowels had moved, motions loose and bilious locking; pain all on left side; no tenderness on right; pulse, 90; temperature, 100; did not look well; peculiar drawn appearance of face; on examination of abdomen nothing to be felt; a little more gas than usual; dulness in right loin; advised immediate operation. The other three doctors consulted and decided to allow me to proceed, but patient would rather wait until morning to see condition. Met at 9 a.m.; condition much improved; no rigidity of abdominal muscles; no great tenderness on pressure; vomiting had subsided; temperature and pulse about normal. As it was considered inadvisable, on account of improvement, to operate, I decided to return home. Left at 11.15; arrived home 3 a.m.; at 7.30 p.m. received message to immediately return; arrived at 1 a.m. Thursday morning. January 12th, 1899, at residence, assisted by Dr. Farley, opened to right of right rectus; omentum thickened, unrolled it, and appendix dropped away; pus found; omentum very much thickened in pelvis as well as in right loin; lower half removed; appendix removed. Washed out with plain water; drained; left table with pulse of 140; died.

CASE 30.—H. S., aged 25. (Dr. McCollum.) Taken ill at 11

p.m. Saturday with pain in stomach; increased, and doctor sent for; saw him 3 a.m. and diagnosed case of appendicitis. I saw patient at 5 p.m. Sunday and advised immediate operation. January 15th, 1899, at St. Michael's Hospital, assisted by Dr. McCollum, opened to right of right rectus muscle; found abdomen full of puro-lymph; appendix turned inwards, coming out between ilium and cæcum, almost gangrenous down to base, but not perforated; full of grumous material, very offensive; removed. Washed out with plain water; did not drain; pulse reached 120, but soon dropped to 96; purgatives given; recovered.

CASE 31.—Mr. D. (Dr. Boyd.) One year ago attack of pain while in Vancouver; did not think much about it; a week ago had diarrhea; two days before I saw him had a little discomfort in the neighborhood of appendix; Friday noon felt pretty well, in evening poorly; chill; took hot bath; felt somewhat improved; at 8.30 p.m. sudden pain in abdomen; saw him at 9.15 p.m.; temperature only 99.5; three-quarters of an hour later, temperature, 103; pulse, 110; right rectus muscle rigid; face, pinched expression; vomited; tender on pressure over appendix and full feeling in that region; advised immediate operation. February 24th, 1899, at Toronto General Hospital, opened to right of right rectus muscle; full of sero-pus; appendix almost ulcerated off at base, removed; bowel much thickened. Washed out with plain water and drained; small quantity of opium given; died.

CASE 32.—Frank H. (Dr. T. B. Richardson.) Taken ill at 3 a.m., April 10th, with severe pain in abdomen; at 12 p.m. saw him in consultation; sudden severe pain; vomited three times; tenderness on pressure in right iliac fossa, rigidity on right rectus muscle; a small thickening to be felt beneath wall of abdomen, evidently distended appendix; advised immediate operation. On April 11th, 1899, at residence, assisted by Dr. Richardson, opened to right of right rectus muscle; appendix beneath incision thickened and inflamed, gangrenous at end; removed in usual way; did not wash out or drain; sponged out; purgatives given; recovered after a double pneumonia.

CASE 33.—Amy B., aged 20. (Drs. Godfrey and Tremayne.) Ill for a week or more with appendicitis. On April 13th, 1899, at St. John's Hospital, assisted by Dr. Godfrey, opened to right of right rectus muscle; appendix curled in on outer side of mesentery of cecum, very gangrenous, tissues rather friable; mopped up pus; removed appendix; tube and gauze drainage; closed; some opium given; died.

CASE 34.—L. A., aged 38; pain in abdomen after returning from a trip west. Pain came on at 4 p.m.; ill through night; sent for me in morning; saw patient about 10 a.m.; sudden

severe pain, rigidity of right rectus, tenderness on pressure; feeling of nausea; temperature, $99\frac{1}{2}$; pulse, 80; advised immediate operation. On August 17th, 1899, at Toronto General Hospital, opened abdomen; pus came out; general peritonitis commencing; appendix gangrenous at tip and perforated; no adhesions; removed. Washed out with normal saline solution; closed; purgatives given; recovered.

CASE 35.—Miss B., aged 17. (Dr. McKenna.) Taken ill Friday night while out for an evening; vomited; Saturday returned to Abbey; felt ill. On Sunday stayed in bed and on Monday, at 3 a.m., sudden severe pain in abdomen. Dr. McKenna saw her at 4 a.m. and again later. I also saw her; pulse, 140; soreness in region of appendix and looked very ill; temperature, 102; decided to operate. January 1st, 1900, at St. Michael's Hospital, assisted by Dr. McKeown; found fluid in peritoneal cavity; evacuated horrible smelling pus from behind cecum; pulse, 160. Washed out with saline and packed in gauze; opium treatment; recovered.

CASE 36.—Olive F. On Tuesday severe pain; saw patient Thursday; abdominal muscles rigid; distention marked; diagnosed appendicitis and purulent peritonitis; advised operation, with but little hope. On June 1st, 1900, assisted by Dr. Bennett, opened abdomen; pus immediately gushed out; abdomen full of pus; coprolith found in appendix; appendix not removed owing to friable condition of bowel around it. Washed out with plain water; drained; purgatives administered; died at 1 p.m.

CASE 37.—Dr. H., Wednesday (31st) taken ill while camping twenty-five miles north of Havelock, on C.P.R., with family; bowels moved once; pain came on while out in boat; went ashore and bowels moved; diarrhea set in; pains still severe; vomited; remained at this place some days until more pain came on and it became intense; took morphine; decided his case was appendicitis and must hurry away; came alone to Toronto; ambulance brought him from the station to hospital; was telephoned to and asked to meet him at hospital; was able to walk; stood up to take off clothing; on examination, found blueness over abdomen, rigidity of muscles, distention, pinched expression of face, feeling of fluctuation on right side; diagnosed general peritonitis; also localized mass in right iliac region that should be opened and drained. On August 2nd, 1901, at the Toronto General Hospital, opened abdomen near ilium; hoped to evacuate fluid without entering peritoneal cavity; fluid free in peritoneal cavity, not encysted, nasty thin pus that smarted fingers; bowels all reddened; evidence of general purulent peritonitis; washed out with normal saline; drained; did not close with stitches; pulse after operation, 84; temperature, the

night before he told me had been 103; recovered; opium given freely; had fecal fistula, which was operated on. November 26, 1901, returned; soreness across abdomen; incontinence of urine; general weakness; no loss of flesh; found tumor under scar; regular action of bowels; has had some flatulence since operation.

CASE 38.—J. M. (Dr. Clarke.) Taken ill, Thursday (12th); saw him Saturday; decided case was one of general purulent peritonitis from appendicitis; advised immediate operation. September 15th, 1901, assisted by Dr. Clarke, at Peterboro, opened to right of right rectus; pus everywhere; removed gangrenous appendix, also coprolith, from abdominal cavity; could not stitch peritoneum in usual way owing to gangrenous nature of parts. Washed out with plain water; drained; enough opium given to ease pain; died at 9.15 p.m., Saturday (15th).

CASE 39.—Mr. H. (Dr. McKenzie.) Away shooting and taken ill Friday, with pains in abdomen; cramps and nausea; was sent to Toronto. Dr. McKenzie saw him and found pulse 90; temperature, 100 or 101; diagnosed appendicitis. A little while after taken with sudden severe pain in abdomen; Dr. McKenzie found pulse 100. I saw patient, Monday, at 8 p.m.; pulse, 124. Early in afternoon, before severe pain, muscles were not rigid; after pain, muscles became very rigid and board-like; diagnosed perforated appendix and general peritonitis. October, 21st, 1901, at private residence, opened to right of right rectus; peritoneal cavity filled with sero-pus; appendix gangrenous near middle, two large coproliths curled upwards beneath cecum; difficult to remove; washed out with normal saline; drained; opium not pushed; recovered.

CASE 40.—B. H. Child taken sick, Monday (21st); sudden severe pain in abdomen while fastening his shoe; immediately brought to Toronto. Examined and found muscles rigid; decided on immediate operation; temperature, 103; pulse, 124. October 22nd, 1901, Toronto General Hospital, assisted by Dr. Cleveland, opened abdomen; sero-pus all over peritoneal cavity; washed out with saline; removed appendix, which was perforated near tip; closed; some opium given, but not much needed; recovered.

CASE 41.—Mr. G. (Dr. Rowe.) Sick ten days with appendicitis; looked peculiar; hands blue; had not pinched expression; abdomen tense; mass felt on right side near ilium; too weak to sit up; pulse, 56; temperature, one degree below normal. June 9th, 1902, at Grace Hospital, assisted by Dr. Rowe, opened abdomen; found mass consisting of ilium, cecum and omentum; free fluid in peritoneal cavity; whole peritoneum reddened, evidently peritonitis present; pus escaped; appendix removed; bowel perforation closed; washed out with normal

saline; closed wound; opium and purgatives in treatment; recovered.

CASE 42.—David C., aged 9. (Dr. Cuthbertson.) Taken ill Friday night (27th). Saturday morning doctor saw him; saw him again on Sunday. Monday I saw patient; vomited all Sunday night; Dr. Cuthbertson satisfied Saturday morning that case was appendicitis. June 30th, 1902, at Grace Hospital assisted by Dr. Cuthbertson, opened abdomen; full of pus; washed out with normal saline; removed appendix in usual way; covered with omentum before rupture, but this ruptured again into peritoneal cavity; drained; left portion of wound open; opium treatment; recovery.

CASE 43.—Fred McC., aged 25. (Dr. Eadie.) First week in March, six or eight weeks ill with first attack; returned to work and worked until July 15th; worked all day, feeling miserable but not in any great pain until 10.15 p.m.; sudden violent pain, chill, and rise of temperature. July 16th, 1902, at St. Michael's Hospital, assisted by Dr. Eadie, opened abdomen; appendix fixed down together with ilium and cecum over iliac vessels; general peritoneal cavity full of sero-pus; appendix perforated near tip and contained coprolith. Washed out with normal saline; drained; opium given in considerable quantity; recovered.

CASE 44.—Mrs. M., aged 30. (Dr. Moore.) Patient had been taken suddenly ill with collapse and pain in abdomen. I thought it likely that the uterus had been perforated; she was considerably distended and in a very bad condition; anxious face. On Sept. 22nd, 1902, at her home, I opened abdomen in median line; found the intestines very much reddened and the belly full of pus; appendix found to be healthy; the largest quantity of pus was to be found in the pelvis; ovaries and tubes drawn up and found to be almost gangrenous; a small point could be felt on the wall of the uterus towards the right side; I felt satisfied that this was the point of puncture; gallons of water were used to wash out; drainage tube in cul-de-sac of Douglas; iodoform gauze drains in different directions; patient died two days later. The opium treatment was not carried out in this case.

CASE 45.—Geo. E. (Dr. Chambers.) Taken ill with severe pain November 13th; tenderness, rigidity, vomiting; temperature not much elevated, but during next day became elevated to 104; pulse elevated; looking very ill; several attacks before. November 14th, 1902, at Toronto General Hospital; assisted by Dr. Saunders, House Surgeon, opened abdomen; appendix perforated and general purulent peritonitis. Washed out with normal saline; did not drain; closed; some opium given, not much needed; recovered.

CASE 46.—Mr. W. (Dr. C. J. Hastings.) Taken sick Monday

(December 29th), with pain in abdomen. I saw patient Thursday with Dr. H.; abdomen distended; dulness in each loin; fulness over appendix; patient of greyish color; circulation not good; pulse, 100; thought rupture of appendix had taken place night before; advised immediate operation, although thought too late. January 1st, 1903, at Grace Hospital, assisted by Dr. Hastings, opened abdomen; pus free in peritoneal cavity and oozing from perforation of appendix; large abscess in appendix. Washed out with normal saline and drained; appendix removed; closed; opium treatment; recovered.

CASE 47.—Mr. M., aged 17. (Dr. Geoffrey Boyd.) Patient been ill three days when I saw him in consultation; pain all on left side; abdomen rigid; expression of the face that usually seen in general peritonitis: vomiting. May 1st, 1903, opened abdomen in median line; cavity of abdomen filled with pus; intestines reddened; general purulent peritonitis. Washed out thoroughly with saline; appendix curled down underneath the ilium and ulcerated so that it was just about detached from the bowel; closed the opening in the bowel and tied off the mesentery of the appendix; packed in Mikulicz drainage and glass drainage to the pelvis; opium treatment; patient lived for about a week; tympanitis disappeared; abdomen became more flaccid; jaundice set in; pulse became rapid.

THE MEDICAL TREATMENT OF ADVANCED PULMONARY DISEASE.

BY J. FRANK MCCONNELL, M.D., LAS CRUCES, NEW MEXICO.

Since it is a fact that at least seventy-five per cent. of the so-called early cases of pulmonary tuberculosis sent to Southern New Mexico for climatic treatment should be more properly described as advanced, and I regret to state far advanced, it is but meet that those productions of chemists, which have no place in the proper management of the incipient stage, should be given a trial. I have therefore ventured to bring before you a consideration of a number of auxiliaries which in an effort to do something I have felt called upon to exhibit.

Believing, as I do, that no remedy at our command can be proved to have a bactericidal action in phthisis not referable to its internal administration, my sole reason for employing any drug in the treatment of the affection, must needs be, firstly, that it will increase the patient's resistance to the disease; secondly, that it will mitigate or palliate some symptomatic disturbance.

In cinnamyllic acid, an oxidation product of the oil of cinnamon, we have a drug which, when given, will produce results gratifying alike to patient and physician.

For four years I have been using this remedy in advanced pulmonary phthisis, and my experience is such that I can safely assert that there is no other single remedy at our disposal which will give such a favorable therapeutic action in this disease. I will briefly outline two cases selected at random from more than two hundred, which may serve as types.

Mrs. H., aged 27, referred by Dr. Musser, of Philadelphia, showed positive symptoms of pulmonary tuberculosis in July, 1898; came to New Mexico following October. My examination revealed small cavity at right apex and infiltration downward to third interspace on same side, remainder of lung in good condition. Left apex showed prolongation of expiratory sound, some jerkiness in respiration and some very fine crepitation at intervals after deep inspiration; afternoon temperature fluctuating between 100 and 101 $\frac{1}{2}$, pulse 86-100; sputum showed tubercle bacilli, short and very straight (always a sign of virulence in my experience), together with staphylococci and bacilli of Pfeiffer.

The patient was placed at perfect rest, the open-air plan of treatment boldly pursued, and all the adjuvants described in my previous papers brought into play, but no real gain was apparent, but rather the reverse, since the left apex commenced

to break down, the fine crepitation giving place to the dreaded consonating rale. I commenced the use of the cinnamylic acid in the manner hereafter to be described. The improvement was immediate and lasting, the patient being in a good state of health to-day.

CASE 2.—Mrs. S., aged 34, commenced to cough after the birth of her first child, was in a very enfeebled condition for a year, then commenced to gain, became pregnant and was delivered, after which there was a rapid prostration with high fever, purulent expectoration, etc. In October of last year Dr. Tyson, of Philadelphia, communicated with me in regard to her, describing her condition as one in which the right lung was completely riddled and commencing activity at the left apex. I advised against climatic change, as the case seemed hopeless, but suggested the use of cinnamylic acid, which had not been used, stating that if the trouble in left apex cleared up after six weeks' exhibition of the remedy, to send her to New Mexico. Her improvement was immediate, and in less than four weeks I had her under my immediate supervision. I found the left apex apparently without lesion, other than a slight prolongation of the expiratory sound; the treatment, together with a bold plan of open air, rest, therapy has been maintained all winter, patient steadily improving in general health, though right lung is as badly involved as on first examination.

I have here outlined two cases which are typical of the class of patients on whom the treatment has been used. I believe its use in early cases where a proper climatic and hygienic regime cannot be instituted would be beneficial. But my results with early cases without using drugs are so good that I have hesitated to employ the remedy in such cases.

My method of exhibiting the drug is as follows:—

A two per cent. solution of acid cinnamylic (Merck) is made with forty per cent. alcohol, and this is introduced in a finely atomized state into the larynx by means of a good hand atomizer that is provided with a laryngeal tip two or three times daily for a maximum of five minutes. Patients have no difficulty in using the drug after the method is explained to them.

Of course some of the drug reaches the stomach. This is proved by the very remarkable improvement in patients who have a tubercular enteritis, since cinnamylic acid is of considerable value in the diarrheas of the tuberculous.

The remedy to which I attach an importance second only to that exerted by acid cinnamylic is ichthyol. In the subsequent remarks concerning this and other drugs I have endeavored to be exact, and to avoid conclusions not based upon careful clinical inquiry.

In mentioning some of the remedies described in this monograph to other physicians at various times, I have noted the spirit of incredulity that was evoked, which was directly traceable to the fact that they had become tired of trying medicines which had been consistently boomed, and were ready to look askance at any drug therapeutics advocated for phthisis, thus realizing that extravagant and unfounded claims tend to produce a condition of therapeutic nihilism. I have tried, as I stated at the outset, to make mention only of that which I have by honest investigation concluded to be of value.

Ichthyol (Merck) (the sulpho-ichthyolate of ammonium) has a remarkable action on nutrition and successfully modifies the destructive metabolism which is but another name for disease founded on toxin absorption. I have found that patients bear the drug well, never having noted any marked gastric or duodenal symptoms, which so commonly follow the administration of some remedies—creosote, for example. Its therapeutic action from a clinical standpoint depends on its cough-changing character, since the expectoration invariably becomes thinner, less stringy, tenacious and nummular, is more readily expectorated and quantitatively becomes less. It is therefore a valuable expectorant.

During this time the stethoscope will show an amelioration which is supposedly due to an improvement in the tone and nutrition of the areas immediately proximating the lesion. The appetite is improved and a general condition of well being is not an unusual sequence to its use. It is contra-indicated in markedly febrile cases.

Mode of Administration.—After considerable experimentation in this regard, I have concluded that ichthyol is best administered in capsules after meals. For those who are unable to swallow a capsule, it is nicely administered in coffee. I commence with a No. 2 capsule (holding about 10 m.), then gradually change to No. 1 and No. 0 capsules (holding respectively 15 and 20 m.) If there is a diarrhea following its use, a little subgallate of bismuth will prove efficient in combatting a frequent though very transitory sequela.

Ichthoform is a good substitute for ichthyol, embodying as it does all the therapeutic properties of the latter, with the additional advantages of tastelessness and duodenal splitting-up, thus avoiding the eructations, which are disagreeable. Its great objection is the price, since the dose to be effective must not be less than 25 grains.

Creosote and its congeners have been used very extensively by physicians in general practice; but it is noteworthy that the men who have had a considerable experience with an exclusively tuberculous clientele are unanimously opposed to

their use, this is undoubtedly due to the fact that creosote has found a routine use in all stages and all classes, the result of which empiricism is not difficult to imagine. For my part, I am certain that the drug has no place in the treatment of the incipient stages, yet in the advanced cases where it is indicated it has a considerable range of therapeutic usefulness. The chief indication for its use is in a bronchorrhea, where the sputum is excessive and fetid. Here its action is most pronounced, though terpin hydrate is just as useful under such circumstances; in small doses it is an aid to digestion, and is valuable in those cases where the sputum is swallowed during meals and at other times, out of deference to a prudish modesty. That it has no direct bactericidal action is too well established to need any elaboration on my part. Creosote, like ichthyol, seems to promote nutrition, and for this reason must its dosage be maintained at that point where the digestive tract is undisturbed, since a gastric or duodenal catarrh absolutely interdicts its administration. It should *never* be administered to patients who have scanty expectoration, such cases do much better with ichthyol. In advanced septic conditions the drug is useless, *since it easily disturbs the weakened digestive functions already enfeebled by a long debilitating disease.*

Of the multitude of creosote preparations and derivatives it is an undeniable fact that each is given for the creosote contained. Therefore the preparation best tolerated by the patient, and which at the same time fulfils the indications, is the one to use. My preference is the pure beechwood creosote (Merck), which is administered in capsules after the following method: The patient is ordered a box of capsules, some bismuth and some creosote in separate containers, after each meal he fills the lower half of capsule with bismuth, and with a dropper adds the creosote in the dosage advised. This is a most excellent and agreeable method of exhibition.

In patients who dislike capsules and trouble, creosotal or creosote carbonate makes a good substitute. It costs a little more than the beechwood creosote, but is practically inexpensive compared with guaiacol carbonate or duotal, which is so commonly prescribed, and which in my hands has not proven nearly so efficient as the preceding two. The creosote dosage should be small, large doses invariably disturbing the digestion and are rationally non-indicated, *since, if the digestive function is not benefited by the administration of creosote, the effect on the disease is never of value.*

In the marked anemia of the majority of patients suffering from septic absorption, Armour's glycerinated extract of red bone marrow has a most favorable action, the hemacytometer and the Talquist scale affording the most convincing testimony of its hematinic properties.

Strychnia has been highly recommended by Thomas J. Mays in connection with nitrate of argentum solution injections over the site of the pneumogastric of the affected side. I have had no success with this method. Strychnia alone is a valuable tonic, but is habitually used in excessive and immoderate dosage and for too long a period. The smaller doses given at intervals and suspended as soon as improvement is manifested will give more satisfaction than the large doses which are given routinely for a long period without any particularization.

In this connection I may make mention of the fact that many patients consult physicians and receive a prescription calling for strychnia, when they are already using the drug. Recently I saw a patient who had a wiry pulse, diminished excretion of urinary solids, and all the symptoms of contracted kidneys—an invariable result of toxic doses of strychnia—who was taking the prescriptions of three physicians, each of whom had prescribed strychnia or nux vomica.

Heroin, or in its much better form, the hydrochloride of heroin, like our more ancient friend codeine, has a very conspicuous use in our therapy, it being absolutely necessary to suppress the annoying and body-wrecking cough. This drug is much superior to morphine, since it stimulates rather than depresses the respiratory centre, does not constipate and is not so seductive in its influence; that it has no habit-forming tendency is not literally true, as many of you, no doubt, have discovered. It is cheaper than codeia and does not check expectoration to such an extent as either that drug or morphia. Dose $1/24$ to $1/12$ grain, and should always be employed in the smallest doses, since the effect is frequently as good as when large doses are administered; combined with terpin hydrate its action is enhanced.

In this place I wish to utter a warning against a proprietary combination of heroin and glycerine, which seems to be in vogue at the present time. Since every patient coming to Las Cruces this past winter has had among his impedimenta an original bottle of the preparation, which I will not name. This combination contains the hypophosphite of ammonium, a most active expectorant which, while of considerable value in bronchitis, is absolutely contra-indicated in phthisis.

My paper would not be complete without a mention of my most valuable symptom quietener—methylene-blue. Of all the drugs I have used to palliate the distressing throat irritation so common in advanced, and far advanced pulmonary disease, with or without laryngeal infiltration and involvement, this preparation is *facile princeps*; for that constant tickling and hacking cough with sensation of dust or a feather in the larynx or trachea, or under the sternum, methylene-blue in a two per

cent. aqueous solution of Grubler's salt, applied by means of the cotton wrapped laryngeal forceps, will give results unobtainable with heroin, morphine, etc., internally, or orthoform, cocaine, or any other analgesic remedy used locally.

I am conscious of the many deficiencies of this paper, since it is impossible in an article of this scope to take up the various symptomatic disturbances which the phthisio-therapist encounters, yet in presenting the foregoing clinical data I feel that I have brought before you some facts which may prove of benefit in relieving the exigencies of a considerable number of your patients.

[This paper was to have been presented to the section on Medicine at the late meeting of the Ontario Medical Association, but owing to wash-outs along the Rio Grande, the writer was unable to arrive on time.]

THE OPERATIVE TREATMENT OF GOITRE.

By GEO. A. BINGHAM, M.B.,

Associate Professor of Surgery and Clinical Surgery, Trinity Medical College; Surgeon to Toronto General Hospital, St. Michael's Hospital and the Hospital for Sick Children, etc.

GENTLEMEN,—When your committee did me the honor of asking me to read a paper before you on this subject I decided to confine myself to a brief account of the operation which I have gradually come to prefer. I shall, therefore, dismiss in a word such methods as dividing the cervical sympathetic, or the use of electricity, about which I hope others may have something to say.

At the outset I think we should lay down some guiding principle as to *when* we should operate. Certainly *all* cases of goitre should not come under the surgeon's knife. For instance, in anemic girls, about puberty, we have seen rapidly-growing, ill-defined goitres, even producing pressure effects, which have gradually disappeared with or without medical treatment.

Again, no goitre should be operated on for purely esthetic reasons. It is not a trifling operation and should not be lightly undertaken by the novice. On the other hand, no patient, however desperate her condition, should be denied the undoubted relief which follows the removal of this obstacle to respiration. In all cases of benign goitre, the patient should first be submitted to a course of medical treatment, unless, of course, the symptoms be urgent. In 1898, Kocher made the statement that 90 per cent. of the goitre cases, coming into the hospital at Berne, were so improved by medical treatment as to require no operation.

To sum up, in all cases of benign goitre, solid or cystic, operation should only be undertaken for the relief of definite symptoms. In malignant diseases of the thyroid, if an early diagnosis be possible, extirpation of the gland will be the patient's only hope. Unfortunately, early diagnosis is rarely made, and, when seen, the surrounding glands are involved and all hope of a radical cure must be abandoned. In such advanced cases of malignant disease, my rule has been to advise partial removal, only to relieve pressure from the continued growth, and to render possible the future operation of tracheotomy.

In exophthalmic goitre, I have operated twice for the relief of urgent pressure symptoms; and have not regretted doing so. In both cases, immediate relief was experienced and the symptoms of the disease ameliorated.

In this class of cases, there is greater danger of death from the anesthetic; and yet, ordinarily, the patient is too nervous to submit to the operation under local anesthesia. Here an expert anesthetist is required to co-operate with the surgeon. The convalescence is also likely to be decidedly eventful, and to demand watchfulness and keen judgment on the part of the attendant.

Nevertheless, in the case of Grave's disease, failing to respond to prolonged medical treatment, with steady increase of growth, the suffering patient should be given the benefit of operative interference.

Having laid down these working rules as to *when* to operate, the next question to decide is as to *how much* should be removed in a given case. Of course, if but one lobe is involved, only that lobe should be dealt with. I have removed the isthmus alone, when it alone was involved. But, in the ordinary parenchymatous goitre, usually both lobes are unequally involved. At first, it was my practice to remove the whole gland with the exception of a small portion of one lobe. This I now believe to be unnecessary; and, unless both lobes are enormously enlarged, my constant practice is to remove only the larger lobe with the isthmus. Following this method, there has been almost invariably a fairly rapid diminution in the size of the lobe remaining; and, of course, all pressure symptoms are at once relieved.

A word as to the *anesthetic*: The ideal in this regard is of course a thoroughly competent local anesthetic. I know that many men on this continent and in Europe are using cocaine anesthesia in this operation. But, so far, I have employed chloroform, administered by an expert.

In bad cases of dyspnea, the anesthetic is stopped as soon as the skin-incision is completed, the operation being continued,

with little or no further use of it; until the pressure is removed from the trachea and all danger of asphyxia has passed. I believe that by intelligent co-operation between surgeon and expert anesthetist, a patient can thus be "nursed" along through the operation without suffering on his part and with the minimum amount of danger. At the same time, being so lightly anesthetized, the patient by his unconscious phonation, is able to give us assurance of the safety of the recurrent laryngeal nerve.

Now as to *Technique*.

The best incision in the vast majority of cases is the transverse, or shallow U-shaped one extending across the tumor from one sterno-mastoid to the other. The horn of the incision, corresponding to the lobe to be removed, may be extended upward and outward as far as necessary. This incision passes through skin and subcutaneous tissue, platysma and deep cervical fascia.

The two flaps are dissected up and down, and, if necessary, the anterior jugular is cut between ligatures. Next, the pre-tracheal layer of the cervical fascia is recognized and very carefully incised vertically in the median line. Immediately beneath this layer is the capsule of the tumor, and if care is not taken this capsule is opened up and the field of operation is flooded with hemorrhage, very difficult to control. In other words, the operation will be a practically bloodless, or a dangerously bloody, one, according as the surgeon is, or is not, extremely careful in working close to, but outside, the capsule.

The opening in the pre-tracheal fascia is enlarged as required, the finger introduced, and, by this means, any adhesions between fascia and capsule are readily broken down. The finger is then swept around the outer and upper margin of the tumor, forcing the pre-tracheal fascia and muscles over the edge of the mass, and the superior thyroid vessels are recognized and cut between clamps.

This usually releases the outer part of the lobe, which may now be drawn forward, and still, with the finger as a blunt dissector. Everything is stripped away from the posterior wall of the capsule, gradually rolling the lobe over to the middle line. If care is taken to strip everything cleanly and completely from the posterior part of the capsule, the recurrent laryngeal nerve will necessarily be pushed away from the inferior thyroid vessels and all danger of injury to it removed.

The inferior thyroid vessels are tied off, close to the tumor; and the lobe is now completely freed, and we see the rings of the trachea to which the isthmus is adherent. Here there is a decided danger of injury to the trachea, the wall of which is probably atrophied by long-continued pressure. No violence must be used in separating the isthmus, and, indeed, I

have again and again left a small portion of the posterior wall of the isthmus, which was adherent to the trachea, rather than risk its separation. The junction of the isthmus with the opposite lobe is now transfixed with silk and tied off, and the mass cut away.

This ligating of the pedicle, while unnecessary so far as hemorrhage is concerned, still, I think, serves a purpose in preventing the escape of thyroid secretion into the wound, which is the probable cause of some rather disagreeable symptoms which occasionally arise during convalescence. Every smallest bleeding point should be tied off with fine silk, and some means adopted to obliterate the huge "dead space," which, in cases of large tumors, is left behind sternum and clavicle. This cavity is a serious menace to the patient's life from the accumulation and decomposition of secretions. I have found the following method of dealing with it to answer well. With a small, fully curved needle, armed with fine catgut, I quilt the anterior and posterior walls of the space together by an over-lying series of running sutures. The first line of sutures will be at the bottom of the space, the next a little higher, and so on until the whole space is snugly obliterated to the level of the top of the sternum.

I believe in temporary drainage, and now use the method suggested by Cheyne. A button-hole is cut through the lower flap, just above the sternum, and a small tube drawn through, the inner end of which lies in the lowest part of the wound, behind the sterno-mastoid.

A provisional suture is placed in this little wound and, when the tube is withdrawn (after 48 hours), is tied. If the pre-tracheal, or sterno-mastoid, muscles have been cut, they should now be carefully reunited and the wound in the pre-tracheal fascia closed. A running suture of fine silk closes the skin-wound, plenty of dressing applied, and the head is supported between two sand-bags. A very important precaution is to direct the nurse to control all violent movements of the head, while the patient is recovering consciousness, and to compress the dressings gently during vomiting. This latter may often be avoided by a hypodermic of morphia just before beginning the operation. The tachycardia and high temperature, which are sometimes so troublesome, may be controlled by digitaline and the local use of the ice-bags.

In case of adenoma or cystoma of the thyroid, the procedure just detailed is modified. When the gland is exposed, the capsule is carefully cut through and the tumor, solid or cystic, is enucleated. Of course, some hemorrhage from the capsule is unavoidable, but is readily controlled. Partial, or complete aphonia may follow the operation. It may result from (a) traumatism of the recurrent

laryngeal nerve; (b) traumatic tracheitis and laryngitis; or (c) hysteria. Usually the difficulty is only temporary. From a medico-legal point of view, it is interesting to note the history of one of my cases. She was a decidedly neurotic maiden lady, aged 35 years. Complete aphonia followed the operation of removing almost the whole of both lobes in a very large goitre. The vocal chords were pronounced, by the laryngologist, to be cadaveric; and the patient went home improved in every other way, but quite voiceless. Her account was sent to her, and, in reply, a rather nasty letter was received and we looked for legal complications. Suddenly, one morning, nine months after the operation, she awoke with her voice fully restored and, among other results, a letter from a grateful patient and a cheque were not the least desirable. As to the mortality of the operation, that, as you know, has been steadily declining of late years. I have notes of 33 cases operated upon, three of which were malignant and two were cases of exophthalmic goitre. I have had no death directly following the operation. One of the malignant cases, an old lady of 70, insisted on going home to the country two weeks after the operation, and, after a long railway journey, died suddenly at her own railway station, I judge from exhaustion. A second malignant case died some six months later from recurrence. The third was a case of sarcoma with very distressing dyspnea. The operation was a desperate one, artificial respiration having to be carried out during the time she was on the table. She rallied nicely and felt much relieved, but died a week later from uremia. This patient was known to have Bright's disease, but was very anxious for the operation, expressing herself as delighted with the result.

APPENDICITIS FROM THE STANDPOINT OF THE COUNTRY DOCTOR.

BY JOHN W. S. McCULLOUGH, M.D., ALLISTON, ONT.

Appendicitis is a very common and frequently fatal affection. It is the cause of the majority of cases of peritonitis in the male and of the most of those in the female, excepting those cases which arise in connection with some affection of the genito-urinary organs.

There are a few facts relating to the appendix which tend to make apparent why this organ is so liable to inflammatory affections. First of all it is understood to be a degenerate organ without any known function. Consequently it has poor nutrition. Added to this it has a scanty blood supply. There

is but one small artery from the ileo-colic branch of the superior mesenteric. Its mesentery often does not reach nearly to the distal end of the organ. It is a blind pouch with small calibre, and such slender canals are known to be liable to stricture. Its walls have no circular muscular fibres and consequently it is unable to readily empty itself of the fecal matter and various foreign bodies with which, in its dependent position, it is liable to become distended. It has a relatively large amount of lymphoid tissue in its walls. Its powers of absorption are large and the contents soon become dry and harden. Its contents from their very nature are the habitat of various bacteria. It frequently lies upon the psoas muscle and is therefore liable to irritation from the constant movement of this muscle.

Inflammation of the appendix may begin in its mucosa. The lining membrane may afford an entrance to bacteria through an erosion produced by hardened fecal matter or a foreign body. Pressure of its contents may cause stasis of the feeble circulation, and by lowering nutrition of the mucosa allow of the invasion of the colon or other bacillus. Kinking or distortion of the mesentery or a thrombosis of the blood vessel may cut off the circulation. These two factors, lowered nutrition from whatever cause and the entrance of bacteria, are the foundations of the pathology of appendicitis. Resulting from these conditions we may have either the mildest of attacks, productive simply of colic, or a local inflammation of a portion of the mucosa with eventual formation of a tiny stricture of its lumen, swelling and hyperplasia of the whole organ, ulceration, perforation, gangrene of a portion or all of the appendix, the formation of a circumscribed abscess, pus formation in the subperitoneal tissue or general septic peritonitis. The progress may be very slow and the disease may succumb to nature's efforts at a cure or it may be so rapid that a few hours may decide the fate of the patient.

If the attack is a mild one and the patient happily recovers a condition may be and frequently is left which more than ever leaves him susceptible to future attacks. The strictured condition often seen after more or less mild attacks, allows of the contents of the appendix to the distal side of the stricture becoming very hard and acting as a foreign body. Serous inflammation may have bound the organ to other portions of the intestines or to other organs, to its own mesentery or to itself. Some of these conditions may account for the constipation, the pain and the digestive disturbances seen in chronic cases.

Symptoms.—The most important symptoms are sudden acute pain in the abdomen, nausea and vomiting, with coincident or subsequent rigidity of the abdominal muscles of the right side

and tenderness in right iliac region, the pain is colicky, is spoken of by the laity as "cramps" and is due to reflex irritation carried through the branches of the superior mesenteric plexus. The nausea and vomiting are due to irritation of the sympathetic nerves. The rigidity is due to the fact that the muscles are striving to protect the tender organ underneath while the tenderness itself shows that peritonitis has commenced.

While these are the earliest and most characteristic symptoms there are usually some fever and increase in the pulse-rate. Some authorities instruct us to pay little attention to the pulse and temperature, yet they undoubtedly when they are carefully considered, afford some assistance. If the affection is due to the colon bacillus, which perhaps the larger number of these cases are, the temperature and pulse may be but little elevated. If due to a streptococcus or mixed infection the temperature may reach 102° to 3° F or more with a correspondingly rapid pulse. With the condition of perforation or gangrene of the appendix the pulse and temperature may be normal or subnormal. If the case is making unfavorable progress the tenderness may increase and may be elicited by pressure on the left side. There may be more or less distention of the abdomen. Delirium, persistent vomiting, signs of shock, and chills are unfavorable symptoms. The condition of the bowels may be unchanged or there may be constipation or diarrhea. The patient's face may show anxiety. The appetite is usually gone. Hiccough is a most unfavorable symptom.

Diagnosis.—A correct diagnosis and especially an early one is most important. Fortunately in most of cases when seen early it is not particularly difficult, but it is much more difficult and often well-nigh impossible to say at a later period just what condition will be found inside the abdomen. I have known cases operated on within fifteen hours after the onset of first symptoms and a circumscribed abscess found, and I have known others in which the attending surgeon refused operation (not believing it necessary as the patient appeared to be improving) to subsequently have a large collection of pus in the abdominal cavity. Occasionally pain and tenderness may be confined to the left side. These cases are ones in which there is either a long appendix pointing towards the left side or else there are adhesions confining a branch of a nerve through which the pain is reflexly carried. One of the earliest chronic cases I saw had no pain except in the region of the lower border of the ribs on the left side. The appendix was hard, bent on itself like one's flexed little finger and with its tip adherent to the caecum. Following its removal there has been no pain for the last seven years. The cardinal symptoms

of sudden acute pain beginning in the region of the umbilicus with nausea, vomiting and rigidity of the muscles, followed by tenderness over McBurney's point are the ones to be relied on in making a diagnosis.

We will require to differentiate between Appendicitis and

1. Tubo-ovarian disease.
2. Affections of the Gall-Bladder and Ducts.
3. Affections of the kidney.
4. Affections of other portions of the intestines.

1. *Tubo-Ovarian Disease*.—In this disease, which is more common on the left than on the right side, the pain is not usually so sudden in its onset nor so colicky. There is not the rigidity of the abdominal wall which is found in appendicitis. A history of genito-urinary disease if it can be obtained will aid in clearing up the diagnosis. Most helpful of all will be an examination under anesthesia.

In ectopic gestation the sudden collapse following rupture of the sac may be confounded with perforation in appendicitis. The puerperal age and the symptoms of pregnancy if such can be obtained will be of value in separating the affections.

2. *Affections of the Gall-Bladder and Ducts*. In hepatic colic the pain is found in the upper part of the abdomen and radiates towards the right shoulder. There may be tenderness over the gall-bladder, vomiting is more persistent than in appendicitis. The temperature is irregular, high at sometimes and low at others. There is often jaundice.

In cases of collapse from rupture of the gall-bladder an error might be made, usually, however, there is some history which will clear up the case. But in other cases nothing but an exploratory incision will diagnose the condition.

3. *Renal colic* may be confused with appendicitis. I recollect seeing a patient in consultation who had an unmistakable attack of renal colic and along with it appendicitis, for which he was operated on in a few days.

4. *Illustrative of the difficulty in separating this from other intestinal affections*, permit me to give a few notes of a rather unique case I saw a short time ago. The patient was a hearty baby girl, sixteen and one-half months old. She had some pain and vomiting at 10 p.m., Sunday, for which her mother gave a dose of castor oil. As a result she slept all night and at 1 p.m., Monday, the bowels moved freely. She had a return of the pain and vomiting. I saw her at 3 p.m., and found her in a state of shock, for which I gave a saline enema, mustard bath and gr. one-sixtieth strychn. sulph. hypodermatically. She was relieved for a couple of hours. On return of pain a second enema was given. There was a slight discharge of blood from the bowel but no tenemus. The pain and vomiting recurred

with greater severity. There developed tenderness and rigidity on the right side of the abdomen, with perhaps a slight distention. A colleague in consultation with me that evening agreed as to the likelihood of appendicitis but suggested that considering the severe shock and the passage of blood that there might be a volvulus. There being an increase of the symptoms I did a celiotomy next morning, 36 hours after onset of first symptoms, and removed a highly inflamed appendix almost black for an inch at the tip, and found in addition a volvulus of about six inches of the ileum just above its junction with the large bowel. There was a knuckle of the ileum pushed in the angle formed by the cæcum and its mesentery and adherent there. About four inches of the ileum were dark and angry looking. Hot gauge compresses were assiduously applied and after half an hour the circulation was restored and the abdominal wound closed without drainage. The little patient has made a prompt recovery. In this case I cannot say which was the primary condition, nor whether one had anything to do with the production of the other.

Treatment.—In the light of our knowledge of the pathological conditions found in appendicitis the treatment in all but the mildest cases should be surgical. At the outset the patient should be given an enema and a mild laxative such as castor oil or repeated small doses of calomel. For the relief of pain chloroform water or spirits of chloroform may be given as required.

Every case must be treated on its own merits, but any case that does not show improvement or which gets progressively worse during the first 24 hours should be operated upon. Mild cases undoubtedly get well without much treatment of any kind, but with due deference to those who pin their faith to the opium or morphine treatment I doubt if it ever effects anything in appendicitis except to ease the pain and fool everyone about the case who is not on the alert as to its masking qualities.

But opium has its place all right, and having decided upon operation and while making preparations to open the abdomen a dose of morphine, combined with atropine and strychnine, will do good service in quieting the nerves of the patient and will leave him in better condition for operation than if he is allowed to suffer without it. The dose should not be large, and its purpose understood.

It is not so easy to operate in the country as in a city. But notwithstanding the absence of well equipped operating rooms, the best surgical appliances and good nurses, good results are obtained in the surgical treatment of this affection by the country doctor, and for two reasons. He can operate at the earliest possible moment when he has the best prospect of success, and the absence of noise and dust incident to a city

with the benefit derived from pure air perhaps go far to make up for what he may lack in surgical skill and surroundings.

The operation in uncomplicated cases of appendicitis is a comparatively easy one, and with ordinary equipment and scrupulous attention to aseptic conditions these cases do well. If the country doctor is constantly on the alert in appendicitis cases few of them should become complicated. If they go for days or weeks without improvement a condition may be eventually found which will tax the skill of the most experienced.

In cases which have gone to the formation of a local circumscribed abscess the pus should be washed out or gently swabbed out. If the appendix, or what remains of it, can be readily recognized it may be removed, but the greatest care must be taken not to disturb the limiting wall of the abscess. In these abscess cases we should be reasonably satisfied that more than one pus collection does not exist. Cases of general septic peritonitis should be judged on their merits, and we should operate or not just as we deem best in the interest of our patients. For the sake of our reputation perhaps a large number of these cases had best be left alone.

Finally, in all cases where the country doctor decides to operate he will but conduce to the patient's comfort and safety, and his own success and peace of mind by having a good trained nurse. Perhaps no other adjunct except his skill as a diagnostician and an operator will make so much for success as this factor.

The mild cases should be operated on in the interval. In chronic cases all are agreed as to operation. Fulminant cases require to be operated on without an hour's delay.

Editorials.

AMALGAMATION OF TORONTO MEDICAL COLLEGES.

Negotiations of an important character have been going on between the authorities of the universities of Trinity and Toronto for about two years. Considerable progress was made last autumn; but for a season thereafter both sides appeared to be *marking time*. In the meantime, Trinity was becoming stronger and more hopeful, and her many friends were taking an unusual active interest in her welfare. A few weeks ago Trinity Medical College became the Medical Faculty of Trinity University. The university authorities proposed to erect and equip new buildings for their new faculty.

While it was understood that the university and its medical faculty would stand by each other, the whole complex question of federation and amalgamation became to a certain extent simplified. That is to say, Trinity's absorption of the medical college meant that if federation in Arts took place amalgamation of the medical faculties must occur at the same time. A short time ago it was rumored that amalgamation would be accomplished in a very short time. It was thought by many that a satisfactory union of the two faculties would involve much time and many difficulties. Fortunately, however, the matter had before received very careful consideration by teachers on both sides, and now we are told by the public press that amalgamation is not a dreamer's dream, but probably an actual fact, although at the time of writing no official announcement has been made.

As far as the two teaching staffs were concerned both sides have had to concede much. We cannot now discuss particulars which have not yet been made public, but hope to be able to do so in the near future. We may say, in a general way, that the majority of both faculties are well satisfied with present arrangements, so far as they have been completed. We regret that Dr. W. B. Geikie is still hostile to the scheme, as his letter published in this issue clearly indicates.

Considerable interest has been manifested by outsiders in the negotiations respecting amalgamation and federation. Dr. Roddick, at the recent convocation proceedings at McGill University, spoke as follows: "The competitors to the west and south of us are growing stronger every day. The faculties of medicine of Toronto and Trinity Universities have practically completed a scheme of amalgamation. These, singly, were very powerful competitors, but if they join their forces their strength will be increased fourfold." We believe it is now generally conceded that amalgamation, if completed as now expected, will create an extremely strong and well-equipped school, and will advance the cause of higher medical education in Ontario.

GREAT BRITAIN AND FRANCE.

Canadians take much interest in the relationships existing between Great Britain and France and are much pleased at the present *entente cordiale* between the two nations, which has been established largely through the visits of King Edward to France and M. Loubet to England.

The *British Medical Journal* in making certain references to M. Loubet's visit to London and especially to the French Hospital in Shaftesbury Avenue, concludes an interesting article as follows: "The debt which science owes to France is nowhere more heartily recognized than in this country. In physics, astronomy, chemistry, physiology, and pathology especially, we know how the wide and brilliant generalizations, and the accurate and painstaking researches of Frenchmen of science have illumined many dark places, and how the acute logical genius of the French nation has often produced order out of chaos by systematising knowledge.

"The medical profession, at any rate in this country, will never forget the debt owed by physiology to Claude Bernard, by clinical medicine to Trousseau, and by pathology and hygiene to Pasteur, nor will it ever forget the welcome extended to our Lister at the Pasteur Jubilee in Paris. We venture to believe that the sincere respect which has always existed between the men of science of the two nations has had a not unimportant influence in bringing about the present *rapprochement*."

CANNED FOODS.

The consumption of "tinned" or "canned" fish, meat, vegetables, and fruit is largely increasing, and the number of people who camp in summer and use daily one or other of these articles is considerable. This practice is not free from danger. The tin can, though hermetically sealed, acts in warm weather somewhat like an autoclave, and the long-continued maceration of complex organic substances, as well as the action of organic acids upon the impure tin and solder used in cheap cans, favor chemical changes which may render the food unpalatable and perhaps unwholesome.

Some cases of poisoning from canned salmon were investigated last year by the Dominion Government, and a good many of our readers could furnish similar cases from their own case-books.

A good deal might be done to improve canned food, but in the meantime there is one eminently practical suggestion which was apparently first made by H. E. Mann, Medical Officer of the East African Protectorate. This suggestion is that all manufacturers of canned foods should be compelled by law to stamp on the tins the date on which the food was canned. We think this law should be passed at once in Canada.

THE ONTARIO MEDICAL COUNCIL.

The recent meeting of the Ontario Medical Council did not furnish much in the way of new legislation, but was quite interesting in certain respects. The members showed a disposition to discuss important matters in a more judicious spirit than usual. There was but little of that acrimonious sort of a heated warfare which so materially marred many of the meetings in recent years.

The Property Committee, of which Dr. Thorburn is chairman, advised that the Council again direct that every effort be made to dispose of the present office building, and should this be ineffectual, to rearrange the mortgage on the premises before November 1st. During the year the rentals from the offices in

the building amounted to \$4,200, and the mortgage was reduced \$5,000, leaving it now at \$55,000.

The Discipline Committee, in their report called the attention of the Council, and of the members of the medical profession generally, to the fact that all recommendations from the doctors of the province regarding contraventions of the Medical Act, have been treated confidentially, and stated that they had received several communications, complaining of fifth year students violating the Act, and regarding medical practitioners who were shielding men in practice who had not registered.

A committee was appointed to consider and report on the advisability of the Council seeking legislation against all forms of quackery not covered in the Medical Act. It comprises Drs. Gray, Campbell, Mearns, Glasgow, Stuart, Britton, and Macdonald.

A sub-committee was also instructed to consider carefully many matters connected with the curriculum, and especially as to matriculation and a programme for the fifth year, and report at the next meeting.

CANADIAN MEDICAL ASSOCIATION.

We learn from the General Secretary of the Canadian Medical Association that the coming meeting, which will be held in London, August 25th to 28th, is likely to be successful in all respects. The following is a partial list of the addresses and papers promised:

President's Address, W. H. Moorhouse, London; Address in Medicine, James Stewart, Montreal; Address in Surgery, Alex. Hugh Ferguson, Chicago; Address in Gynecology, Matthew D. Mann, Buffalo; "The Treatment of the Inebriate," A. M. Rosebrugh, Toronto; Paper (title to be announced), Perry G. Goldsmith, Belleville; "Total Ablation by Bisecting the Uterus," T. Shaw Webster, Toronto; "Inguinal Hernia of an Undeveloped Uterus and Appendages with Presentation of Specimen," R. Ferguson, London; Paper (title to be announced), A. Laphorne Smith, Montreal; "Report of Two Cases of Hour-Glass Contraction of Stomach," Henry Howitt, Guelph; "Cardiac Affections in Influenza," E. G. Wood, Nashville, Tenn.; "Amyotrophic

Lateral Sclerosis," A. McPhedran, Toronto; "Orthopedic Surgery at the Present Time," G. W. Wilson, Montreal; "Internal Medication for Direct Remedial Effect," Geo. M. Aylesworth, Collingwood; "The Rôle of Eye-Strain in Civilization and Medicine," George M. Gould, Philadelphia; "The Interrelations of Diabetes and Other Constitutional States," Geo. F. Butler, Alma, Michigan; "Gunshot Wound of the Upper Arm, with Non-union of Humerus and Destruction of Musculo-Spiral Nerve—Operation, six months later; Recovery," Hadley Williams, London; Discussion on the "Treatment of Typhoid Fever," W. P. Caven, Toronto; John Herald, Kingston; W. B. Thistle, Toronto; H. A. McCallum, London; Discussion on the "Diagnosis and Treatment of Tubercular Peritonitis," A. B. Ather-ton, Fredericton, N.B.; A. Groves, Fergus; Herbert A. Bruce, Toronto, and L. Coyteux Prevost, Ottawa; "The Technique of Gastro-Enterostomy," Theodore A. McGraw, Detroit; "The Relation between the General Practitioner and the Specialist in regard to Intra-nasal Work," J. Price Brown, Toronto; "Personal Experiences with Alexander's Operation," H. Meek, London; "Anto-infection," E. Hornibrook, Cherokee, Iowa; "The Country Doctor," J. S. Sprague, Stirling; "A Lantern Lecture on Open-Air Life in the Treatment of Pulmonary Tuberculosis," J. H. Elliott, Gravenhurst; "The Size of the Pupil as an Aid to Diagnosis," T. G. Duncan, Toronto; "Thrombosis of the Femoral Vein Following Aseptic Laparotomy," E. B. Secord, Brantford; "Gastro-Enterostomy, with Report of Cases," Ingersoll Olmstead, Hamilton; "Radical Cure of Hernia," A. Groves, Fergus; "The Decline and Fall of Atropine," G. Stirling Ryerson, Toronto; "The Medical Treatment of Diseases of the Nose and Throat," John Hunter, Toronto; "An Interesting Case," G. Herbert Burnham, Toronto; "Concealed Accidental Hemorrhage," Adam H. Wright, Toronto; "The Surgical Treatment of Bunions by Tubby's Operation," James Newell, Watford, Ont.

RAILWAY TRANSPORTATION.

Intending delegates to the thirty-sixth annual meeting of the Canadian Medical Association which will be held at London, Ont., on the 25th to the 28th of August, should take careful note of the following instructions as regards transportation

rates. As a good many wrote to the General Secretary last year for forms to fill in, it might be well to state that no such forms are required. All a delegate has to do is to purchase a single first-class ticket to London and at the same time asking the agent at starting-point for a *Standard Convention Certificate*. These certificates, when signed by the General Secretary, will entitle holders thereof to return fare free providing there are 300 or more at the meeting holding *Standard Convention Certificates*. These arrangements apply as well to the wives and daughters of physicians.

MARITIME PROVINCES.

Delegates travelling to London on the Standard Certificate plan *via* the Intercolonial Railway to Montreal will be given return fare free from Montreal east provided that there are ten or more delegates in attendance at the meeting holding said certificates.

MANITOBA AND THE TERRITORIES.

From Manitoba and the Canadian North-West one-way tickets to be purchased to London and Standard Certificate being secured at the time of purchase, these certificates when presented at London, duly signed by the General Secretary, will entitle the holder thereof to be returned free if 300 or more paying railroad fare are in attendance. If less than 300 or more than 50 the same arrangements as for Ontario and Quebec, viz., one-third fare return will be in vogue. Tickets purchased west of Port Arthur, purchased in time to reach London for the convention, will be accepted for return up to and including September 15th. Delegates taking the Superior and Huron Lake route one way will, on presentation of certificates, be charged \$4.25 extra. If lake route is used both ways the charge will be \$8.50.

BRITISH COLUMBIA.

The Canadian Pacific Railway officials at Winnipeg have not been able to make arrangements for British Columbia up to the present time. Announcements of these will be made in the daily papers of Vancouver and Victoria, if secured, some time during the first week in August.

ENTERTAINMENTS.

The Entertainment Committee at London proposes to entertain visiting delegates somewhat as follows :

On Wednesday afternoon a reception will be held at the Kennels for the visiting ladies by the ladies of London. On the same afternoon at, about 4 p.m., the members of the Association will be entertained at Springbank, London's pleasure resort. Leaving Springbank at about 5.30 p.m., the delegates will be taken to the London Asylum grounds, where they will be entertained by the Provincial Government for the balance of the evening. On Thursday, through the kindness of Messrs. Parke, Davis & Co., the Entertainment Committee have provided for an excursion to the celebrated laboratories of this extensive pharmaceutical house at Walkerville and Detroit. Arrangements have been made for a special vestibuled train to leave London at 8 a.m. sharp, Thursday. Walkerville will be reached at about 10.30 a.m., and a visit will be made to the Walkerville laboratories. The delegates will then be taken for a trip up the river, luncheon to be served on board. They will be landed at Messrs. Parke, Davis & Cos' dock at the Detroit laboratory for the inspection of their scientific building at about 2.30 p.m. At the conclusion of this inspection other arrangements will be made for the entertainment of the members until 6.30 p.m., when a banquet will be tendered to the members of the Canadian Medical Association at the Russell House, Detroit, by Messrs. Parke, Davis & Co. Between 9.30 p.m. and 10.30 p.m., the physicians will be taken to the Brush St. depot, Detroit, and return to London by a special train.

HOTEL ACCOMMODATION, ETC.

During the coming meeting of the Canadian Medical Association in London the several large hotels will be able to accommodate most of the visiting members, and in addition to this, the Reception Committee having charge of receiving the visiting delegates will have lists of good boarding-houses, where those wishing them may have rooms. The Reception Committee at London hopes that no one will stay away fearing the lack of accommodation, as the London medical men will do their utmost to make their stay agreeable. Dr. J. S. Niven, 423

Colborne St., who is Chairman of the Reception Committee, will be pleased to secure rooms for anyone writing for them in advance. Anyone desiring any further information should address either the Local Secretary, Dr. Hadley Williams, Park Avenue, London, or the General Secretary, Dr. George Elliott, 129 John St., Toronto.

The following graduates in medicine and members of the College of Physicians and Surgeons of Ontario have been appointed house surgeons at the Toronto General Hospital for the year 1903-1904:—From Toronto University: W. A. Cerswell, Bond Head; J. A. S. Graham, Toronto; N. T. McLaurin, Toronto; E. M. Walker, Toronto; A. B. Wright, Toronto; alternates, G. A. Winters, J. A. Parry. From Trinity University: Edgar Brandon, Cannington; R. W. Irving, Ingersol; M. J. Harris, Glencoe; W. A. McCauley, Warkworth; H. Rundle, Emsdale; alternates, M. Cook, T. H. Bell. The following having completed their term are now retiring, after a year's service on the house staff, 1902-1903: J. D. Chisholm, Berlin; S. Johnston, Toronto; R. Neil Kyles, Camilla; W. H. Lowrey, Guelph; J. A. McCullum, Toronto; R. H. Mullin, Hamilton; R. Parsons, Emery; A. E. Rutherford, Owen Sound; P. W. Saunders, Toronto; G. W. Ross, Toronto.

Hospital for Sick Children, Toronto: James L. Biggar, Toronto; W. Edward Gallie, Barrie; Allen W. Canfield, Woodstock; R. A. Fraser, Toronto.

Grace Hospital, Toronto: R. W. Rutherford, C. A. Warren and G. E. Wilson.

St. Michael's Hospital, Toronto: C. S. Wainright, F. J. Doherty, Jno. Baldwin, B. Sullivan.

Western Hospital, Toronto: W. A. Graham.

City Hospital, Hamilton: C. E. Freeman, D. P. Kappel.

General Hospital, Ottawa: D. M. McCarthy.

Sir Gilbert Parker entertained at a luncheon in the House of Commons, July 8th, delegates and representatives of the various colonial universities. The representatives of Trinity University were Mr. Christopher Robinson, Chancellor, and Mr. Travers Lewis; Toronto University, Drs. Reeve and Cameron; McGill University, Lord Strathcona and Principal Peterson. The Colonial Secretary, Mr. Chamberlain, delivered an interesting address.

Personals.

Dr. P. E. Doolittle has been elected President of the Toronto Automobile Club.

Dr. R. D. Rudolf has gone to Germany, where he will remain about two months.

Dr. Jos. W. Lesslie, of Toronto, who went to England early in May, returned July 15th.

Dr. H. A. Galloway, of Toronto, is occupying a lodge on Eagle Mount, near Peterboro'.

Dr. C. S. Draeske (Tor. '93) has been appointed Surgeon to the C. P. Steamship *Empress of India*.

Dr. A. Orr Hastings went to Prout's Neck, Maine, July 21st, and expected to remain there a few weeks.

Dr. John L. Davison returned to Toronto July 16th, after a cruise from Quebec to the coast of Labrador.

Dr. L. F. Miller, of Toronto, is at present a guest at the "Manor Richelieu," Murray Building, Quebec.

Dr. J. Frank McConnell (Tor. '95), of Las Cruces, New Mexico, is spending a few weeks with his parents in Toronto.

Dr. George Fierheller (Trin. '84), who practised in Markham for nineteen years, has removed to 535 Sherbourne Street, Toronto.

Dr. J. M. Waters (Trin. '02) has been appointed to the position recently held by Dr. W. Russel, in the important Mission at Indore, Central India.

Dr. Murray McFarlane left Toronto July 17th for a six weeks' trip to Muskoka, Lake Nipissing, and Lake George in the Adirondack District.

Dr. S. M. Hay, of Toronto, is spending the greater portion of the summer in Muskoka. Dr. F. Large, of Listowel, is attending to his practice during his absence.

Dr. Henry M. Featherstone (Trin. '95), of Toronto, left July 21st, for Montreal and sailed for Glasgow July 22nd. He expects to spend some time at post-graduate work in Edinburgh and London.

Dr. J. Orlando Orr, of Toronto, visits his family at the King's Royal, Owen Sound, every Saturday, but returns as early as possible on Monday morning to look after his exhibition, which, thanks to his energy, tact and ability, promises to be the best that Toronto has seen.

At the recent meeting of the Ontario Medical Council the following officers were elected: President, Dr. J. A. Robertson, Stratford; Vice-President, Hon. Dr. Sullivan, Kingston; Treasurer, Dr. H. Wilberforce Aikins, Toronto; Registrar, Dr. R. A. Pyne, M.P.P., Toronto; Solicitor, Christopher Robinson, K.C.; Stenographer for College, Alex. Downey; Auditor, Dr. J. C. Patton, Toronto; Prosecutor, Chas. Ross, Toronto.

Obituary.

HERBERT MICKLE, M.D., M.R.C.S., Eng., L.R.C.P., Lond.

Dr. Mickle, a graduate of Trinity University in 1880, died at Asheville, N.C., July 21st. He practised in Buffalo for some years, and was Associate Professor of Surgery in Niagara University. In January last he accepted the position of director of the Cleveland Branch of the New York Life Insurance Company. He went South in June on account of ill health, and was supposed to be recovering when news came that he was dead. The remains were buried in Toronto, July 25th. Among his relatives who survive are Mrs. W. H. Ellis and Mrs. Bertram Spencer, of Toronto, sisters.

W. J. NEILSON, M.D.

Dr. W. J. Neilson, ex-M.P.P. for North Winnipeg, died July 17th, in the Winnipeg General Hospital, aged 49, after a long illness from some affection of the lungs, caused by the entrance of a foreign body into the trachea about a year ago. He was a native of Perth, Ontario, and a graduate of McGill in 1873. From that date until the time of his illness he practised in Winnipeg, and was one of the most popular physicians of that city.

DONALD MACLEAN, M.D.

Dr. D. Maclean, of Detroit, died July 24th from gastro-enteritis, aged 64. He was a Canadian, born in East Northumberland, Ontario. He received his medical education in Edinburgh, where he and the late Dr. Carson, of Toronto, worked together for a time under Syme. After graduating in 1862 he practised for eight years in Kingston, Ont., with the exception of 1863 and 1864, when he was an acting surgeon in the United States army. He went to Detroit in 1870, and held the chair of surgery in the University of Michigan from 1870 till 1889. He was for a number of years chief surgeon to the Michigan Central and Grand Trunk Railways, and was president of the American Medical Association in 1894.

ADDRESS TO DR. W. B. GEIKIE.

We, the Corporation of Trinity Medical College, in accepting the resignation of Dr. Walter B. Geikie, D.C.L., F.R.C.S.E., L.R.C.P., London, Dean of the Faculty and Professor of the Principles and Practice of Medicine, desire to place on record our sense of the debt of gratitude owing to our late associate, for his two and thirty years of earnest and self-sacrificing labor on behalf of the College. At all times, in season and out of season, by night and by day, year after year, the cause of Trinity Medical College has ever been foremost in his thoughts, and the one object around which his affections centered.

With every energy and faculty he possessed, Dr. Geikie labored to promote what he considered the best interests of the College which was so dear to his heart, and owing to a large degree to these unwearied efforts, Trinity Medical College has attained the present proud position.

It is with feelings of regret that the Corporation parts with him who is the father in medicine of most of its members, who has presided over its meetings, and piloted its ship through so many breakers, and we, one and all, desire that Dr. Geikie may be spared for many years to enjoy the satisfaction of well-earned repose.

Engrossed and signed by all the members of the Corporation, J. A. Temple, F. L. Grasett, W. T. Stewart, Charles Sheard, G. Sterling Ryerson, Luke Teskey, John L. Davison, G. A. Bingham, N. A. Powell and D. J. Gibb Wishart.

Dated June 14th, 1903.

Correspondence.

DR. W. B. GEIKIE'S LETTER OF RESIGNATION.

HOLYROOD VILLA,
52 Maitland St., July, 1903.

DEAR SIR,—I send you herewith a copy of my letter of withdrawal from my position as Dean of Trinity Medical College. It explains itself fully, and many of my friends desire to understand clearly the sole ground (for there was no other) which led me to take this step. I have always regarded amalgamation as extinction pure and simple, and could not therefore sanction it in the case of the Medical College to which I had given my best

services for so many years of my life. I know also, that our students and graduates everywhere, feel as strongly as I do on this subject, for with myself they considered the College had in its two last calendars fully pledged itself as to its course on this subject.

Yours faithfully,

WALTER B. GEIKIE.

To the Corporation of Trinity Medical College:

GENTLEMEN,—As I find you are about to discuss the subject of the amalgamation of our Medical Faculty with that of another institution, I feel myself compelled with the greatest reluctance, and only from an imperative sense of duty, to send in my withdrawal from the position in the Faculty which I have so long had the honor to hold. As you are aware, I have been closely connected with it since its re-organization, at my own suggestion, early in 1871, and since then I have served the College with all the zeal and energy I possessed. For the long period of thirty-two years I have given ungrudgingly to my College duties quite two-thirds of my whole time, because the full success of the institution imperatively required me to do so.

For many reasons I was in perfect accord with the resolution recently adopted, that Trinity Medical College should now revert to her original position as the Medical Department of Trinity University, especially as was very wisely suggested by the Rev. Provost Macklem, that our College charter would continue to exist, and will be held by the Financial Board of the University, and that the Corporation will consist of the members of that Board and the medical members, as agreed upon. Thus governed, as the Medical Department of Trinity University, the College was, in my opinion, quite certain of a continuance of that success which she has most deservedly earned by many years of laborious, faithful, and successful teaching.

Closely connected with this proposition, and unanimously approved by the Corporation, and given to the press by members of the Financial Board of Trinity University, was the construction at an early date of such additional medical buildings as might be required, on sites close to our present College, near the General Hospital. These suggested changes, taken together, appeared to all of us exceedingly judicious, and well calculated to ensure the perpetuation of the Medical Department of Trinity University for generations, as well as to enhance in an ever-increasing degree its usefulness and success. Some unavoidable reasons have prevented this plan from being carried out at once.

Before, however, these arrangements had been in any degree

completed, I find that negotiations are being undertaken of an entirely different character, having in view, not the perpetuation of a distinct Trinity Medical Faculty, and of the long-continued and phenomenal success which that Faculty has achieved during the more than three decades of its existence, but the bringing about an "amalgamation" of our Medical Faculty with that of another University.

Of this proposal I do not and cannot approve. It was mooted some time ago, and I was then, as now, strongly opposed to it, and I can truly say that all (for the exceptions are very few and far between) of our sixteen hundred medical graduates, and all the members of successive classes whom I have ever heard refer to amalgamation, are as much opposed to it as men can be, and I do not wonder at this, for they realise that amalgamation would mean, and must mean, no matter what terms may be offered, extinction only, both complete and prompt.

My *esprit de corps* at once rose against such a proposal. I could not bring myself by any effort, to entertain it. It so clashes with my sense of duty and of honor to my dear old College, and so conflicts with my common-sense when I think of the past success of so many, many years, and of the certainty of success in the immediate future, provided the proposed new buildings were only a little more than begun on the proposed sites (and this could easily be financed with the help actually promised to us), that I felt there was nothing left for me to do but simply to withdraw, as the only possible way of expressing my intense disappointment and disapproval of the "amalgamation" suggestion.

I know our graduates and students think as I do, as well as a very large section of the public, comprising all our true friends everywhere.

It was never proposed, so far as I know, to hand over our own charter to Trinity University, a charter obtained with so much labor (for I had that to do) and at a very considerable outlay, for the mere purpose of effecting an amalgamation of our Medical Faculty with that of the University of Toronto, and to hand it over in order to secure our own immediate and complete extinction as a teaching body. How can we, if we refer to the fly-leaf published in our Calendar and widely distributed for the past two years, proceed to take the very course we had expressly proclaimed ourselves as having finally and definitely decided against? (See Calendars for 1901-02 and 1902-03.) The fly-leaf and the present discussion of "amalgamation," if framed together, would be truly a curiosity. The plan which I, as well as all our students, expected our University and College to take, and in the approval of which we were

unanimous, was that announced from the chair at the last Trinity University Convocation and published in all the papers, viz., to secure the complete welding of Trinity University and our Medical Faculty, and we very sincerely hoped and believed that we would shortly see a move made in the direction of building on the sites which had been approved of.

I beg to remind the members of the Corporation that in withdrawing solely because of the "amalgamation" question, I have taken no part whatever in it, and do not intend to do so.

As you are aware, gentlemen, I have certain legal vested rights in Trinity Medical College which the corporation will see to, as a matter of course, and secure to me.

However I may regret, and I do greatly regret, the present situation having been brought about, I cannot, as Dean of the Medical Faculty, do otherwise than take my present course, holding the views I do, in common with our graduates, our students, and that section of the public which has clung to us ever since our work began.

Faithfully yours,

WALTER B. GEIKIE.

HOLYROOD VILLA, 52 Maitland St.,

Toronto, June 4th, 1903.

TRINITY UNIVERSITY, TORONTO.

To the Graduates and Undergraduates in Medicine of Trinity University and to all the Students of Trinity Medical College:

GENTLEMEN,—It is important that you should have a clear understanding of what steps have been taken by the authorities of the College and University towards the federation of Trinity University with the University of Toronto, and the amalgamation of the two medical faculties, and how such arrangements will effect those at present registered as students of Trinity Medical College.

With this object in view we have much pleasure in submitting to you the following statement, by which you will see that your interests have been carefully and zealously conserved, and that provision has been made for the completion of your medical course under the most favorable auspices.

As announced at the Medical Convocation last May arrangements were concluded whereby the faculty of Trinity Medical College became the Medical Faculty of Trinity University. One important feature of the changes proposed in this connection,

was the erection of new buildings adjoining the present Trinity Medical College. While the details of this proposal were being worked out, it was strongly urged upon the authorities of the Medical College and of the University that the interests of all medical students in Toronto, both present and future, would be better served by co-operation with the Medical Faculty of the Provincial University, than by the perpetuation of two rival institutions in medicine. It was pointed out further, that the erection of the proposed building would necessarily mean the indefinite postponement of such co-operation, to the disadvantage of medical education generally and the weakening of both institutions. Accordingly the plans which had been commenced were postponed pending the full discussion of this important question, the result being an almost unanimous decision in favor of co-operation and the acceptance of the draft appended hereto for an amalgamated faculty in medicine, in which provision is made for every member of both faculties, with the exception of the former Dean of Trinity Medical College, who resigned his position during the course of these negotiations. We desire to take this opportunity of expressing our warm appreciation of the long, faithful and valuable services of Dr. Geikie, who has been such a power for good in our Medical College during the past thirty-three years. In this expression of appreciation we are sure every student of the College will join most heartily.

By reference to the subjoined list of the proposed amalgamated faculty you will at once see what excellent provision has been made for advancing the best interests of medical education in Toronto. It is generally acknowledged that such a faculty, possessing as it does, ability, strength and efficiency in medical teaching, will render signal service to the entire medical profession of the province, and we confidently anticipate that under the new conditions now created Toronto will more than ever occupy a proud and leading position among the educational centres of this Dominion and continent.

When not only the strength and efficiency of the new amalgamated faculty is considered, but also the excellent and ample provision for all branches of medical teaching in the now completed new medical buildings of the University of Toronto, and we reflect that before our new buildings could have been erected and equipped (in view more especially of the delay necessarily incident to the unsettled conditions of the labor market) most of the present students of Trinity Medical College would have been far advanced in their course, we feel confident that they will frankly recognize that their best interests have been served by the arrangements outlined in this letter.

As bearing more particularly upon the status of matriculants

and the rights of non-matriculated students of Trinity Medical College, we beg to draw attention to the following provisions:

"The non-matriculated students of Trinity Medical College shall be allowed two years from the date of federation for matriculating in Trinity University, under the regulations in force in that University at the time of federation.

"Those who have already matriculated, as well as those matriculating within the time specified above, will have the option of either proceeding to the degree of M.D., C.M., of Trinity University, on the conditions under which they entered, or proceeding to a M.D. degree in the following year, if desired, from the Provincial University. In both instances students will attend and receive lectures from the amalgamated faculty.

"All graduates in medicine of Trinity University will be enrolled in the Provincial University, and their names will appear in the various Calendars with their degrees designated."

As defining more clearly the status of graduates and undergraduates under federation we quote the following extract from the Articles of Agreement:

"All graduates and undergraduates of Trinity University, excepting those in theology, are, from and after the date of federation, to have and enjoy the same degrees, honors and status in the University of Toronto as they previously held in Trinity University, and shall be entitled, subject to the provisions of the University Act of 1901, to all the rights and privileges pertaining to such degrees and status so long as such federation continues."

The Fellowship of Trinity Medical College (as the Medical Faculty of Trinity University) will be granted to such students as are now enrolled in Trinity Medical College upon their complying with the requirements and passing the examinations necessary to entitle them to receive such fellowship.

The Corporation of Trinity Medical College and Trinity University wish their graduates and undergraduates to be clear upon the point that their interests, both now and for all time, have been most carefully safeguarded, and they will enjoy the same rights and privileges in the Provincial University, of which institution each one of them will under federation form an integral part, that they do now enjoy and have heretofore enjoyed as students and Graduates of Trinity University.

It is highly desirable that the students who have been in attendance at Trinity Medical College should register their names with Dr. Primrose, the Secretary of the Medical Faculty, Biological Department, Queen's Park, Toronto, at as early a date as possible, as seats in the lecture theatres are assigned according to priority of the date of registration.

No fee will be required from students in the third and fourth years. Students of the second year will require to make a locker deposit of \$2, and those in the first year the registration fee of \$5.00, in addition to the locker deposit.

Signed on behalf of Trinity University,
T. C. S. MACKLEM, *Vice-Chancellor.*

Signed on behalf of Trinity Medical College,
J. A. TEMPLE, *Dean.*
CHAS. SHEARD, *Treasurer.*
D. J. GIBB WISHART, *Secretary.*

Toronto, July 27th, 1903.

PROFESSORS, LECTURERS AND DEMONSTRATORS.

ANATOMY.

Professor and Director of the Anatomical Department:
A. Primrose, M.D., C.M., Edin.

Associate-Professor: H. Wilberforce Aikins, B.A., M.B., Tor.

Demonstrator: C. B. Shuttleworth, M.D., C.M., Trin., F.R.C.S.,
Eng.

Assistant-Demonstrators: W. J. McCollum, M.B., Tor.; W. J. C. Malloch, B.A., M.B., Tor.; T. B. Richardson, M.D., C.M., Trin., F.R.C.S., Edin.; George Elliott, M.D., C.M., Trin.; C. P. Lusk, M.D., C.M., Trin.; S. W. Westman, M.B., Tor.; E. S. Ryerson, M.D., C.M., Trin.; E. R. Hooper, B.A., M.B., Tor.; W. J. Wilson, M.B., Tor.; A. C. Hendrick, M.A., M.B., Tor.; A. J. McKenzie, B.A., LL.B., M.B., Tor.; D. McGillivray, M.B., Tor.

SURGERY.

Professors of Surgery and Clinical Surgery: I. H. Cameron, M.B., Tor., F.R.C.S. Eng.; F. LeM. Grasett, M.B., C.M., F.R.C.S., Edin.; G. A. Peters, M.B., F.R.C.S., Eng.; L. Teskey, M.D., C.M., Trin.

Associate-Professor of Clinical Surgery and Clinical Anatomy:
G. A. Bingham, M.D., C.M., Trin., M.B., Tor.

Associate Professors of Clinical Surgery: A. Primrose, M.B., C.M., Edin.; N. A. Powell, M.D., C.M., Trin., M.D., Bellevue, N.Y.; W. Oldright, M.A., M.D., Tor.; H. A. Bruce, M.B., Tor., F.R.C.S., Eng.; F. N. G. Starr, M.B., Tor.

Associate-Professor of Clinical Surgery, in charge of Orthopedics: C. L. Starr, M.B., Tor.

Demonstrators of Clinical Surgery: W. McKeown, B.A., M.B., Tor.; C. A. Temple, M.D., C.M., Trin.; A. H. Garratt, M.D., C.M., Trin.; C. B. Shuttleworth, M.D., C.M., Trin., F.R.C.S., Eng.; T. B. Richardson, M.D., C.M., Trin., F.R.C.S., Edin.; J. F. Uren, M.D., C.M., Trin.

PATHOLOGY.

Professor of Pathology and Bacteriology and Curator of the Museum and Laboratories: J. J. MacKenzie, B.A., M.B., Tor.

Professor of Clinical Pathology: H. B. Anderson, M.D., C.M., Trin.

Associate-Professor of Pathology and Bacteriology: J. A. Amyct, M.B., Tor.

Laboratory-Assistant in Bacteriology: T. D. Archibald, M.B., Tor.

Demonstrators: G. Silverthorn, M.B., Tor.; C. J. Wagner, M.B., Tor.

Assistant-Demonstrators: W. H. Pepler, M.D., C.M., Trin.; H. C. Parsons, B.A., M.D., C.M., Trin.; M. M. Crawford, M.B., Tor.; F. A. Clarkson, M.B., Tor.

MEDICINE.

Professor of Medicine and Clinical Medicine: A. McPhedran, M.B., Tor.

Associate-Professors of Medicine: J. T. Fotheringham, B.A., Tor., M.D.C.M., Trin.; R. D. Rudolf, M.D., C.M., Edin., M.R.C.P., Lond.

Professor of Clinical Medicine: J. L. Davison, B.A., Tor., M.D., C.M., Trin.

Associate-Professors of Clinical Medicine: A. M. Baines, M.D., C.M., Trin.; W. P. Caven, M.B., Tor.; W. B. Thistle, M.B., Tor.; J. T. Fotheringham, B.A., Tor., M.D., C.M., Trin.; A. R. Gordon, M.B., Tor.; R. J. Dwyer, M.B., Tor., M.R.C.P., Lond.; H. B. Anderson, M.D., C.M., Trin.

Associates in Clinical Medicine: G. Boyd, B.A., M.B., Tor.; R. D. Rudolf, M.D., C.M., Edin., M.R.C.P., Lond.; G. Chambers, B.A., M.B., Tor.; F. Fenton, M.D., C.M., Trin.; H. C. Parsons, B.A., M.D., C.M., Trin.; W. Goldie, M.B., Tor.

PREVENTIVE MEDICINE.

Professor of Preventive Medicine, Didactic and Clinical: C. Sheard, M.D., C.M., Trin.

MATERIA MEDICA AND THERAPEUTICS.

Professor of Materia Medica, Pharmacology and Therapeutics: J. M. MacCallum, B.A., M.B., Tor.

OBSTÉTRICS AND GYNECOLOGY.

Professor of Operative Obstetrics and Gynecology: J. A. Temple, M.D., C.M., McGill.

Professor of Obstetrics: A. H. Wright, B.A., M.B., Tor.

Professor of Gynecology: J. F. W. Ross, M.B., Tor.

Associate-Professor of Obstetrics and Pediatrics: H. T. Machell, M.B., Tor.

Associate-Professor of Pediatrics: A. R. Baines, M.D., C.M., Trin.

Associates in Obstetrics: K. C. McIlwraith, M.B., Tor.; F. Fenton, M.D., C.M., Trin.

OPHTHALMOLOGY AND OTOLGY.

Professors: R. A. Reeve, B.A., M.B., LL.D., Tor.; G. S. Ryerson, M.D., C.M., Trin.; G. H. Burnham, M.D., Tor., F.R.C.S., Edin.

Associates: C. Trow, M.D., C.M., Trin.; J. M. MacCallum, B.A., M.B., Tor.

LARYNGOLOGY AND RHINOLOGY.

Professor: G. R. McDonagh, M.B., Tor.

Associate-Professor: D. J. Gibb Wishart, B.A., Tor., M.D., C.M., McGill.

Associate: G. Boyd, B.A., M.B., Tor.

HYGIENE.

Professor: W. Oldright, M.A., M.B., Tor.

TOXICOLOGY.

Professor: W. H. Ellis, M.A., M.B., Tor.

MEDICAL JURISPRUDENCE.

Professor: N. A. Powell, M.D., C.M., Trin., M.D., Bellevue, N.Y.

MENTAL DISEASES.

Extra-Mural Professors: N. H. Beemer, M.B., Tor.; J. C. Mitchell, M.D., C.M., Trin.

CHEMISTRY.

Associate-Professor: W. T. Stuart, M.D., C.M., Trin., M.B., Tor.

BIOLOGY AND PHYSICS.

(As in Calendar).

To the Editor of CANADIAN PRACTITIONER AND REVIEW :

DEAR SIR,—Some months ago a communication from me was published in the PRACTITIONER protesting against sending consumptives to Muskoka, because of the moist atmosphere there. It may be remembered that, in that communication it was stated that Muskoka is a very desirable place, especially in

June, July and August; and I may now add, in September and October, and indeed always, for the overworked, over-worried, worn-out neurotics, for persons generally run down, for those seeking rest or pleasure—a most desirable place, indeed for these, requiring quite a different atmosphere from that best suited to the consumptive. In justice to that picturesque locality, in many respects highly favored as it is—with its beautiful islands, lovely lakes, and many places for good living and recreation—and in justice to its people, will you kindly permit me to add, having, as before stated, studied a little for many years the meteorological conditions of a large number of localities, I know of no place more suitable for nearly all such persons as above indicated—the overworked, etc., for whom a somewhat moist, balmy atmosphere is indicated, being soothing, and usually much more desirable than a dry, stimulating one. And it might interest not a few of your readers, and you have some amongst our southern neighbors, to learn from “one who has been there,” that when coming to Muskoka or Toronto, and desire a sort of “milky-way” trip—not milky in the sense of tame or spiritless, but in a true life-giving and sustaining, in that of a galaxy—with most beautiful, most grand scenery, and with every possible facility for seeing it and viewing it, they can secure this from New York, on the Lehigh Valley Railroad, in its Black Diamond Express; so also can our Canadian friends on going South or to New York.

EDWARD PLAYTER.

Dr. Bruce Riordan, of Toronto, returned July 28th from a trip through the Maritime Provinces.

Dr. Samuel C. Corbett, of Winnipeg, passed through Toronto July 20th on a visit to Port Hope.

Dr. W. B. Thistle, of Toronto, has nearly recovered from his attack of typhoid fever.

Dr. H. B. Anderson, of Toronto, is slowly recovering from a mild attack of typhoid fever.

Dr. H. W. Spence (Tor. '99), after an absence of three years from Toronto, returned July 1st.

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