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## EXOGENOUS PERFORATIVE ULCERATION OF THE INTESTINES.

BY

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Employing here a title which is unusual, if not new, it is necessary perhaps, at the start, to state clearly what is included under the term.

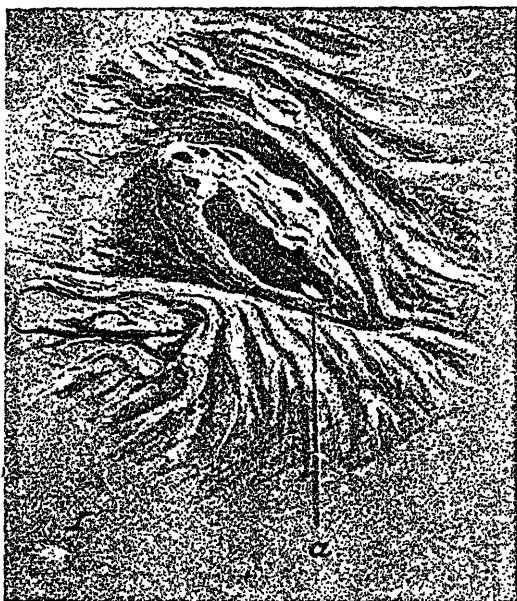
Perforation of the wall of the stomach or intestine may, in the first place, be due to causes other than ulceration, may be the effect of trauma or of some acute necrotic process, the whole thickness of the wall over a considerable area dying, and rupture resulting as a consequence. In the second place, where a definite ulcerative process precedes the perforation, that process may originate either on the mucous aspect of the gut,—and this is the more common,—or may develop from the serous surface, proceeding inwards. The former of these processes is *endogenous*, the latter, *exogenous*—developing from without—nor can I call to mind any term which more accurately indicates and includes the cases I now wish to bring forward, than this of exogenous ulcerative perforation.\*

My attention has been turned to this condition by a striking case which recently came to the post mortem room at the Royal Victoria Hospital. Before further discussing the subject, it may be well to give a brief account of the case in question. For the clinical notes I am indebted to Dr. Bell.

*Autopsy 1, '03.* This was a boy of 15 who gave the history that he had always lived on a farm and for the last few years had worked there. In the beginning of November, 1902, he was suddenly taken ill with a dull persistent abdominal pain, so considerable that he immediately took to bed. There was no vomiting nor diarrhoea, but a slight degree of constipation. The pain was generalised from the onset, although, according to his home doctor, there was a period

\* A name for the condition in many respects admirable is that of "primitive ulceration of the peritoneum," employed by McAdam in 1834, but this does not fully indicate the perforation associated therewith.

of epigastric localization. Some three days after the onset diarrhoea developed and the vomiting of bile-stained fluid, which had been present, ceased. He rapidly lost flesh. This condition had continued for close upon a month before he was admitted. On admission he was thin and delicate-looking, with a temperature of 100°, with distended abdomen and generalised tenderness, most marked in the right lower quadrant; the heart beats were weak. The indications were those of appendicitis, and upon December 4th, Dr. Bell cut down over the appendix when, upon opening the peritoneum, thick brownish faecal pus flowed out. There was in fact an extensive abscess in the region of the appendix and, in the matter removed,



(1) Ulcer at the lower end of the ascending colon, actual size, showing the curious raised and perforated condition of the mucosa, and, at *a*, the fistulous opening through the muscle wall.

two concretions were recovered, each the size of a bean. Following upon this operation there was profuse faecal discharge from the wound for some days. This continued, although the wound showed good signs of healing, save for the presence of the fistula.

Upon the 30th of December, the discharge still continued and he complained of general abdominal pain. On the 31st there was so much pain and tenderness with vomiting that a second operation was performed, and the intestines were found matted together, two perforations being discovered, one in the caecum, the other in the

ileum near the ileo-cæcal valve. The fæcal fluid still welling out, further examination led to the discovery that there was a third perforation of the cæcum which also was sutured. But the patient continued to sink and died upon the morning of January 1st.

It is unnecessary to go into all the conditions found at autopsy, but the condition of the abdomen is of importance. From the old wound in the right groin about 30 cm. of thin coffee-and-milk fluid of rather fæcal odour was removed. On opening the second median operation wound and more particularly on attempting to separate the matted intestines over the pelvis, purulent fluid welled out, while another sac of pus lay between the pyloric end of the stomach and the ascending colon. There were thus, in addition to the original perityphlitic abscess cavity, at least two pus sacs, the larger, containing an admixture of fæces, being deep in the pelvis and having a roof formed of the matted coils of the ileum. These adhesions were firm and apparently of some age, so that they had to be cut through. Upon examining the intestines, which were removed with great care, there were no signs of ulceration until a point 5 cm. above the ileo-cæcal valve where there were indications of two perforations close to each other, one of which had been sutured. The cæcum which lay exposed to the original operation cavity was covered by a dirty inflammatory layer. On examination the appendix was found rather thick, coiled upon itself, and adherent by organised adhesions to the cæcum. It showed a well marked area of perforation in its middle third, the interesting point being that by a thickening of the mucosa, the lumen of the appendix was completely obliterated so that a fine probe could only be pushed through from the gut after the employment of considerable force. In the colon, in addition to those which had been sutured, two other perforations were found, one some four inches above the valve, the other nearer to the hepatic flexure. It is to the ulcerations in connection with these two that I wish particularly to direct your attention.

Regarded from the outer side, these two perforations differed considerably. The upper one showed a complete loss of tissue for a length of about 3 cm.; there was thus very free communication at this point between the posterior and inner portion of the colon, and the peritoneal cavity or, more correctly, the walled-in collection of pus lying immediately to the inner side of this area. The lower perforation, on the contrary, showed a relatively small external orifice about 2 m.m. across, reaching through the muscle wall. In fact, the perforation here was of the nature of a fistulous tract. Yet, seen from the inner side, these two perforations were clearly of the same

peculiar character. Surrounding the edges of the upper of the two was a fringe of loose overhanging mucosa, not forming an unbroken surface, but exhibiting numerous losses of substance or holes of irregular shape. This appearance was even more characteristic in the lower and smaller ulcer near the valve. Here the mucosa showed one large, irregular central orifice, large enough to admit the end of the index finger, while around this the mucosa with its multiple perforations projected upwards in a dome-like shape when placed in water. Through these perforations could be seen the smooth floor of the submucosa with the small fistulous orifice passing out from it



(2) The same ulcer in elevation, actual size, to demonstrate the distension and projection inwards of the mucosa.

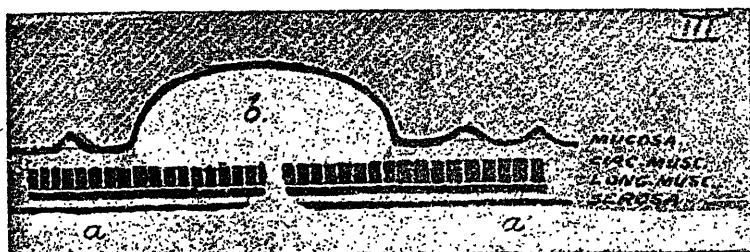
through the muscle wall. The appearance of this perforated or netted mucosa may be likened to that of a piece of mace.

Examining now the other regions of perforation which had been sutured, the mucosa at these points was seen to exhibit the same curious characters.

Save for these regions of ulceration, the mucosa neither of the ileum, cæcum or colon showed any signs of follicular swelling or of inflammation. The ulcerations were the only signs of disturbances affecting the mucosa.

To sum up, we have here the history of perforative appendicitis

with localized abscess formation which had developed some eight weeks before death. The operation had not taken place until about a month after the beginning of the condition and at the time of operation already there had been perforation of the ileum and the caecum in the neighbourhood of the pus collections, so that when the pus was drawn out of the groin, faeces passed out freely as well and continued to pass. Clearly also, whether as a secondary infection or as an original condition, the collections of pus had become somewhat extensive so that there were two almost, or completely, walled in collections, one in the pelvis, the other to the inner side of the caecum. I could not make



(3) Schematic representation of the mode of development of the ulcer. *a.*, peritoneal pus. *b.*, distension of the mucosa by pressure of pus in the sub-mucous tissue.

absolutely sure at the autopsy whether these connected freely with the original collection in the appendix region. The pelvic abscess appeared to do so; the other not.

The important point is that the ulcerations corresponded with these pus collections and I can only explain the appearance of these ulcerations with their curious mace-like covering of mucosa by supposing that the pus organisms had affected the serous coats of the bowel leading to the ulceration of the same, that the infection had then spread into the loose and vascular sub-mucosa; that here there had been an extensive distension of the part either through pressure of the pus from without or by the development of a distinct submucous abscess and that, as a final stage, the mucosa thus distended was cut off from its blood supply, had become eroded and perforated at several points, the pus now pouring into the lumen of the bowel.

No other course of events could, it seems to me, have led to this peculiar appearance of the bowel wall.

In May, 1900, I brought a somewhat parallel case before the Montreal Medico-Chirurgical Society. It was a curious case, one that I never felt satisfied that I had wholly fathomed. It was that of a woman of fifty-seven, a patient of Dr. Bell's, who had

been in excellent health until six months previously when obscure paroxysmal pain was noted in the left side of the abdomen with soreness there which eventually spread over the whole abdomen. For some weeks before admission the appetite gradually failed and there was progressive loss of flesh and strength. The bowels were regular and there was no diarrhoea. Upon admission there was some fulness of the abdomen with slight tenderness more particularly over the right side. On May 10th, 1900, Dr. Bell made an exploratory incision and found the omentum adherent to the parietes and studded with numerous partly caseating small areas or nodules. There was a reddish but otherwise clear fluid in the pelvis which was mopped out. Owing to the extensive adhesions and the absence of any sign of acute perforation, nothing further was done beyond placing a drainage tube. After the operation the patient did not recover strength and gradually failing she died on the 17th.

At the autopsy the thoracic organs were healthy looking and there were no signs of tuberculosis, unless a slight puckering of the left apex might be considered as such. The condition was apparently confined to the abdomen. Here all the intestines were matted together and adherent to the parietes by rather loose, dirty looking adhesions throughout which, over the surface of the intestine, more especially in the lower quadrant, were very numerous, whitish, irregular little patches, some of which had a shaggy, villous appearance. They varied in size and differed from ordinary new growths in that their centres were apt to be broken down. They differed from ordinary tubercles again in that their centres were more purulent than caseous. The intestines were removed *en masse* and opened *in situ*. Almost from the beginning of the jejunum was a remarkable ulcerative condition of the gut. Every two or three inches was a perforation, about three to four mm. across, through the greatly atrophied wall of the intestine. The walls of the perforations were absolutely clean cut. Examining the organ from the serous surface, each of these perforations corresponded with one of the nodular masses found there. On more careful examination of the serous coat over the jejunum and ileum, *incomplete ulcers could be seen, the serosa being destroyed, the mucosa not yet invaded.*

That the ulceration was from without inwards in this case was further shown by the fact that in the jejunum some of the ulcerations were bridged over by one of the rugæ. Another remarkable point was that there was no fluid in the peritoneal cavity and although there were so many perforations, obviously the dense matting together of the intestines had prevented the development of a generalised perforative peritonitis. To a less extent the condition affected the trans-

verse and descending colon. Putting everything together, I was led to the conclusion that we had to deal here with a primary tuberculosis of the peritoneum of chronic development with a terminal streptococcal infection, for the latter organisms were obtained in two separate cultures from the heart blood. Although I did not obtain tubercle bacilli on section, the nodules on the serous coat showed numerous giant cells. I cannot explain the multiplicity of these perforations with the little evidence of acute disturbance of the peritoneum save on the supposition that they were a terminal event.

The point of resemblance in these two cases is the existence of ulcers associated with the perforated intestine and showing an incomplete destruction of mucosa so that a portion of this had been left bridging over the loss of substance beneath. This condition of the mucosa in itself must indicate that the inflammatory process had not been on the mucous surface; had it been so, the whole of the mucosa would surely have been destroyed before the ulceration extended through to the serous surface. The ulceration must have begun on the latter and the mucosa have been the last portion to be affected. Indeed, the second case, as I have already stated, showed regions exhibiting well marked ulceration of the serous surface which had not proceeded so far as to penetrate the muscle wall.

While during the last quarter of the nineteenth century and these first years of the twentieth, there has been a constantly increasing interest manifested by physicians and surgeons alike in the diseases of the digestive tract and peritoneum, so that medical literature is rich in observations bearing upon ulcerative and perforative conditions of the mucosa of the stomach and intestines, a survey of the literature,—rapid it is true—made by me during the last fortnight has impressed me by the singular paucity of recorded observations upon the pathological anatomy and clinical symptoms of perforation of the intestines proceeding from without and due to causes other than trauma.

On second thought this lack of observations is recognized as being perhaps natural and to be expected. Primary peritoneal infection is, in the first place, distinctly rare, whereas the mucous membrane of the intestine is exposed to many infective agents, notably the microbes of Typhoid and Tuberculosis. As a consequence, ulceration of the gut is much more liable to originate on the mucous than on the serous surface. In the second, as shown by the recorded cases, when a secondary purulent peritonitis is followed by perforation and escape of the pus into the intestines, the symptoms due to the peritonitis itself or to inflammation of the viscus from which the peritonitis has



spread, are of first importance; the perforation of the gut is only a tertiary and often the terminal event; the symptoms of the same are masked by pre-existing peritonitis; at most, when the perforation occurs, and faecal matter escaping commingles with the pus already present, that preexisting peritonitis assumes a graver and more malignant type. The habitual lack of sustained daily study of the stools by the physician makes it easy to overlook what should be the most characteristic symptom of such perforation, namely the sudden appearance of pus in the stools. And in the third place, even when there is a localized growth of pus-producing organisms, in any serous cavity, the extension of the suppurative processes into the surrounding viscera with resulting perforation is, all things taken into consideration, the less common event. By this I mean that, if we take into account the frequency of general or localized peritonitis, extension of the suppurative process into or through the walls of the viscera, is the exception and not the rule.

Well on into the middle of last century, there was a controversy as to whether it occurred. The literature upon the subjects of Empyema, Pericarditis, and Peritonitis is enormous and I cannot pretend to have looked through a tithe of the authorities who might possibly refer to this condition.

So far as I can find out Scoutetten, in the beginning of the nineteenth century, was the first to call attention to the fact that if a patient suffering from peritonitis lives for some time, there is a liability for peritoneal erosions to occur which later become true ulcers. (*Arch. génér. de Médecin* IV., 1822, p. 392). McAdam in 1834, in his article on Peritonitis in Forbes' *Cyclopædia of Practical Medicine*, also refers to these peritoneal ulcers, but only in 1844 have I come across a definite description (by Adams, of London) of exogenous ulceration with perforation.

I refer to obvious ulcerations unaccompanied by immediate adhesion to other viscera—for I need not say that the development of fistulous communications between the abdominal viscera was recognized much earlier.

We have to recognize the remarkable protective powers of serous membranes; that whereas inflammation easily extends to them from below, from the sub-serous tissue, and when once it affects them is liable to spread throughout the whole of the cavity which they bound, the infective agents becoming widely distributed by the agency of the lymph present in the cavity, that inflammation nevertheless once set up, remains superficial and is not, or is but rarely, erosive. The loose attachment of the endothelial cells whereby when infected and

irritated they are easily cast off, the great vascularity of the sub-endothelial layer, whereby that becomes flushed out by the abundant inflammatory exudate and so freed from infective agents; the rapid formation of a fibrinous coagulum or plastic exudate upon the surface stripped of its endothelium, such exudate of itself forming a protective covering and preventing further infection from without; each and all would seem to favour this lack of deep extension.

Notwithstanding, as already pointed out, perforation can and does occur. Although nowadays we are all prepared to admit its existence, I am inclined to think that we still imagine that it is most exceptional and do not sufficiently take into account the frequency of its occurrence. The most frequent cases of peritonitis are, I need scarcely say, those in association with appendicitis, and when in the course of this disease faecal fistula develops with persistent escape of faeces through the operation wound, we are, I think, all apt to attribute this either to further gangrene with rupture of the appendix and its remains, or to a combined ulcerative caecitis and appendicitis, so that perforation of the caecum is regarded as a part and parcel of the primary disease, instead of being regarded, as in the majority of instances it ought to be regarded, due to exogenous perforation of the large or small bowel secondary to localised purulent peritonitis.

These two cases led me to look through our post mortem notes and determine from them the frequency and nature of cases of exogenous ulceration and perforation of the stomach and intestine and I was surprised to find that, contrary to my preconceived impression, such perforation of the bowel is by no means rare.

From January 1st, 1895, to December 31st, 1902, there were performed at the Royal Victoria Hospital altogether 700 autopsies—in eight years that is—and of these we have a full and complete record.

Taking first the cases of definite *endogenous* perforation I find that among these 700 cases we had 3 with perforation of the *Stomach* from within, either from round ulcer or from cancer; of the *Small Intestine* 18 cases, of which 15 were typhoidal perforations, 3 tubercular; of the *Appendix* 28 cases, all of perforative appendicitis; of the *Colon* 3 cases, and of the *Rectum* 7, these last being all cases of fistula. In all then, the 700 cases yielded 63 of endogenous perforation, or exactly 9 per cent. In addition to these 63 I came across about 15 cases which must be classified as doubtful and in which it is impossible to say whether the ulceration showed itself first upon the serous or the mucous surface. Among these I include cases of trauma as from kicks, railway accidents, shunting accidents, etc., cases of anæmic necrosis and of gangrene secondary to hernia and obstruction of various

forms. I say about 15, for in the first part of my search from the reports themselves, I neglected this series of cases and in going over them again rapidly, I may have overlooked one or two.

But now of diseases definitely *exogenous*; I came across no less than 17 or 2.43 per cent. Let me analyze these cases.\*

#### STOMACH.

There were three cases of ulceration with perforation from without the stomach. One of these was a cholecystico-gastric fistula.

(3) *Case 70/98*, Mrs. B. M., æt. 85. Dr. James Bell.

This was a case of fracture of the femur. At the autopsy the gall-bladder was found greatly contracted and contained opaque, whitish, mucoid material. From it there passed a fistulous opening into the stomach large enough to admit a cedar pencil. The common bile duct was distended to the size of the index finger. Bile papilla absent and replaced by two ulcerous openings communicating with the end of the common bile duct. Here at the duodenal end of the duct was a somewhat mulberry-like calculus formed of yellow, inspissated bile pigment.

(4) The second case was one of abscess originating in the spleen and perforating the cardiac end of the stomach.

*Case 31/93*, W. C., male, æt. 38. Dr. James Stewart.

This was a case of gangrene of the lung with multiple abscesses. There was a sub-capsular abscess of the upper aspect of the spleen the size of a walnut. This communicated by branching tracts with the necrotic abscess cavity situated between the spleen, diaphragm and stomach. The diaphragm was eroded but not perforated. In the gastric wall was a small perforation the size of a quill surrounded by moderately firm adhesions. On the mucous aspect of the stomach there was a very superficial erosion about the perforated area.

The 3rd of this group was one of perinephric abscess also opening into the cardiac end.

(5) Perinephric and retro-peritoneal abscess perforating into the stomach. Reported by Dr. Nicholls in the *Montreal MEDICAL JOURNAL*, February, 1898.

*Case 49/97*, female, æt. 30. Dr. James Bell.

History of pain in the lt. lumbar region fourteen months before admission. For the last month nausea with fever and sweating. No history of renal colic or hæmaturia. On admission, large fluctuating tumour on the lt. side of the abdomen most prominent at the epigastrium. Aspiration followed by resection of the ribs did not lead to complete drainage of the abscess. Sixteen days later vomiting of thick, brownish, foul-smelling material with reduction of the tumour.

At the autopsy the lt. kidney found double the normal size, necrotic and

\*Not a few of the fullest notes on these cases have been made by Dr. A. G. Nicholls, Assistant Pathologist at the Royal Victoria Hospital. I here very gladly acknowledge my indebtedness to his careful observations.

greenish in its posterior portion with a calculus filling up the proximal end of the ureter. The kidney was converted into a mass of cysts, the dilated calices, filled with thick, greenish, creamy pus with numerous small calculi. No ulceration nor perforation of the descending colon, which formed the front wall of the abscess cavity. The stomach was about half full of clotted blood and pus. "The lower part of the cardia near the spleen showed a perforation from without about 10 cm. in diameter. The muscular coats are eroded and the mucous membrane overhanging and morable." The mucous membrane inflamed. Extension of the abscess also retroperitoneally to below the left Poupart's ligament. Empyema also of the lower part of the left pleural cavity.

### DUODENUM.

From the duodenum there were three cases:—

(6) Cholecystico-duodenal fistula. *Case 16/01*, male, aet. 56, Dr. J. Stewart.

History of the first attack of jaundice two years previously. Admitted with symptoms of peritonitis accompanying an attack of jaundice. The gall-bladder was found as a contracted sac with greatly thickened walls containing thick muco-pus. This wall to the right had ulcerated through. There was an abscess cavity around the bladder, with communication into the duodenum. The cystic duct was blocked by a stone. Five stones were found in the common duct; multiple abscesses in the liver. Examining the duodenum, a long fistulous tract, 1cm. in diameter, opened 4.5 cm. below the pyloric ring. This communicated with the gall-bladder and with the abscess cavity to the right of the same. "*This opening was clearly eroded from without for the mucosa was less involved than the outer layers of the duodenal wall.*"\* Note that, therefore, the condition was not one of simple cholecystico-duodenal fistula.

(7) Suppurative cholecystitis with fistulous communication between the contracted gall-bladder and the duodenum.

*Case 20/00*, male, middle aged. Died immediately after admission; no notes.

Case of gout with right inguinal hernia. 3 cm. from the pyloric ring a free communicating fistula between the duodenum and a small, thick-walled cavity which was the contracted gall-bladder. This contained a small quantity of turbid greyish, yellow material. Cystic and common ducts relatively wide and free from gall stones. Some chronic localized peritonitis.

(8) Retro-peritoneal abscess secondary to appendicitis and perforating into the third part of the duodenum.

*Case 37/96*, male, aet. 45. Dr. James Bell.

Case of perforative appendicitis with pylephlebitis of the mesenteric veins. Tracing the mesenteric vessels from without inwards, they opened into an extensive sloughy abscess cavity situated in the root of the mesentery, the branches of which corresponded with the mesenteric veins. This abscess ex-

\* Here and elsewhere the use of quotation marks indicates that the sentence is transcribed verbatim from the Post Mortem Records.

tended upwards to the duodenum and beneath the head of the pancreas and "in the third part of the former was a fine perforation connecting with the abscess cavity." In this case the *B. aërogenes capsulatus* was present.

#### SMALL INTESTINE.

There were two cases of exogenous ulcerative perforation of the small intestine.

(9) Multiple perforations in the small intestine and the cæcum, secondary to pelvic abscess.

*Case 64/98*, female, æt. 18. Dr. Wm. Gardner.

This case was one of suppurating ovarian cyst of the right ovary with removal. Post-operative development of localized pelvic abscess with faecal fistula. At the autopsy the pelvic abscess found to be well localized with development of general peritonitis. "The first perforation was about  $4\frac{1}{2}$  ins. below the beginning of the jejunum; here was an opening  $8 \times 4$  cm., roughly oval in shape, with two or three strands of mucosa crossing it. The serosa was more eaten away relatively than the mucosa showing that the perforation had been from without inwards." The intestine here showed some evidences of active inflammation.

The second opening in the ileum, 8 ft. from its origin (? termination). At this point about half of the bowel had sloughed away. This had been noted to form the apical portion of the abscess cavity. One foot lower down a third perforation about 1 cm. across. The fourth perforation about one foot lower down, with mucosa freely exposed in the abscess cavity. The fifth perforation about twelve inches above the ileo-cæcal valve was about 1 cm. in diameter. Two inches above the valve the sixth perforation, about 10 cm. long. The lower part of the ileum intensely injected. At the junction between the cæcum and ascending colon was a small perforation appearing to communicate directly with the lowest perforation in the ileum.

The history in this case points, I think, clearly, to the ulcerations having been, in the main, exogenous, and we have the indication, in connection with more than one of the ulcers, that the serous coat was more involved than was the mucous.

(10) *Case 44/99*, æt. 40, female. Dr. Wm. Gardner.

History of pelvic inflammation dating back for eighteen months. Operation in July when double ovarian abscess was found. The right ovary was the size of a large orange and filled with foetid pus, the left ovary was the size of a small orange. Both extirpated with the appendages. At the autopsy all structures found firmly matted together. Thick, greenish pus also present between some of the coils of the intestines. 8 ins. above the ileo-cæcal valve the ileum was found perforated and a faecal fistula present. To the left side of the uterus was a large abscess with faecal contents showing a large opening in the anterior wall of the sigmoid, which, more to the right, was adherent to the fundus of the uterus. A large part of the wall of the sigmoid was absent, the rest being shreddy and necrotic. The remains of the broad ligament could be recognized in the abscess cavity. The abscess had further perforated into the vagina, there being a discol-

oured pinpoint opening in front of the cs and to the left of the median line which gave pus on pressure.

The exogenous perforation in the ileum appeared to be the later process. The indications at the autopsy were that, after removal of the appendages, the suppurative process had started in the neighbourhood of the adhesions between the stump of the left tube and the sigmoid; that the abscess had been, at first, well localized by the matting of the intestines, but later on a diffuse form of generalized suppurative peritonitis had developed with the formation of pockets of pus between the loops of the intestine.

#### CÆCUM.

Here, again, there were two cases of exogenous ulceration and perforation.

##### (11) Case 51/03, male, æt. 63. Dr. James Bell.

Progressive purulent peritonitis secondary to sarcoma of the rectum with obstruction. Peritoneal pain had only been noted one month before death. Evidences of acute peritonitis upon admission. Condition so serious that no operation was performed. Death eight days after admission. At the autopsy, the peritoneal membrane was everywhere congested and covered with a fibro-purulent deposit. At the inner and anterior surface of the cæcum about one and a half inches above the root of the appendix, upon separating the adhesions, about 1 drachm of thick, greenish pus was liberated and fluid fæces exuded through an opening in the wall of the cæcum. All around, the coils of the ileum were adherent as was also the great omentum. This perforation was well removed from the region of the malignant growth. *"The perforation apparently had been produced from without since the mucosa was less affected than the serosa."* Elsewhere in the bowel there was no ulceration present to account for the perforation save two patches of very slight erosion of the mucosa." At the junction of the sigmoid flexure and the rectum was a large mass of new growth occupying two-thirds of the true pelvis. This was found to be of the nature of a spindle celled sarcoma.

##### (12) Case 53/96, male, æt. 59. Dr. James Bell.

Perforation secondary to suppurative perityphlitis.

History of pain in the right side in February, '96, with the formation of an abscess from which, two weeks later, about one pint of pus was removed. Increasing weakness during the next month with chills and fever. A second incision made with discharge of pus following which there was a sinus. Admission in July, '96, when, on attempting to open the sinus there was so much hæmorrhage that the operation was not completed. Death a week later.

At the autopsy there were no evidences of perforation of the appendix which, however, had thickened walls and showed injection of the mucosa. Some chronic thickening of the walls of the cæcum with adhesions to the borders of the operation wound. In the cæcum a small point of perforation was discovered with indolent edges, 1 cm. in diameter.

The rest of the mucous membrane of the cæcum showed patches of congestion, but no signs of ulceration. Abscesses in the liver.

It may be argued that the fæcal fistula here was of operative origin. The history, however, conforms with that of other cases of slowly developing suppurative processes in the peritoneal cavity leading eventually to perforation from without.

#### ASCENDING COLON.

In connection with this region of the bowel I have encountered three cases in addition to No. 1 already given.

(13) Retro-peritoneal abscess secondary to appendicitis.

*Case 69/95, male, æt. 21. Dr. James Bell.*

Sudden severe abdominal pain on Sept. 25th. Admission six days later. Operation the same day. Gangrene and perforation of the appendix. Following upon the operation there developed gradually, during the last days of life, a condition of pyopneumothorax and pyopneumopericardium with, on October 13th, the day of death, great tympany and congestion of the abdominal wall.

At the autopsy there was found a retroperitoneal abscess extending from the region of the appendix along the outer side of the right kidney and so behind the liver where there was a small sub-diaphragmatic abscess. The muscle here was necrosed and infiltrated. Extension of the process to the right pleura and pericardium. "The necrosed, perforated area of the ascending colon opened into a cavity having the lower half of the right kidney for right wall and the duodenum for the inner wall. The necrosed area was oblong and transverse, 3 cm. across, *with the necrosis especially affecting the outer wall and a second small perforation through the mucosa.*" The rest of the colon did not call for remark. There had also been a post-operative sloughing of the stump of the appendix.

This case has already been reported by Dr. Nicholls as an example of pneumothorax due to the *B. aërogenes capsulatus*. Here, again, we have a characteristic note that the ulceration was more extensive on the serous than on the mucous surface.

(14) Retro-peritoneal abscess secondary to appendicitis.

*Case 94/98, female, æt. 45. Dr. James Bell.*

In this case there was a history of recurrent appendicitis dating back twenty years and of vaginal hysterectomy eleven months previously. Symptoms of appendicitis followed by those of acute peritonitis developed and, upon operation, the appendix could not be found, its locality being occupied by an abscess cavity. On bringing the colon to the wound, fæces were found escaping from an opening on the outer and anterior surface of the hepatic flexure. Death thirteen days after operation.

At the autopsy there was a large mass of adhesions involving the last eighteen inches of the ileum, the mesentery, cæcum, great omentum and ascending colon up to the hepatic flexure. No signs of the appendix could be found. About six inches above the valve was a perforation communicating with the exterior operation wound along the outer border of the right rectus. From this region upwards to the lower surface of the liver there was a large amount

of free pus and fæces. The tissues in front of the right kidney were thickened and indurated. At the operation very small collections of pus were found between the coils of the intestines. The rest of the bowel practically normal.

Here the condition of the ascending colon and its surrounding tissue indicated long standing inflammatory disturbances, following a condition of periphylitis spreading both beneath the peritoneum and in the peritoneal cavity along the course of the ascending colon.

(15) Right pyonephrosis communicating by two openings with the ascending colon.

Case 70/02, male, æt. 28. Dr. James Bell.

This was a case of neglected gonorrhœa with a stricture, epididymitis, prostatitis, chronic ureteritis and pyonephrosis. Dr. Bell performed a nephrotomy and removed much thick creamy pus from the right kidney; this was followed by abdominal tenderness with vomiting. Death the next day.

At the autopsy the right kidney was found enlarged and pale, the seat of two abscess cavities connecting with the exterior through the operation wound. In the lower portion of the organ was a firm necrotic mass, well defined, about 3 c.m. in diameter and much broken down at its periphery. This portion was adherent to the posterior wall of the ascending colon in which there were two small fistulous openings.

#### SIGMOID.

(16) Extension of localized necrotic inflammation from the uterus after operation, formation of fistula between the uterine cavity and the sigmoid.

Autopsy 12/99, female. Age not given. Dr. W. Gardner.

This was a case of endometritis and cervicitis with prolapse of the uterus. Uterus curetted and abdominal incision performed, when there was found an active peritonitis localized around the uterus with evidences of chronic peritonitis and extensive adhesions. The left tube and ovary were removed, active peritonitis continuing after the operation.

At the autopsy the sigmoid was found adherent to the left upper portion of the uterus while at the site of the operation, was a mass of inflammatory exudate with sinuses throughout communicating on the one side with the sigmoid on the other with the body of the uterus. Two fistulous openings were found into the sigmoid "*the openings being clearly eroded from without, the serosa being more involved than the mucosa.*" Upon examination of the uterus there was found at the region of the left cornu an area of discoloured necrotic tissue extending through the whole thickness of the wall. The sinuses passed from this to the sigmoid.

In case No. 10 it is to be recalled that there was also perforation of the sigmoid.

#### RECTUM.

(17) Ovario-rectal fistula secondary to oophoritis and purulent perioophoritis with pelvic abscess.



*Case 39/95*, young adult female. Dr. W. Gardner.

Young married woman giving the history of arrest of menstruation a few months after marriage with the development of a pelvic tumour, night sweats and slight fever. In March, '95, laparotomy performed and a parovarian cyst discovered together with a localized abscess on the right side of the uterus containing most fetid gas and grumous fluid with a faecal odour. Recovery complicated by the passage of gas and faeces through the drainage tube. Otherwise good health until the middle of April when symptoms of acute meningitis developed.

At the autopsy, 7 cm. from the anus, on the anterior wall of the rectum, was a sinus 3 mm. across, and 7 cm. higher was a second and larger orifice, 6 mm. across in the anterior wall of the gut. These two communicated by a fistulous tract in the wall of the bowel and from the upper and larger orifice a passage led into the left ovary. The fistula communicated also with the abdominal wound. The region of the fistula in the neighbourhood of left ovary formed a loose cavity with injected walls surrounded by dense inflammatory new growth. The right Fallopian tube contained pus. The right ovary was surrounded by dense adhesions.

In this case no bacteriological report was given. The history rather suggests gonorrhoeal salpingitis and oophoritis with the formation of pelvic abscess and perforation into the rectum. The parovarian cyst was a further complication.

(18) Recto-vaginal fistula formed by extensive eroding cancer of the body of the uterus.

*Case 71/02* aet. 32, Dr. W. F. Hamilton.

History of good health until six months previously when severe abdominal pain came on, with diarrhoea and progressive loss of flesh and strength. History of alcoholism. On admission the abdomen very hard, tense and tender, especially in the suprapubic region. Sickening odour about patient. Foul discharge from vagina with faeces in the same. Hard nodular masses felt upon vaginal examination, with recto-vaginal fistula.

At the autopsy the condition found to be one of eroding cancer of the uterus with extensive destruction of the anterior wall of the rectum, 4 cm. in length by 2 cm. in breadth opening freely into the cavity at the upper end of the vagina. A large cavity represented the body of the uterus. The process had clearly begun in the uterus and extending into the wall of the rectum had led to the development of this large fistula.

While in this case the process is clearly cancerous in origin, the extensive erosion is clearly of an ulcerative nature, so the case may here be included.

Reviewing these cases, it will be seen that they are not all of the same order. We can, in fact, distinguish two broad groups: (1) the fistulous cases, and (2) the cases of either purulent peritonitis or of retro-peritoneal abscess.

In the one group of cases, that is, we have evidences of inflammation

developed in one viscus leading to ulceration of the same and, by the extension of the inflammation through to the serous surface, an adhesion is produced between the viscus and some portion of the intestinal tract. Following upon such adhesion, the ulceration or abscess formation extends through from the viscus into the wall of the intestine, so leading to perforation and the formation of a direct connection between the viscus and the lumen of the gut. In the other group of cases, this immediate adhesion is wanting. The extension of inflammation from any point leads here to a purulent peritonitis of localized type so that an abscess is formed. And now, secondary to this abscess formation, the wall of some portion of gut, forming one of the boundaries of the abscess cavity, undergoes ulceration and perforation.

In the first group there is a less acute development and the formation of the fistula is not so obviously associated with the fatal event. Examples of this first form are to be seen in cases 3, 7, 15 and 18.

The second form is the more characteristic and, on the whole, the more serious. The larger size of the cavity communicating with the bowel, the danger of the more extensive passage of faeces to replace the discharged pus, the more extensive involvement also of the intestinal wall, all join to render these cases very fatal.

Examples of this form we have in cases 1, 4, 5, 9, 10, 11, 12, 13, 14.

As a group, these cases have an anatomical character of their own. There is a marked tendency for the serous coat to be more seriously affected than the mucous. (*Vide* cases 2, 5, 6, 9, 11 and 13), while in a certain number of these cases it is noted either that the mucosa is movable and raised from the underlying layers as though there had been a preliminary period of abscess formation in the submucosa, (Case 5), in other cases, a portion of the mucosa is found to bridge over the ulcer (Cases 2 and 9), or, as in the first case here described, to exhibit multiple perforations. All these are indications of a process of perforation occurring from without.

Reference must be made here to what may be termed the intermediate group of cases. In Case 6, for example, there was an imperfect fistulous communication between the gall-bladder and the duodenum and, at the same time, communication between this and the abscess cavity situated around the gall-bladder. So also in case 16, there were indications of fistulous passages leading from the sigmoid through the left cornu of the uterus into the uterine cavity. These were situated in a mass of inflammatory exudate of a somewhat purulent nature and we have the note that the serosa of the sigmoid was more involved than the mucosa, a note incompatible with the existence of simple fistula. We have, that is, to recognize that evidently the fistulous and

the suppurative groups are not clearly defined the one from the other, that, in short, transitional forms exist. I leave it an open question whether Case 17, which is described as an ovario-rectal fistula, belongs to this group or should come under either of the others. The description of the condition found, at operation point to a local periovarian abscess discharging per rectum.

Lastly, Case No. 2 with the new growths, apparently tubercular, situated upon the serous coat, breaking down at their centres and perforating and leading to multiple perforations of the gut, forms a section by itself.

As I have already remarked, looking over this record of seven hundred post mortems, I have been not a little surprised to find the relative frequency of this form of ulcer. If our experience at the Royal Victoria Hospital corresponds in any way with the experience in other hospitals, then exogenous perforative ulceration of the intestine is by no means the rare condition which it is generally held to be. In short, grouping together all these cases in which there is definite evidence of the extension of a localized abscess outside the gut without immediate adhesion to a viscus, we have here no less than 13 cases in which the suppurative process has led to erosion and perforation of the bowel wall, or a percentage of 1.85.

Studying this group of cases further, it will, I think, be recognized that in them we have to deal with not the acutest form of suppuration. That acutest form leads to a generalized peritonitis without the formation of adhesions. Here we have constant evidence that the suppurative process is localized by surrounding adhesions; in fact, it would seem to be this very localization which accounts for the perforation. As the pus accumulates within the containing cavity there is increasing pressure brought to bear upon its walls and, where those walls are weakest, where, that is, they are formed of a hollow thin-walled viscus, any pressure must lead to a certain amount of anæmia and malnutrition and at such a point of anæmia and malnutrition, there is developed a favourable nidus for the invasion of infecting agents, for ulceration and perforation.

Although here we have so many instances in which the serous coat has become infected and ulceration has taken place, some, at least, of the cases are examples of a somewhat more acute inflammatory process taking place where the serosa is wanting, either in regions such as the posterior wall of the duodenum and the posterior wall of the ascending colon and the rectum where the intestine is retro-peritoneal and not wholly surrounded by serosa, or, on the other hand, where there has, in all probability, been operative removal of a portion of the

same in the process of breaking down adhesions. It is possible that in more than one of the cases here described, the ulceration has had its origin through infection of the bowel wall thus stripped of its serous coat.

It is well, I think, to bring the relative frequency of this form of ulceration to the attention of surgeons and those interested in abdominal conditions, not because this condition forms a hopeful one for operative interference; on the contrary, when inflammation has gone so far, judging from our experience in the post mortem room, the possibility of affording aid is very slight; but because it is right that, for diagnostic purposes, this end-result of localized suppuration in the abdominal cavity should be more fully realized, and lastly, because where faecal fistula is established after any operative interference in the abdomen, it should be remembered that such faecal fistula by no means indicates of necessity either that the sutures in the gut wall have given way or that the bowel has become ulcerated from within or gangrenous. It may indicate, as here shown, that accumulations of pus have led to perforation from without.

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## SOLITARY ULCER OF THE BLADDER, NON-TRAUMATIC AND NON-TUBERCULAR IN ORIGIN.

BY

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On the 14th of October, 1902, a young man 21 years of age, was transferred from the Medical side to my ward in the Montreal General Hospital, complaining of pain in the end of the penis and frequency of micturition.

He had diphtheria when six years of age, followed by temporary paralysis of the vocal cords. He says that before the onset of the present illness he frequently suffered from severe pain in the lower abdominal region in the middle line. The pain came on about an hour after breakfast and disappeared as soon as the bowels moved. This was a daily occurrence, but he thought little of it and did not consult a physician. His habits are good, does not use alcohol in any form, smokes but little, and has no venereal history.

The present illness came on quite suddenly about the 8th of August, 1902. He was in the best of health at the time. Three symptoms appeared almost simultaneously; these were:—

I. Pain at the end of the penis, about the end of the corona, on the

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dorsum, just before micturition and generally very severe, necessitating the administration of morphia.

II. Frequency of micturition. He passed urine every 20 minutes or half hour; when lying on his back the intervals were longer.

III. Loss of expulsive power; the urine just escaped and dropped down at his feet.

The act of micturition was not accompanied by pain. He noticed nothing unusual about the urine and did not observe any blood. He could give no reason for the occurrence of these symptoms. He had had no accident; had not suffered from violence in any form; had not been exposed to the weather more than any lad who drove an express delivery wagon, and as before remarked had no venereal history.

On the 22nd of August, eight days after the onset of the symptoms, he consulted his family physician, a careful, accomplished and pains-taking man, who passed a steel sound. This did not cause much pain, and a few drops of blood followed.

The family history was negative; father, mother, three brothers and two sisters were alive and well; one brother died of diphtheria in infancy. He was a fairly well nourished young man of medium height, and weighed 123 pounds, 12 pounds less than when he first became ill. He complained almost constantly of severe pain at the end of the penis. If morphia were withheld his cries were so loud and frequent that all the other patients were disturbed. The urine was turbid and contained large quantities of thick tenacious mucopurulent matter. On standing this material became very thick and viscid. The reaction was alkaline; the specific gravity could not be determined because of the thick muco-pus. There were a few phosphates and triple phosphates and an abundance of pus cells, but no casts. For a fortnight I kept a couple of enthusiastic students at work examining the bacterial flora, their results always being checked by the hospital pathologist, Dr. McCrac. Streptococci were always present in numbers, as well as small and large diplococci. The tubercle bacillus was never found.

The patient was losing weight. His temperature varied between 97 and 102 F. Under the influence of general anaesthesia I passed searchers into the bladder with a negative result. The examination was followed by a slight hæmorrhage. Prolonged lavage failed to secure sufficient clearness of bladder contents to permit of the use of the cystoscope.

The physicians reported that there was no evidence of any intrathoracic disturbance. Outside the bladder nothing could be found to account for the temperature and emaciation.

I regarded the case as probably one of tuberculous cystitis and decided to make a supra-pubic incision, with the double object of exploration for diagnostic purposes, and if tuberculous ulceration were found, the establishment of permanent drainage for the relief of the pain, tenesmus and septic absorption. Bladder lavage, using solutions of boracic acid, permanganate of potash, carbolic acid, silver nitrate and Thiersch's solution, had failed to afford any relief, and morphia was required to secure rest and sleep.

On the 25th of November with the patient in the Trendelenberg position, I made the usual incision in the median line. I had only separated the muscles when the boracic solution, which I had placed, as I supposed, in the bladder, began to flow out. The edges of the incision were retracted and the solution removed by swabs. By means of a strong reflected light I then found I had opened the pro-peritoneal space or Cavum Retzii. The bladder, small and contracted to about the size of a hen's egg, lay at the bottom of the space with a large opening in its anterior wall the size of a twenty-five cent piece. The edges of the opening were thick, rounded and somewhat irregular in outline; the mucous membrane was everted. I could bring the internal orifice of the urethra, the opening of the ureter and every part of the inner surface of the bladder into view, but no ulceration or other change could be detected. The space in front of the bladder measured five inches laterally and four inches antero-posteriorly. After careful cleansing a large-sized rubber tube was inserted through the supra-pubic wound down to the opening in the bladder wall.

The space lessened considerably in size for a time, but the temperature did not improve and emaciation continued.

On the 20th of January, 1903, I made a perineal puncture and through this inserted a catheter into the bladder with the view of securing dependent drainage. This did not prove to be altogether satisfactory for while the greater part of the urine escaped by the perineum, there was also some overflow through the suprapubic wound and the Cavum Retzii was kept bathed with it.

About the middle of February the patient complained of pain in the left loin and on the 13th of March I opened a peri-renal abscess. The kidney was palpable, not much enlarged, firmly imbedded in adhesions and the patient's condition was so bad that I did not deem it wise to explore further.

Unfortunately for the boy and for my argument, he died on the 24th of April. The autopsy showed acute miliary tuberculosis of both lungs; caseous tuberculosis of the bronchial glands; miliary tuberculosis of the left adrenal, spleen, kidneys, left ureter and bladder.

My second case was a healthy school boy, 12 years of age, with a good family history. He noticed blood in his urine on the 20th of December, 1902. The haematuria persisted and one week later he began to suffer pain at the end of the penis before and after micturition. The pain would pass off in about half an hour. At this time there was no marked frequency in urination. On the 17th of January, 1903, he consulted his family physician for the pain and it was found necessary to administer morphia.

I saw the boy in consultation on the 23rd of January and removed him to the Montreal General Hospital. The urine was turbid, acid, and contained blood, pus and vesical epithelium. Two moderate sized hyaline casts were found and there were also found diplococci and staphylococci.

On the following day, under anaesthesia, I introduced the cystoscope and found on the anterior wall, about two inches behind the urethral orifice, a patch of ulceration as large as a ten-cent piece. A part of the circumference was abrupt, well defined, the remainder of the circumference gradually passing into healthy tissue. The base was dark but not actually bleeding. Clear urine issued from the ureters. The bladder was then injected with a 1% solution of silver nitrate, and after an interval of two minutes this was withdrawn and the bladder injected with normal salt solution. This treatment of the bladder was repeated daily for 17 days when all symptoms had subsided. During his stay in hospital the temperature varied from 97 to 99 F., and the pulse from 72 to 96. He has remained perfectly well up to the present time.

In 1876 Bartlett reported the death of a man 53 years of age, from peritonitis secondary to intraperitoneal rupture of the bladder. At the autopsy there was found exactly in the middle line, on its posterior aspect, one inch from its apex and corresponding to the perforation, an ulcer which bore an exact resemblance to a chronic gastric ulcer; distinct loss of substance, as if a piece had been punched out, funnel-shaped smooth edges; at one side was some puckering.

In 1885 Reeves<sup>2</sup> reported the death of a young woman from peritonitis secondary to perforation of the bladder. The perforation was through the base of a single ulcer. The perforation would seem to have been temporarily closed by omentum which separated during the removal of a urethral polypus.

In the same year Oliver<sup>3</sup> discussed the occurrence of single simple ulcer of the urinary bladder similar to that occurring in the stomach and duodenum, but does not report cases.

In 1892 Wyeth<sup>4</sup> reported a case of intraperitoneal perforation in the

bladder of a man aet. 43. The perforation occurred through the base of an ulcer about the size of a half dollar. The adjacent part of the bladder wall was dark colored. This patient passed a large amount of bloody urine four days before his death.

In 1896 Fenwick<sup>5</sup> reported six cases of "simple solitary ulcer of the urinary bladder" in a clinical lecture published in the *British Medical Journal* of May 9th, 1896. He has observed this ulcer in both sexes. The majority of his patients were young men about 20 years of age. He has observed contact ulcers on the opposite wall, especially in the female organ.

In 1892 Johnston<sup>6</sup> reported a case of death from peritonitis following a rupture of the bladder through the base of an apparently simple ulcer three inches in diameter.

In 1900 Chaufford<sup>7</sup> reported an intraperitoneal rupture, elliptical in shape and the size of a two franc piece, occurring at the upper posterior part of the bladder and noted its resemblance to a gastric ulcer.

Just a year ago Christopherson<sup>8</sup> reported a most interesting case of a man aet. 49 with symptoms of what he thought to be probably a tuberculous ulcer. These symptoms began about two years before, during an attack of rheumatism. They were, frequency of micturition, pain during and after urination, supra-pubic and at the end of the penis. He had suffered from lead colic. No tubercle could be found in any part of the urogenital tract or elsewhere, nor was the tubercle bacillus to be found in the urine; had only passed blood sufficient to color the urine on one occasion. Through a supra-pubic incision the cavity of the bladder was found to be small and the walls hypertrophied but otherwise healthy except for a small ragged irregular ulcer with granular surface and thin edges, and about 1.9 cm. in diameter, between the two ureters and on the posterior part of the trigone. When it was touched over with swabs of wool wet with carbolic acid, 1-20, the surface bled readily. There were no signs of caseation or tubercles anywhere and the ulcer looked more like an anal ulcer than anything else. The ulcer was not found indurated or perforating and quite unlike a gastric ulcer. There were no signs of malignant disease. The bladder was drained suprapubically and washed out with a solution of borax and iodine for twenty-eight days. In about two months he gained two stones in weight, and left the hospital apparently cured.

On January 7th of the present year, Daly and Harrison,<sup>9</sup> reported a case of spontaneous rupture of the bladder occurring in an Irish harvester 36 years of age. The man was seized with pain while carrying a pail of water with which to wash himself. At the operation an intra-



peritoneal rent was discovered of sufficient size to admit the tip of the index finger. This was sutured with two layers of Lembert sutures, the mucous membrane not being included. The rent was situated midway between the fundus of the bladder and the bottom of Douglas' pouch and was vertical and central. Notwithstanding some deplorable complications the man made a good recovery.

Rawson<sup>10</sup> reports the death of a woman aet. 35, taken suddenly ill and dying in 36 hours. At the autopsy a small ulcerated opening was found at the summit of the bladder. The mucous membrane of the bladder, for the breadth of half an inch around the opening was highly injected with blood and was of a much darker color than the rest of the mucous lining. Purulent matter was adherent about the edges of the ulcer. The woman had been confined with a living child about a month previously by a midwife, and from what could be made out she had had a favourable labour and attended to her usual work after the first week. She had never referred to any pain in the region of the bladder, but had been heard to complain, both before and after labour, of an inability to empty her bladder completely.

Thurston<sup>12</sup> reports a case of chronic perforating ulcer of the bladder occurring in a married woman 52 years of age. The symptoms had been present for over four years before the perforation of the fundus of the bladder occurred. The hole had been closed by adherent omentum.

We are all familiar with tubercular ulceration of the bladder and with the breaking down of tissue secondary to neoplasms, and Proksch<sup>11</sup> has told us something of syphilitic ulceration; it occurs rarely in cases of long-standing prostatic cystitis. Does there occur an ulceration of the bladder wall independently of trauma (including pressure), tubercle, syphilis and new growth? I am not prepared to answer that question in a monosyllable. The evidence that I have collected favours, in my opinion, an answer in the affirmative.

An antemortem diagnosis, before the advent of the cystoscope, was impossible, and the true condition was only determined after the occurrence of perforation and then generally in the autopsy room.

I have selected these 17 cases from a larger number in which the reports were sometimes too incomplete to permit of classification. In some instances perforation has occurred after a fall, or the receipt of some form of violence. It yet remains to be determined just how much force is needed to rupture a full or distended bladder, not weakened at any one point by ulceration or sacculation. In this list all such doubtful cases are excluded.

I think we must look to one or more of three conditions for the cause of single ulcer of the bladder—infection, thrombosis and syphilis. It

has been thought by some that probably most perforating ulcers were due to a breaking down gumma in the bladder wall. In very few of the case reports is the suspicion of syphilis raised and the autopsy findings have not disclosed a condition that has suggested the presence of breaking down gumma. In both of my cases cocci of various forms were present. The first may have been tubercular in nature from the beginning but at the time of first operation there was no appearance of tubercles. But it would appear that there must be some other etiological factor present in addition to the infection. Simple infection of a normal bladder does not as a rule end in perforation. Mention is frequently made of the similarity between perforating ulcer of the bladder and that of the stomach and duodenum, and it is quite possible that in each case a similar pathology obtains.

The condition is referred to by Rokitansky, under the name of chronic perforating ulcer of the bladder. Lawson Tait refers to four cases in two of which Sir J. T. Simpson established a vesico-vaginal fistula to obtain physiological rest and relief to the patient from pain. The evidence of the exact nature of the bladder lesion in these cases is not made clear in the report.

The symptoms in the majority of cases were, pain, frequency of micturition and the presence of small quantities of blood in the urine.

The pain is very severe and often referred to some point in the penis in the male and about the neck of the bladder in the female. The intensity of the suffering is often very great. In both of my cases the penis was held in the hand and guarded from dreaded violence. These boys would cry out with the pain of the penis. Fenwick states that some of his patients would cut the pocket out of their trousers that they might carry the penis and so better protect it. The suffering interferes with nutrition and requires morphia for its relief. In some cases there seems to have been very little pain indeed.

The frequency in micturition varies in different cases. My first case urinated very frequently. I think that I have found a definite relation to obtain between the situation of the ulcer and the pain and frequency of micturition. If the ulcer is about the trigone and ureteral orifices, or in fact if it is in the neighbourhood of the neck of the bladder, the pain and frequency are great. On the other hand, in those cases where the ulcer has been situated about the fundus there has often been a remarkable absence of symptoms until the occurrence of hæmorrhage of perforation. The symptomatology in this respect bears a close resemblance to that of gastric ulcer.

The diagnosis can be made with a considerable degree of certainty when the onset is sudden and the symptoms mentioned are well defined.

The cystoscope is of the greatest value here, and should always be used if possible.

The prognosis in cases seen early is good. They yield readily to treatment and in some instances have probably healed without any treatment at all.

The local application of solutions of nitrate of silver seems to have been most generally useful. In my second case I used a solution of 1 in 10,000. It caused some smarting at first which passed away soon after the solution was replaced by a saline solution. I used the injection daily and the pain became progressively less as the patient improved. Sir James Simpson is reported to have treated two cases successfully by the establishment of a vesico-vaginal fistula. Christopherson made a supra-pubic incision, touched the ulcer over with swabs of wool wet with carbolic acid, 1-20. The bladder was drained supra-pubically and washed out with a solution of borax and iodine for twenty-eight days. In two months he gained two stones in weight. He left the hospital apparently cured.

Boracic acid, salol, urotropin and helmitol are indicated.

It is unfortunate that ulcer situated on the fundus is so often without striking symptoms. A haemorrhage may give the first intimation of its presence. If perforation occurs into the peritoneal cavity it may be closed. I believe that as good results may be obtained here, by early diagnosis and prompt interference, as in the case of perforating ulcer in the stomach; perchance even better results, because there may be a less virulent infection.

In conclusion I would submit that in view of the clinical evidence now accumulated for the existence of a single non-tuberculous ulcer of the urinary bladder, and the post mortem reports of six perforations of the bladder through the bases of single non-tuberculous ulcers, the condition should be more generally recognized and should find a place in the text-books.

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## ENTEROLITH.

BY

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Mrs. M., aged about 60 years, a strong, healthy married woman, the mother of several children, was taken ill on February 10th, 1903. I saw her the same evening, and she complained of having pain in the abdomen the previous day, for which she had taken a purgative, without result.

About ten or twelve years ago I had attended her for an attack of what I considered was biliary colic, her first and only attack, from which she promptly recovered. There was no jaundice. Careful watch was kept for some weeks, but no stone was found. From time to time since then she has complained of symptoms of atonic dyspepsia, but for the past five years she has been in good health, until the present illness.

At my examination there were no objective signs; on the following day there was slight abdominal pain and rectal tenesmus, but no tenderness or vomiting. Purgatives and rectal injections were without result.

On exploring the rectum it was found to be empty, but on trying to pass a high rectal tube, it would not enter the sigmoid flexure. On bimanual examination I found a soft moveable mass which I could not dislodge. On the fourth day of the illness, the temperature was 101°, the pulse, 120; and marked tenderness in the left iliac fossa, with some general distension, but no vomiting. The patient's general condition was not satisfactory, and the necessity of an exploratory incision was considered; but I made a further effort to dislodge the mass late at night, and the following morning the large specimen shown and here illustrated was passed, and later the smaller one. There was immediate relief, but temperature and iliac tenderness remained, and excreta was blood-stained for some days.

A microscopical examination of the large specimen showed cholesterol crystals and bile pigment. The large specimen weighs 18.14 grammes, and measures 4 c.m. in its long, and 3½ in its short diameters. In the centre of the larger specimen can be seen what looks like a biliary calculus, the smaller one is undoubtedly a calculus showing faucetted surfaces.

Medical literature abounds in reference to the passage of biliary calculi and much discussion has taken place regarding the methods by which large calculi pass from the gall bladder to the intestines.

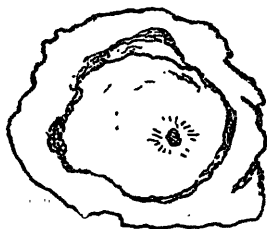
It would seem that the common duct can transmit a very large stone by gradual dilatation, and again the stone may pass from the gall-bladder to the duodenum by ulceration, both without causing much disturbance to the individual. Intestinal obstruction by gallstones or enteroliths is more common in women and is usually seen between the ages of 50 and 70 years. The common site is in the small bowel just above the ilio-caecal valve. In the case under discussion I considered the obstruction was at the sigmoid flexure which is the narrowest part of the colon.

An interesting point is, whether I dislodged the obstruction by my finger, or if the rising pulse and temperature was the result of ulceration breaking down the fold of intestine, thus making a passage. The blood-stained mucous and iliac tenderness would suggest the latter; possibly both played a part. The absence of vomiting prevented me from performing an exploratory incision.

Gibson (1) states that in 1,000 cases of acute obstruction, 49 were due to gallstones, and 16 to foreign bodies. A few of the larger calculi causing obstruction are reported by William Ord (2), Dryden Stead (3), Robert Wilkinson (4), Chas. Mills (5), Pye-Smith (6), Erdmann (7), and an enterolith, in the centre of which, was a plumstone, by Hurry Fenwick (8).

The International Textbook of Surgery refers to a series of cases collected by Lothrop in which 133 were due to gallstones, 16 to enteroliths, and of these 16, 10 had a gallstone as a nucleus.

I am indebted to Dr. F. G. Finley for his advice in consultation, and to Dr. Bruce for the microscopical examination, but a thorough chemical examination would have destroyed the specimen.



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## MULTILOCULAR CYST OF LOWER JAW.

BY

C. B. KEENAN, M.D.,

Royal Victoria Hospital, Montreal.

We have to deal with a patient now aged thirteen who came to us for treatment complaining of an enlargement of the right inferior maxilla. The history of the case is as follows:—As a child nothing was noticeable but, at the age of two, the parents remarked a small lump projecting externally upon the right lower jaw about one inch from the symphysis. From this time forward the lump has undergone a slow enlargement up to the present time, having occasionally associated with it a slight amount of pain. There was nothing abnormal noted with regard to the eruption of the temporary teeth, but with one exception the teeth above the tumour have not been shed; its removal however was followed by the eruption of a permanent tooth. The growth did not follow any injury to the part and there is no syphilitic history.

Examining the patient, there is seen to be an enlargement of the lower ramus on the right side, beginning in front about half an inch from the symphysis and extending backwards to about half way along the ascending ramus. The enlargement shows itself more particularly on the external surface of the jaw. While there is this outward projection, there is not much alteration in the outline of the upper or lower border of the jaw; we have to deal in the main with an irregular widening of the part. As regards the teeth over this tumour, there are two remaining temporary molars and a recent imperfectly grown permanent molar. The tumour itself is relatively firm, in fact distinctly hard and pressure upon it reveals no crackling nor evidence of fluid contents; in its neighbourhood are a couple of just palpable lymph glands. Beyond this the case presents nothing abnormal.

In considering the diagnosis of this case, several conditions must, I think, be ruled out. Simple hypertrophy of the jaw due to rheumatoid arthritis or to nervous conditions, may be at once eliminated. There is no history nor evidence of syphilis; chronic osteomyelitis is clearly not the cause of the growth, for if it were, it would, in the course of the eleven years during which the tumour has been present, surely have given rise to sinus formation. Epulis grows from the surface of the jaw; here, on the contrary, the growth can be felt as generally involving the middle portion of the ramus. Chondroma or osteoma would be more sharply localized. The skiagraph also comes to our aid by showing that we have not to deal with any completely consolidated mass, but one in which there are more rarified areas. Osteoid sarcoma might have

given a tumour possessing the hardness of the present one, and, in consequence of hæmorrhages and other conditions of breaking down, might have given a somewhat similar skiagraph, but had this condition been present, we may with confidence say that the patient would have been dead some years ago.

There remains for consideration those tumours of the jaw grouped together under the name of odontomes by Bland Sutton, but also known as dentigerous cysts by Eve, follicular cysts by Magitôt and adeno or cystic carcinomata by others.

Such cysts are usually grouped together under three main heads:—

- (1) The true dentigerous or tooth-bearing cyst.
- (2) The diminutive but allied form, the so-called dental cyst.
- (3) The multilocular cyst, sometimes but erroneously termed multilocular dentigerous cyst.

The general opinion of the present day is that these three forms are, one and all, connected with and developed from the enamel organ or at least from the mass of epithelial cells from which the enamel covering of the tooth becomes eventually formed.

In order to understand this relationship, it will be well to briefly recall the mode of development of the tooth. At about the seventh week of foetal life, a small portion of the epithelium covering the jaw dips down or is enfolded by the underlying fibrous tissue until there is produced a flask-shaped, downward-projecting mass of epithelial cells whose expanded lower end lies deep in the connective tissue stroma which eventually gives place to the bone proper forming the lower jaw. This little flask-shaped body is the so-called enamel organ. From being solid, it now becomes hollow by degeneration and breaking down of the central cells, thus forming a small, hollow, epithelial sac or cyst.

Somewhere at the lower extremity of this sac there projects into it a small bud of fibrous tissue which pushes the wall before it so that in a short period there is produced a small amount of of mesodermal tissue, capped by an invaginated epithelial sac. It is in immediate connection with this projection and its epithelium that the future tooth is formed.

But if, at this period, physiological development is arrested, then through the secretion of the cells lining the cyst, that cyst may enlarge and so there may be produced a relatively large hollow space lined by epithelium, often of a greatly altered appearance, and containing, projecting from its wall, either one or sometimes several poorly formed teeth.

This is the true dentigerous cyst, and the clinical history in such a case is generally that in the region of an unerupted tooth there ap-

pears a lump in the jaw, painless and undergoing a slow increase in size, the expansion being most marked externally. After a while crackling or fluctuating is present. Such a cyst may or may not contain a supernumerary tooth or teeth but the presence of such is not absolutely necessary; the adjacent teeth often become loosened. Free incision with excision of the wall of such a cyst invariably produces a cure, for cysts of this order are never malignant.

The second form, the so-called dental cysts, are small sacs found attached to the fangs of the permanent teeth. These are rarely of such a size as to be of interest to the surgeon; they are accidentally discovered by dentists and by them are often considered to be abscesses with thickened fibrous walls. Turner has shown that these cysts have an epithelial lining and states that they develop from the remains of the enamel organ.

The third form, the so-called multilocular cysts, show yet other characters. Tumours of this nature are known also as adenosarcoma, cystic sarcoma of the jaw, and often simply as dentigerous cysts. Cases of this nature have been studied by Eve, and Heath, in England, Falkson, and Bryk, in Germany, and by Magitôt in France. It is to these authors that I am indebted for much of my knowledge of these peculiar tumours.

Such multilocular cysts may appear at any age. The earliest case recorded was at five months, the latest at fifty years. They may or may not be the result of delayed or incomplete dentition. They are of slow growth and, like the first form, cause expansion of the jaw more particularly on the outer aspect. Microscopically they consist of numerous small cysts which contain a yellow, colloid material verging upon red. The individual cysts resemble the structure of the enamel organ at its fullest period of development. There is a fibrous or bony wall lined by a layer of large columnar cells. In the colloid material filling the cavity, there are cells of a more stellate nature which would seem to be epithelial cells undergoing a colloid degeneration. The fibrous tissue surrounding these cysts often resembles in structure an epulis or simulates a myeloid sarcoma. This resemblance to more malignant forms of growth has led to numerous cases being recorded as myeloid sarcoma. Dr. Bell operated upon two cases in which that structure was well shown and Chadwick, in the *Annals of Surgery* for January, 1903, gives good figures and descriptions of the condition.

As to the exact mode of origin of these multilocular cysts, observers are, by no means agreed. Eve regards them as due to down-growth of the surface epithelium; Magitôt claims that their origin is the same as that of the unicellular cysts and that the locular appearance is produced



by a growth of the expanding cyst into the surrounding bone. It is further to be noted that teeth are rarely present in these multilocular forms.

The prognosis of this last form of tumour is in general good, though Heath<sub>2</sub> and Salter<sub>2</sub> and Hutchinson<sub>2</sub> have each recorded cases in which recurrence took place after fairly wide removal, and other cases in which metastasis occurred in the cervical lymph glands. Bland Sutton claims that when there are these metastases, it is a case of mistaken diagnosis, and that such malignant tumours are really in the first place endotheliomata.

The treatment is that recommended by Butcher of Dublin, namely, free incision and scraping away of the cystic portion with removal of the outer wall.

Returning now to the matter of the diagnosis of the case in point, I conclude that from the steady enlargement over a long period of years, the firmness of the walls, the number of teeth affected, the case must be considered one of this last form of multilocular cystic disease of the jaw, a conclusion which would seem to be definitely supported by the appearances shown in the skiagraph.

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## FRACTURE OF BASE OF SKULL AND RUPTURE OF LUNG WITHOUT FRACTURE OF RIBS.

BY

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C. F., aged 35, fell from a scaffold about 35 feet high,—was brought to Montreal General Hospital and died on the second day after admission. The diagnosis was fracture of the base of the skull and the autopsy showed the following conditions:—

Body of a well nourished, heavily built young man; rigor mortis well marked, post mortem lividity in dependent parts. There was laceration of the right ear, with complete tearing away of a small portion of the pinna, severe bruising of the head about the right ear; hæmatoma of tissues about right eye, and hæmorrhage into conjunctiva. The right pupil was dilated, the left normal. There was a small parchmented scar over right scapula and also on the point of the right shoulder. No other marks of violence were found on the body.

On turning back the scalp, much effusion of blood into the substance of the right temporal muscle was observed; and on removing the skull cap a fracture was seen extending across the right parietal, right orbital plate of frontal, base of sphenoid, in sella turcica and left greater wing of sphenoid bone, and also along the front of the left petrous portion of the temporal bone parallel to the ridge. The brain showed moderate laceration at the base of the temporal lobe on the inferior surface. There was also extradural hæmorrhage; the brain tissue and meninges were otherwise normal. Both middle ears contained effused blood.

On section of the body the right pleural cavity was found to contain five ounces of blood and the left thirteen. None of the ribs on either side were fractured; but the eleventh rib on the left side was dislocated. The upper lobe of the left lung was emphysematous and the lower collapsed. The bronchi contained a considerable amount of bloody mucus.

The right lung was adherent to the parietal pleura by a considerable number of firm fibrous bands, the upper and middle lobes somewhat collapsed and the lower lobe ruptured in two places, one situated posteriorly, T shaped, the greater line of which was 9 cm. in length, running parallel to the base and the lesser extending upwards for a distance of 5 cm.; the other situated anteriorly, commencing a little above the base and extending upwards for a distance of 10 cm., parallel to the anterior margin. The bronchi were filled with blood, the vessels free, the pericardium was normal, the heart enlarged, the valves healthy, the muscle pale and brittle. The spleen, stomach intestines and genitalia were normal, the liver substance was pale, glycogen was present, but no sugar; the gall ducts were pervious. There was perirenal hæmorrhage on the right side, but the kidneys were normal. The œsophagus was normal, and the trachea was filled with bloody mucus. Extravasation of blood into mediastinal tissues was observed. The foregoing case is reported as possibly being of some interest; although a number of similar cases have been recorded, yet rupture of the lung without fracture of the ribs or injury to the chest walls is a somewhat unusual accident.

#### **Status Lymphaticus.**

J. M., a female infant, one year old, had been given a dose of 40 drops of soothing syrup and died a short time afterwards. The syrup contained one grain of morphia to the ounce. The autopsy ordered by the coroner showed the following conditions:—

Body of a well nourished infant one year old, rigor mortis well marked and slight post mortem lividity. On opening body, organs

fill cavities, heart rather large, auricles filled with firm clot, especially the right; muscle and valves healthy.

Lungs, pink in colour, crepitant throughout, vessels and bronchi free, substance on section healthy; spleen normal in size and healthy; stomach contains a small amount of partially digested food, mucosa of stomach healthy. Small intestines healthy, but Peyer's patches and solitary glands very prominent; large intestines contain a considerable quantity of hard faeces, mucosa healthy; bladder contains a small amount of urine, mucosa healthy. Liver and kidneys healthy; the mesenteric glands very large and firm; the inguinal glands appear normal. Trachea and oesophagus healthy; parathyroid and bronchial glands much enlarged; axillary glands normal; thymus gland very much enlarged. Examination of brain showed nothing special.

The condition of status lymphaticus is somewhat rare, and is chiefly found in young children; the lymphatic glands and the lymph tissues throughout the body, the spleen, the thymus and the lymphoid bone marrow being in a state of hyperplasia.

The special interest lies in the fact, that these pathological conditions are found in cases of sudden death. Paltauf believes that individuals with this hyperplasia have lowered powers of resistance and are liable to paralysis of the heart.

A number of sudden deaths have occurred in children, where the only attributable cause revealed by post mortem examination was hyperplasia of the thymus gland.

The foregoing case shows this condition of lymphatic hyperplasia to a marked degree in the thymus gland, the pharyngeal, bronchial and mesenteric glands, and also in Peyer's patches and the solitary glands, and to this condition in the case recorded may be attributed the sudden death following a dose of 1-12 of a grain of morphia.

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The July number of the JOURNAL will contain a full abstract of the very complete paper presented before the Royal Society of Canada on 19th May, 1903, by Dr. A. G. Nicholls, upon the effect of the blood-sera of normal and immunized goats in modifying the progress of tuberculous infection.

T H E

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## THE STUDENTS' UNION.

The medical student has always been a thorn in the academic side. To the arts man, with his head in the air and his soul in the ether, it does seem incomprehensible how any human beings could be so intolerant of authority, so incautious in language and so uncivil in conduct. The most prevalent explanation of this aberration of moral nature is that it is due to a lack of intercourse and want of familiarity with the members of the other faculties. But this obstacle to a more civilized way of life will soon be removed, and all the undergraduates of the university will meet together, the rich and the poor, the raw and the cultured, in the Students' Union. At least that is the proposal.

There is no intention for the present to discuss here the very real question of the utility of a Students' Union, or to advance an opinion as to whether in the main it is a good thing, and if so, how good, for the university; the relation of the medical student to the union and to the university at large is however a matter for legitimate consider-

ation. The late Dean of the arts faculty always took the ground that the professional students were not university students at all. This is probably an extreme view, but certainly in them Dr. Johnson used to discover the *fons et origo* of all unacademic deportment and unseemliness of conduct. Even the Principal himself on one occasion thought he observed a certain rawness of behaviour on their part.

The truth of the matter is, the student with purely academic aspirations comes to the university for one reason, and that reason is entirely distinct from the object of the professional student. This brings up the question as to why a student comes at all, and what the function of a university really is. Very few persons now hold the belief that it is to do nothing. That view has been abandoned even in the English schools, though it is not so very long since Sir James Fitzjames Stephen wrote: "the three or four years, during which I lived on the banks of the Cam, were passed in a very pleasant though not a very cheap hotel. But if they had been passed in the Clarendon in Bond Street I do not think that the exchange would have deprived me of any aids for intellectual discipline or for acquiring literary or scientific knowledge."

A very common notion is that a university is a place for study. A university used to be occupied by grown men of laborious vigour, bent upon acquiring the knowledge then extant and the deductions and conclusions that were held to flow naturally from its possession. There, the finer classics, the subtler thoughts and fancies, the more evanescent shades of meaning inherent in words were held to constitute scholarship, and in it were included poetry, literature and imaginative play. The newest view is that a university should fit men for what is called life, that is for struggling with the forces of nature, whether it be in seeking for gold, bridging chasms or building railways to connect one town with another. To this end science was thought to be the thing, in giving to men a superiority over the brute force of nature. There is a good deal to be said for this view of the case; for who can build a bridge better than an engineer, or find a coal mine quicker than a geologist? Certainly, the man trained merely in the methods of the older dramatists, or skilled to trace the sequence of the amours of Horace would have no obvious advantage in the useful employment of bridge building or the mining of coal. Yet, there are many who will agree with Dr. Johnson that to teach these things is not the chief function of the university at all.

No one ideal will serve for all universities alike. At Cambridge, as Mr. Bagehot made clear, the scheme of tuition aims to teach students the discoveries of Cambridge men, dynamics and the latest de-

ductions in the more obtruse sciences; at Oxford, on the other hand, all attempts at any such novelties are disdained, or were so until very recently. Again, the profit to students from a residence at either of those seats of learning is anything but scholastic. The young men of England are educated—as the process is called, by Englishmen, with that curious capacity of theirs for calling things by wrong names—in different schools. They come to the universities to learn each other's names, to know each other's faces, to attain certain manners, to form friendships which shall give them a good start in English life. In the Scottish universities a boy is confirmed in the obstinate traditions of his race; in Germany he attains to a social position to which not his birth and certainly not his breeding would entitle him. All these are definite objects and clear ideals, though many will be found to deny the utility of maintaining such splendid establishments for their propagation.

No university can attain to anything more than provincial greatness which does not minister to some one definite idea. What that idea shall be is a matter of slow growth, and fidelity to a long tradition. For nearly a century Harvard was nothing more than a "wooden college, in Cambridgeport," supplying ministers to the congregations, lawyers to the courts, and to the young men of Massachusetts a certain training in the classics. For causes into which it is not necessary to enter here, the people of Boston and its vicinity, partly by a process of growth, and partly by adoption arrived at a certain view of life, and to-day Harvard stands for that view. It does not matter for the present purpose whether that view be the correct one or not; at any rate, it has largely prevailed and there is a running together to Harvard from all parts of the country of students who are impressed with the value of that idea. From the same family one boy will go to Harvard; another will go to Yale because he is impressed by the Yale Spirit. This Yale spirit is a thing of definite growth, until now it has come to signify the desire and capacity for success, as success is generally understood in the United States, to be first in all the activities of life, in football, in business, in municipal government, state politics and national statesmanship. Nearly all the men of eminence in affairs in the United States, who are graduates of any university, have graduated—or were graduated, as they say themselves—from Yale. No one pretends to say that this was the confessed idea of the founders of the college; probably they had no idea beyond meeting the local needs of the case. In the beginning, Yale was a mere collegiate school, and classes were held anywhere, now at Saybrook, now at Killingworth, and again at Milford. The charter was changed from time

to time to meet the new conditions, and it is not more than twenty-five years ago that Yale was erected into a university as the abode of the Yale spirit. It would be easy to go through the list of the great American universities and show that each stands for something and those, that are not great, are not great because they stand for nothing.

What then is the ideal and object of Canadian universities? With the exception of McGill they are all purely local and provincial in their aims. Queen's, until very recently, had for its object the supplying of very excellent ministers for the Presbyterian Church, as King's did for the Anglican, and Sackville for the Methodist community. Dalhousie was busy developing a love or hatred of the classics, as the case might be, and supplying teachers for the smaller American colleges; and Toronto still seems to be consuming its energies in securing a provincial grant, which makes it more provincial still, and in keeping graduates of McGill out of the Ontario public schools. There are signs of improvement, however, and Queen's especially is lifting itself above its purely local environment.

The situation of McGill is peculiarly favourable for developing and being dominated by a university idea. It is in a province and yet not of it; it does not represent the Quebec spirit—Laval attends to that—as Toronto represents the spirit of Ontario, and Dalhousie the spirit of Nova Scotia. It is free from the oppression of purely local influences; it offers to students a freedom of mind; it opens their eyes to how queer and extraordinary the ideas are that they previously held. No man can foretell the course of any human institution, not even a writer in a medical journal, but it is not displaying wisdom beyond the needs of the case to say that a university must have an idea, that it must live close to it, that every act, every appointment—and every superannuation—must make for its establishment.

Without, then, being wise beyond the event, it may be said that the idea of McGill University, for the present at least, should be to fit the young men of Canada for an intellectual life, to teach them that everything they do, whether it be practising medicine or law, or building bridges or excavating mines, should arise out of and in turn minister to that life. If they are given the right point of view they will see all things in the proper relation. This education will not make them more clever; it will make them more sober and more calm. The Principal and the late Dean of the arts faculty will probably dissent from the view that the medical student is above all others remarkable for sobriety and calmness. He has begun to see things face to face in the dissecting room, and in the laboratories, and he is learning that his previous knowledge was in no way remarkable. His discovery—

to him a discovery—of the misery and suffering that are in the world has aroused his sympathy and with the heedlessness of youth he may be a little intolerant of the purely academic student, who does not know that his notions are old notions and that he has not yet touched the facts of life. The medical student has put away childish things, and his boisterousness is only his own way of signifying his desire that his fellow-undergraduates should also put away the childish things of which they are possessed.

It may appear that this is a great deal of writing about a small matter, but the Students' Union is not a small matter—in the eyes of its promoters at least. They hope that it will be the means of promoting the university idea, not in any Chauvinistic sense, but in the widest way, and that end is wholly good. If the students can be brought together under any circumstances, they will learn much from each other, and the medical student will not be the greatest debtor of all.

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#### THE TEACHING OF ANATOMY.

The teaching of human anatomy at McGill has been made more human still by calling attention to the lives of the great anatomists as well as to the bodies of the anatomised. A certain portion of the time has been set apart for the students to give the results of their researches into the career of men whose names had only been associated in their minds with an obscure foramen, a gland they had never seen, or a canal of doubtful existence. There has always been an inability on the part of the students to realize that the teachers with whom they come in daily contact are mere mortals like themselves; that is why they are more amused than the occasion would seem to warrant by a display of humour or even by a mild exhibition of temper occurring in the course of a lecture. Their surprise is all the greater when they discover manifestations of humanity in the recorded lives of teachers long dead who have had no real existence in their minds. A student learns with wonder that his teachers on occasions divert themselves with light conversation, that they have other sources of amusement than reading a medical journal; but that revelation scarcely extends to the writers of text books, the discoverers of organisms or the originators of operations. Nothing could be more salutary than this stimulation of the human interest.

Another discovery of value is that graduates do not carry all knowledge in their heads, that books may at times be consulted and students are encouraged to prosecute their researches a little further than



their text books guide them. They gain a familiarity with the body of literature by this device of searching for themselves, and learn that the next best thing to knowing a subject is how and where to find out all about it. It may be possible in time to collect together this series of studies into the lives of the anatomists and give them a wider currency than in the class room. This stimulation of interest is the natural result of the system of teaching anatomy at McGill these twenty years. The best medical teaching is that which aims to bring all facts into relation with each other, and all subjects into a relation which shall have a bearing on the main business of the student which is the understanding of the nature of disease, the prevention of it, and the healing of the sick.

The facts of anatomy are of very little value in themselves, yet the primary student would probably be well advised in not taking this cryptic saying too literally. As a matter of abstract theory there is only one way of teaching anatomy, and that is after the method of morphology, which will also include comparative anatomy, but for the medical student this is a counsel of perfection. He has not the time, he has not even the time to learn the finer anastomoses about the joints, the particulars of the bones of the ear, the palate and the wrist, fascinating as those details are to an examiner. Morphology and comparative anatomy can only be used in an illustrative sense, and it is in so using them the skill of a lecturer consists. Lectures, indeed, are only themselves demonstrative and explanatory to elucidate obscure places by diagrams, drawings, slides, specimens, anomalies and descriptions.

The lecturer is to guide the student, to insist upon special attention being given to this subject or to that, to osteology, to the viscera, to the lymphatic and nervous systems; he is to indicate what may receive less attention, and what may be neglected with safety, all to the end that the student may be converted into a safe practitioner. But, after all, the dissecting room is the place. There the student learns for himself; he trains his hand to obey, he trains the eye to see, and the mind to comprehend. In the old days, when subjects were obtained at long intervals, men were brought from far and near to witness the dissection, but that time is gone by, and each student has to worry out these things for himself. A great deal he will never know, a great deal he will forget; but what he works out with labour will always be his own, especially if he learns it with interest, and it is for that reason the curiosity of the student is to be aroused in reference to the great anatomists as well as to all the other masters of medicine who have preceded him.

## THE CHURCH AND THE PROFESSION.

It is a commonplace of political history that in the beginning the dual functions of priest and physician were held in common, and one who witnessed the occupation of nearly all the pulpits in Montreal on a recent Sunday by members of the medical profession might infer that they were returning to the primitive practice. That inference is probably unwarranted, but the very fact must have appealed to men's minds and given to the message an unusual significance. It was significant too of the attitude of the church and its willingness to cooperate in a work which for a long time has been held to be without its reach, but in truth, at times when the church was losing its authority over the minds of men it always regained that authority by ministering to their bodies; the Gray Brothers of Francis and the Black Brothers of Dominic proved that much.

Strange as it may seem, the present situation of the working people is much the same as it was in the middle ages. The rapid progress of population in the old boroughs outstripped the sanitary regulations, and fever, plague, or the more loathsome leprosy reigned in the wretched hovels. It was to these haunts the gentle Francis directed his disciples, and they took up their abodes in the noisome lazar houses, in the shambles of Newgate, or in the swampy marshes between the city walls and the Thames. The population of the great modern cities has again got ahead of sanitary control, and even where all public facilities are provided and all reasonable regulations enforced, there yet remains the wide field for domestic and personal hygiene. It is to this work the church and the medical profession can jointly apply themselves.

The ministerial association of Montreal, representing all the non-Catholic bodies, and the archbishop, for the older church, adopted most kindly the suggestion of the publication committee of the league against tuberculosis, that the people should be addressed upon the danger to which they are subjected, the menace they might become to others if infected, and the means of obviating the double disaster. Probably nothing new was said upon the pathology or prophylaxis of tuberculosis, but it must have been new to some of those who listened to the addresses; interest in the subject was awakened and the whole experiment marks another advance upon the "Captain of the men of Death."

Those who are wise beyond present requirements affect to believe that a reign of terror will be established by proclaiming the infectivity of tuberculosis, that false hopes will be raised by preaching its cura-

bility. It may not be a bad thing to employ fear to bring men's minds to a realization of the dangers to which they and their children are exposed; if some hearts are made faint by hopes falsely raised, others will be cheered by the new doctrine of curability, and finally when this plague is abated Nature may be trusted to discover some new method for destroying her own weaklings. Another observation worth making is, that it will do medical men themselves no harm to be brought into a closer even if temporary contact with the church.

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### THE REGISTRATION OF DEATHS.

The United States census office has recently been organized upon a permanent basis, and the Director, W. R. Merriman, with W. A. King, the Statistician, are applying themselves with diligence and ingenuity to the great work of registration of vital statistics. The difficulty they have to contend with is that registration is now governed by regulations of the individual states, and there is no such uniformity as prevails in the Registrar General's office in England. To secure uniformity a movement for the extension of registration legislation and methods upon such lines as experience has demonstrated to be necessary has been initiated by the census office in conjunction with the American Public Health Association. This movement has been approved by Congress in a resolution which recites the necessity for it, and requests the favourable consideration and action of the State authorities, to the end that the United States may attain a complete and uniform system of registration. The aim is to secure more complete and accurate data for vital statistics by promoting the extension of registration of births and deaths upon uniform lines, and to make the registration records of greater value to individuals by insuring the proper registration of all births and deaths that occur.

The collecting of statistics of mortality is of great importance for sanitary purposes and the science of sanitation is coming to be one of the most important considerations of government, but it necessarily depends upon accurate statistical information. The Federal Government has no authority to provide a uniform system of registration of deaths, but must depend upon local authorities to do that work. Statistics of that character, if they are to have any peculiar value, must be gathered from large areas and stated periods, covering a number of years, and the results of comparison and analysis of statistics can only be reliable if the statistics are accurate. In fully one-half the States there are no laws whatever requiring the registration of deaths, and in a number of other States the laws are very imperfect or imperfectly administered:

A standard certificate of death has been proposed to cover all the information generally required under an advanced system of registration, and every item has its own distinct purpose. A vast amount of labor has been necessary to produce these documents, and if physicians, registrars, and others interested can be brought to give their hearty co-operation, a great improvement can be made. The subject of vital statistics is one that should find a place in medical teaching and the movement inaugurated in the United States should extend to this country. In such a case facts of the most vital value could be elucidated.

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#### PROFESSOR VON MIKULICZ.

Just as there are artists' artists, so amongst medical men are there those looked up to and appreciated not because of their popular reputation or their professional success but because they commend themselves to their fellow workers by the manner of their work; they approximate to the ideal formed by their colleagues of what a physician or a surgeon should be. Whether the public appreciate them is here a secondary matter; it may or it may not. Such a surgeon is Johann von Mikulicz. Ever since the days, now years distant, when he was first assistant to Billroth in Vienna, he has attracted the attention and affectionate respect of other surgeons not merely in Austria and Germany but in all the countries of the civilized world. His technique as an operator and his judgment are by them recognized as admirable; his capacity as a clear and weighty writer is equal to his wide experience and is accompanied by a fertility of resource which has led him to devise more than one well known procedure. We need, for example, only refer to his development of the operation of pyloroplasty, as indeed also to all his work on the stomach and intestines; to his osteoplastic resection of the foot, and to his system of hand-disinfection, recently perfected. And over and above all these characteristics of the master in surgery, is that lively, frank geniality, not exactly the attribute of the North German, which renders the pilgrimage to distant Breslau a happy memory to all who, attracted by his fame, have been impelled to undertake it; making that pilgrimage, each and all know that they have made a friend.

It was thus a singularly great pleasure to welcome him recently in the course of what was his first visit to America, when, in response to an invitation extended to him by one of our colleagues he spent a day in Montreal. Nor was the pleasure lessened by the thought that, brief as was his stay on this continent, he held it worth his while to visit us. We know and pride ourselves upon the fact that surgery in Montreal is

sound and progressive and that the hospitals are of the first order, but little is done to advertise these facts to the outside world. Nay, if we may be permitted to accuse ourselves, the surgeons do not contribute to the literature of their subject nearly as much as might reasonably be expected of them, and too much of the good work here accomplished passes unregarded and does not loom as large as it should in the eyes of the medical public. That, all this notwithstanding, Professor von Mikulicz knew Montreal so well by reputation that he was anxious to visit it, has been a source of genuine gratification.

A few months ago there was printed in this Journal the impressions of an English physician upon the American hospitals and methods of medical education, contributed to the *Manchester Medical Chronicle* and based upon a visit to New York, Philadelphia, Baltimore, and Montreal. The outspoken acknowledgment therein made of the rate at which we on this continent are advancing and the position we have reached in matters medical, was not a little interesting. Professor von Mikulicz has given utterance to somewhat similar remarks regarding American surgery. After these years of strenuous and enthusiastic effort, of careful study at first hand of the methods, not of one school, but of every advanced worker in all countries, of willingness to adopt and adapt each variation in technique, however trifling, which has seemed to promise improvement in results, it is good to see that the labour is beginning to bear fruit and that the leaders in Europe are crossing over to us on this continent in order to study our methods and their results. Sound conscientious work must tell in surgery as in all other provinces of human endeavour. Visits like these should give us confidence to advance still further and, above all, confidence in ourselves, our workers, and our schools.

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#### THE ROYAL SOCIETY OF CANADA.

May has, as usual, brought the meeting of the Royal Society and has at first sight, brought the usual meeting; that is to say, something under half of the one hundred or so selected learned men of the Dominion, self-elected as Fellows of the society, gathered together for three days at Ottawa and spent the greater part of the time devoted to business in hearing from visiting delegates how the *société littéraire et philosophique* de St. Louis du Mile End progressed the past year, special reference being made to the eloquent address by Monsieur F. X. O'Neill on, "the archaic purity of the French language," as spoken at St. Louis du Mile End, and again, the statement in detail of the papers read at the monthly meetings of the women's antiquarian

society of Moosejaw, included among which were papers upon such elevating subjects as "my journey to Paris," by Mrs. Aholiab McQuirk. At least we gather thus much from our enquiries as to what was accomplished. Our old acquaintance, the hydrographic survey of the Gulf of St. Lawrence was, judging from the press reports, once more in evidence, as again the appeal to the Government that it should provide a National museum at Ottawa, which should incidentally contain a room—if only a little one—to house the books and papers of the society.

And yet, on further study of the proceedings, the meeting was out of the ordinary. For once there was evidence that medical science came in for recognition. For the first time, if we mistake not, a medical man was President—in the person of Sir James Grant—and the presidential address was upon a medical subject, one that Sir James has made peculiarly his own—"brain power and how to preserve it." Another medical man equally well-known was selected to deliver the popular science lecture in the person of Professor Wesley Mills, who gave an illustrated address upon "a chapter in the physiology and psychology of music." Music, it is true, is not specially a medical subject, but physiology and psychology are sciences ancillary to it, and, after all, it is not the subject of the lecture, but the fact that one of our body was chosen to give it that particularly appeals to us.

Nor were papers wanting in the different Sections of more or less immediate interest. In Section II., the Reverend Dr. Bryce of Winnipeg discussed the various ethnological types of Rupert's Land;—the Santeurs, the Swampies, the Wood Crees, the Plain Crees, the Stonies, the Refugee Sioux, the French Halfbreeds, or Metis, and the Selkirk Colonists. In Section III., upon mathematical, physical and chemical sciences, Professor Lash Miller of Toronto gave a short note upon the investigations conducted by himself and Professor J. J. MacKenzie upon the bactericidal action of solutions of phenol containing salts and the chemical potential of the phenol in the solutions, and in Section IV., besides the presidential address to the section, upon "some aspects of the evolution of comparative psychology," by Professor Wesley Mills, there was presented a paper by Dr. A. G. Nicholls of McGill, upon "an experimental enquiry into the effect of the blood serum of normal and immunized goats upon the tuberculous process." This last paper, after giving a retrospect of the various attempts that have been made by other observers to obtain a specific antitoxic serum for the treatment of tuberculosis, described in detail a series of experiments conducted during the past two years upon tuberculous guinea-pigs and rabbits, made by injecting the sterile blood-serum of

normal goats; then, the normal serum being found to have little effect, a further series of experiments was made in which the blood-serum of goats treated with progressively increased doses of Koch's tuberculin emulsion, was similarly employed. We understand that this very full series of experiments was conducted under a grant presented by the Hon. E. H. Bronson of Ottawa, and that Dr. Nicholl's results, while indicating that it is possible to increase the protective properties of the goats' serum, were not sufficiently marked to convince him that this blood-serum would be useful in arresting tuberculosis in man. His series of experiments is, however, admittedly not complete. The observations of Behring, Ravenel and others, which indicate that active immunity can be produced in cattle by inoculations of tubercle bacilli obtained from the human being, suggest the desirability of similar inoculations in the goat to determine whether the conferment of such active immunity by means of living tubercle bacilli leads to the production of a serum capable of giving passive immunity to other animals.

We are glad to see that at last the Royal Society is becoming the medium for the communication of serious investigations in medical science, such as these of Professor J. J. MacKenzie and Dr. A. G. Nicholls. Until now it has been very largely neglectful of work of this order; while obscure and dilettante bodies like the aforesaid literary and antiquarian societies are given prominence in the annual reports and are invited to send delegates to the annual meetings, not a word is said in that report regarding the existence of such important channels for the announcement of original scientific investigations as, for example, the Canadian Medical Association or the Montreal Medico-Chirurgical Society; the Toronto Pathological Society and the Lister Laboratory Club at McGill, devoted yet more particularly to the scientific aspects of medicine, are equally passed over. This is a grave mistake and should not be. The proceedings and the transactions of the Royal Society should duly reflect the scientific activities of this Dominion in every direction, and the investigations conducted in the physiological laboratory of Toronto university and the pathological laboratory at McGill, are amongst the most important contributions to Canadian science of the last few years. But up to the present moment, for all the recognition they have received from the Royal Society, they might be non-existent. Therefore, it is hoped that this year marks the beginning of an era of due recognition of the medical sciences.

We cannot and would not pretend to criticize the literary section of the Royal Society but, as regards the scientific section, an opinion

may be offered without offence—and it is this; that with the present limited number of Fellows the annual meetings can never be a genuine success. There is an advantage, it is true, in those interested in various branches of science meeting each other annually and coming thus to know each other; it is more than questionable whether this social advantage will ever be sufficient to ensure a regular yearly attendance of Fellows from all parts of the Dominion for a three day's holiday, "le jeu ne vaut pas la chandelle." Could the botanists be assured of meeting a goodly number of other botanists and of hearing and debating a fair number of contributions to the science, the case would be very different. If it takes nine tailors to make a man, it assuredly takes more than three botanists to make a successful meeting—botanically speaking, that is. A solitary professor of pure zoology, an odd entomologist, a single pathologist, two physiologists, three botanists, four chemists, and so on, all labour under the same disadvantage. In one branch of science alone, namely, in geology, is there any considerable number of Fellows, and it is worthy of note that it is just in this subject that there is a due and proper activity on the part of the society, and that the communications in the transactions maintain a uniformly high standard. Admitting this is, however, not the same as admitting that the Royal Society is a useless body. That we strenuously deny. The society is capable of great things, and as the authoritative representative of science in Canada, is capable of influencing the government and the country to their best advantage, and more particularly do the transactions afford a medium for the publication of work of the first order, work which, from its specialized nature and length cannot easily obtain publication elsewhere—work which by the liberal foresight of the Government, can be freely distributed to the centres of learning in other countries, thus advertising the standard of scientific advance attained by Canada, and the opportunities here afforded for research.

On the whole, the papers published in the transactions have been of a high order. Their standard might be steadily raised and greater power given to the authorities to eliminate contributions not of the first rank. And as already indicated greater encouragement might well be given to receive for publication serious studies in all branches of science to the end that the transactions worthily represent all the scientific activities at work in the country.



## Reviews and Notices of Books.

OBSTETRICS. By J. WHITRIDGE WILLIAMS, Professor of Obstetrics, JOHNS HOPKINS University. Pp. 845, with eight coloured plates and 630 illustrations. Published by D. Appleton & Co., 1903.

Dr. Whitridge Williams' long expected book has at last appeared. He has dedicated it to his friends William H. Welch and William T. Councilman, and in so doing he has done well, as the book bears throughout evidence of research and original work by its author, especially in the pathology of obstetrics.

At the outset, one may say that the book is worthy of an exalted position in the literature of modern scientific obstetrics, and will bring no discredit to the illustrious names it bears on its dedication page, nor to its distinguished author.

In the preface, one notes that Dr. Williams aims at thoroughness in the discussion of the subject, and it may be fairly conceded that in this he has been successful.

The following sentence from the preface is very significant of the trend of modern teaching. "Especial attention has been devoted to the normal and pathological anatomy of the generative tract, in the hope that the book may prove serviceable as a laboratory guide to students." Certainly, as a laboratory guide to students, the work is all that could be desired, and while as a clinical guide its strong points are not so apparent, the book leaves little to be desired from a practical point of view. The general style of the book is excellent. It reads easily, is clear, concise, and modest in its tone.

The author shows a decidedly conservative tendency in most things, for example, he strongly advises against cocaine anæsthesia in obstetrics; again he sees no special advantage in the fundal incision of Feitsch in Cæsarean section; while in discussing symphysiotomy the author agrees with Bar, Budin, and others in considering it a more difficult operation than Cæsarean section, and states that it should never be attempted in infected cases. Dr. Williams concludes the chapter on this subject, with the following sentence:—

"Personally, at the present time, I do not expect to perform symphysiotomy under any circumstances, and consider that the present enthusiasm for it will eventually disappear."

The general arrangement of the subject matter is good, though it is difficult to see the advantage of discussing obstetric surgery immediately after the physiology of labour and before its pathology.

The consideration of certain subjects, from the standpoint of the student, is scarcely adequate; for example, while forty pages are

devoted to puerperal infection, all other pathological conditions associated with the puerperium are dismissed in seventeen pages. Again, in discussing asphyxia of the new born, the author does not mention Sylvester's method of artificial respiration, and states that "generally speaking, Laborde's method of tongue traction is the most effective method at our disposal," a statement with which few will agree.

Contrary to most English and American obstetric writers, Dr. Williams prefers the so-called cephalic application of the forceps, to the pelvic, in all but high operations. In other words he recommends that in all cases the blades should be applied so as to grasp the foetal head on either side over the ears, irrespective of the relation of the instruments to the sides of the mother's pelvis. Thus, in dealing with occipito-posterior cases he follows the method long ago recommended by Scanzoni, the double application of the forceps. The blades are first applied with the pelvic curve looking toward the face of the child; in delivery, rotation of the occiput forward is favoured by means of the instruments, then when completed, the blades are removed and re-applied with the pelvic curve directed toward the occiput. With this method the author has obtained the most satisfactory results, and states that he has "ceased to dread occipito-posterior cases" and "regards them with equanimity." Dr. Williams employs the Tarnier axis traction instrument in all cases, where forceps are necessary.

The chapter on eclampsia is particularly good. The author employs morphia in large doses in the treatment of these cases, and is rather opposed to early operative interference. He is not an advocate of manual dilatation when the cervical canal is intact, nor of Dührssen's incisions, preferring to use steel dilators and the *Champetiere de Ribes* bag. Cæsarean section is considered preferable to "forcible and brutal" dilatation of a rigid cervix.

Dr. Williams is in favour of bleeding in these cases, stating that he has bled with excellent results a number of patients whose pulse was thin and weak.

In the treatment of puerperal infection, the author depends on the bacteriological examination of the lochia obtained from the uterine cavity by means of the Menge tube, for guidance. If this examination reveals the presence of streptococci, all local treatment should at once be omitted. In putrid endometritis he advises clearing the cavity of the uterus of debris, with the finger, and then douching with sterile salt solution. Dr. Williams shows the ineffectiveness of anti-septic intrauterine douches and believes they not infrequently do harm

from retention and absorption. The author strongly opposes the routine use of the curette.

He is not favourably impressed with the action of antitoxic serum in these cases, and considers that its therapeutic value has not been sufficiently established.

The book will prove most useful to physicians and advanced students, as two of its most valuable qualities are the extensive bibliography at the conclusion of each chapter, and the satisfactory character of all the illustrations, most of which are original.

A SYSTEM OF PHYSIOLOGIC THERAPEUTICS. Edited by SOLOMON SOLIS COHEN, A.M., M.D. Vol. V. Prophylaxis, Personal Hygiene, Civic Hygiene, Care of the Sick: by JOSEPH McFARLAND, M.D., HENRY TEFFMAN, M.D., ALBERT ALVANES, A.M., M.D., and W. WAYNE BABCOCK, M.D. Philadelphia, P. Blackiston's Son & Co.; Canadian Agents, Chandler & Massey.

This volume is the fifth to appear of a series of eleven, all comprising a system of physiologic therapeutics; the previous ones dealt with electrotherapy and climatology, two volumes to each subject, and this one covers prophylaxis, hygiene and the general care of the sick. As such, it serves as an introduction to the science of medicine and takes account of many things, the cause of disease in general and its prevention, the many problems connected with civic and personal hygiene. There is a wealth of information in the book, though the subjects are so numberless that too much can not be expended upon any one; there is enough, however, for anyone who has no previous knowledge of the subjects and requires a connected account; it is correct and easily accessible. The plan of the book is thoroughly sound and the first part, the origin and prevention of disease, is admirably dealt with by Dr. McFarland and Dr. Babcock; the writing is succinct and entertaining and the facts correctly if briefly stated. The second part, civic hygiene, by Dr. Leffmann, is not so well done. It occupies only forty pages and the meager space is encroached upon by drawings and photographs to illustrate the Manchester experiments; these pictures are a familiar feature in every book of the kind issued since Dr. Lideal carried out his remarkable experiments. The author observes that, "there are some erroneous views prevailing as to the nature of water pollution and its removal"; that is very probable, but we take leave to say that Dr. Leffmann has not done his best to set those views right. To teach that well-water in polluted districts shows a practical freedom from bacteria is a dangerous proceeding; such water may be free, but usually it is not.

Again, it is doubtful if "the proper method of purifying water is by filtration through the soil"; certainly, that method is not imitated by filtration through sand. The two processes are entirely distinct. In the soil the changes are chemical, on the sand the purification is done biologically in so far as these two processes can be distinct, and in the latter case the filter, or what the Germans call the "Schmutzdecke," is formed by the living organisms themselves. It would seem as if there were a confusion between the slow sand filtration of water and the intermittent filtration of sewage. The last part of the book, dealing with the more personal matters, is done with wisdom and good taste. It is a curious commentary on the progress of medicine that eleven volumes could be published upon the subject without any mention of drugs; of course the works on the practice of medicine scarcely go so far as that.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS. By ROBERTS BARTHOLOW, M.A., M.D., LL.D. Eleventh Edition, revised and enlarged. D. Appleton & Co., New York and London, 1903.

In reviewing Bartholow's work, which has now reached its eleventh edition, one must remember that the first edition was published in 1875, and at regularly recurring intervals of two, three, or four years, has been revised and enlarged, proved and otherwise brought up to date. Such a hardy plant must have in it the elements of a strong vitality, and undoubtedly to the well-known author's personality and standing, as well as to his conservatism and care must be attributed the continued success of his work on materia medica and therapeutics. It is, however, a matter of opinion whether the classification adopted nearly thirty years ago and still retained, is the best that could be devised for the present day, and one could wish that the special therapeutics introduced, had been brought together as a separate section instead of being scattered through the work. The absence of any reference to phototherapy or any mention of the ultra-violet rays and the work done by Finsen and his followers in lupus is to be noted. The section on static electricity is scarcely satisfactory to the practitioner familiar with its use and is too indefinite for the student ignorant of its principles and application. In speaking of the current from the jars which simulates the faradic current in its power of producing certain effects on muscular tissue, it is a little misleading to speak of it as being "tapped." The current obtained from the outside of the jars is an induced current, and the frequency so great,

that it far exceeds in alternations the current produced by any faradic apparatus apart from special high frequency coils. It would be interesting if the author could prove that among the ultra violet rays of sunlight there exist the X-rays, as seems to be inferred on page 474, under the heading of "Roëntgen or X-rays," and under the heading of equipment it is not quite clear to the uninitiated whether a static machine and a coil are required, or a supply from the street mains and a coil. This method of therapeutics is disposed of in some forty-two lines, with no reference to its use in malignancy, or certain skin diseased conditions.

One misses any mention of spinal anæsthesia under the headings "cocain," or "anæsthesia," while there may be question as to its ultimate utility, there can be no question as to the extent to which it is being practiced, and one naturally trusts to such a work for mention of it, especially as the Seleich method is quoted and the formula for its solutions given. Of the general excellence of the work there can be no question, and the printing and binding are in the usual unimpeachable style of the Appletons.

DISEASES OF THE HEART AND ARTERIAL SYSTEM. By ROBERT H. BABCOCK, A.M., M.D., Professor Clinical Medicine, College of Physicians and Surgeons, Chicago. D. Appleton & Co., New York and London; Canadian Agents, George D. Morang & Co.

This book of nearly nine hundred pages, beautifully illustrated and otherwise admirably made—as all Messrs. Appleton's publications are—deals only with the diseases of the heart and blood vessels, and the treatment is correspondingly full. It marks the growing tendency away from systems of medicine in which necessarily the whole ground is imperfectly covered and many parts left with inadequate treatment.

The method adopted is largely personal; cases are quoted, and pertinent comment is made upon them, so that the narrative is always entertaining. This human interest is a marked feature of the book, and one gets a vivid impression of the actual patient, his ailments and the improvement that followed upon certain methods of treatment. In this book the personal method has not led to scientific unsoundness, the bane of the clinical teacher; facts in anatomy, pathology and pharmacology are duly appreciated, but they are kept in their place and Dr. Babcock reveals himself as a physician one would like to consult if one were afflicted with heart disease. Men whose business it is to advise the sick will turn with pleasure to this book, and they will receive sound advice in regard to everything connected with Heart Disease.

**INTERNATIONAL CLINICS.** A Quarterly of Illustrated Clinical Lectures and original articles, edited by A. O. J. KELLY, A.M., M.D., Philadelphia. J. B. Lippincott Company, 1903.

There is no more authoritative publication than this. The contributors to this particular volume are Ballantyne, Billings, Cathel, Einhorn, Finger, Fussell, Jonnesco, Keen, King, Manly, Osler, George Ross, Salterthwaite, Senn, Shands, John Thomson, Edward Watson and Wilcox. A glance at the contents reveals the richness of the material within; aneurism of the descending aorta, the treatment of cardiac and vascular fibrosis, Nauheim methods in chronic heart disease, the treatment of chronic urethritis, and the treatment of diphtheria. There are articles upon primary intestinal tuberculosis and pyloric obstruction, upon tic douloureux, traumatic epilepsy, carcinoma of the rectum, and of the maxilla, the results of the resection of the cervical sympathetic in Basedow's disease, acquired umbilical hernia in the adult, on convulsions in young children, and on the treatment of weak feet. The special articles on the greater importance of the organs in the right half of the abdomen, on functional reversion, and on the principles of embryology, are all of great significance and interest. The only fear one has, is that he will not have mastered the contents of this excellent volume before the next will appear; but, having done so, there will be a feeling of security, that not very much of importance in the medical world has been missed.

**THE SURGERY OF THE HEAD**, by Bayard Holmes, B.S., M.D., Professor of Surgery in the University of Illinois, Professor of Clinical Surgery in the American Medical Missionary College, Chicago, Attending Surgeon to the Chicago Baptist Hospital. D. Appleton & Co., New York.

This is the first volume of a series of books to be issued under the title of "Surgical Emergencies." Those conditions which are met with most frequently in every day practice are dealt with at greatest length. Unusual conditions, also important theories and principles are likewise discussed but not in detail. The book is clearly designed to appeal to the general practitioner. The importance of pathology, differential diagnosis and rational treatment are emphasized in every chapter. The work has been made clinical as far as possible. The numerous case reports, gleaned from medical literature, to be found in almost every chapter show this, and certainly add not a little to the interest and value of the book. At the end of each chapter is to be found a number of maxims and a list of the more important and recent literature bearing on the subject. The book is written in a clear and agreeable

style and is of a convenient size, printed on good paper and well illustrated, as is the custom of the Appletons.

**THE PRACTICAL MEDICINAL SERIES OF YEAR BOOKS**, comprising ten volumes on the year's progress in Medicine and Surgery, issued monthly, in charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. V, Obstetrics. Edited by Reuben Peterson, A.B., M.D., Professor of Obstetrics and Gynecology, University of Michigan. April, 1903. The Year Book Publishers, Chicago. Price, \$1.25; series, \$7.50.

The present volume is one of a series of ten, issued at monthly intervals and covering the entire field of medicine and surgery. The series is intended primarily for the general practitioner, and there is sufficient special information for his purpose. During coming months volumes will appear on general medicine, pediatrics, orthopedics, materia medica, climatology, preventive and forensic medicine, etc., until the whole ground is covered. The same publishers have just issued a similar work on gynecology.

**PROGRESSIVE MEDICINE. A Quarterly Digest of the Medical and Surgical Sciences.** Edited by HOBART AMORY HARE, M.D. Lea Brothers & Company, Philadelphia and New York.

This volume covers the first quarter of the present year, and deals with the surgery of the neck, head and chest, infectious diseases, the diseases of children, pathology, laryngology, and rhinology and otology. The contributors are Charles H. Frazier, James B. Herrick, Lloyd M. Crandall, Ludwig Hekoten, A. L. Turner and Robert L. Randolph. Each subject is dealt with in an authoritative way, but pathology is peculiarly profound, and Dr. Hekoten penetrates deeply into the Teutonic mysteries of which that subject is now so largely composed. No other record—good, as many of them are—quite take the place of this book.

**THE INTERNATIONAL MEDICAL ANNUAL, 1903.** E. B. Treat & Co., New York. Price, \$3.00.

This is the twenty-first year of publication of this year-book of treatment and practitioner's index, and the present volume gives an accurate impression of the knowledge of the past year. The book is an amplified dictionary and a rather careful search proves that nothing of importance, that has occurred during the year, is omitted. The arrangement is alphabetical and it is hard to see how a practitioner can do very well without this valuable summary of knowledge.

## Medical News.

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### THE CONGRESS OF PHYSICIANS AND SURGEONS.

The sixth triennial session of the Congress of American Physicians and Surgeons was held in Washington, May 12th, 13th and 14th. This is a congress of the sixteen American societies, which deal with the subjects of medicine, surgery, ophthalmology, otology, neurology, gynæcology, dermatology, laryngology, climatology, genito-urinary and orthopædic surgery, physiology, anatomy, pediatrics, medico-psychology, pathology and bacteriology. As such, it is a meeting largely of specialists.

The president was William W. Keen of Philadelphia, Professor of Surgery in Jefferson Medical College. He delivered the address on the second day before at least seven hundred members, choosing for his subject, "the duties and responsibilities of trustees of public medical institutions."

On the afternoon of the first day the work of the Congress began by a consideration of the pancreas and pancreatic disease.

Dr. Opie of Baltimore, read a paper upon the anatomy and histology of the pancreas, and Prof. Chittenden dealt in detail with its physiology and physiological chemistry. The pathological anatomy was dealt with by Dr. Simon Flexner of Philadelphia, and the symptomatology and diagnosis by Dr. Fritz of Boston. The surgery of the organ was considered by Prof. Von Mikulicz of Breslau, who based his observations upon some sixty cases. Dr. Roswell Parke dealt with the subject of tumours, cysts and fistulæ. An animated discussion followed. On the other days of the meeting the Congress considered the medical and surgical aspects of the disease of the gall-bladder and bile ducts.

A great deal of interest centred in the meetings of the two constituent bodies, which had to do with surgery, on account of the discussion that took place in connection with the work of Dr. Adolf Lorenz. Prof. Lorenz had accepted an invitation of the Congress to attend, but at the last moment he wrote that he could not be present and expressed regret that examples of his work could not be submitted. A report had become current that Dr. Lorenz and his methods would be thoroughly dealt with, and members were disappointed that he was not present. The discussion was very free. Dr. Gibney of New York, cited cases which had been considered cured, but afterwards developed tubercular meningitis as the result of the operation. He believed that the original deformity of the hip returned after the



operation in many cases, and he saw more good in the after treatment than in the operation itself, due largely to the plaster of Paris casts, and not to any special merit in the system. He advocated the continuance of the subcutaneous operations. In other papers that followed, Dr. Steele confirmed the statement as to the danger of tubercular meningitis after operation. Dr. Davis of Philadelphia, preferred to follow more closely what he called the original method as laid down by Paci, by which the members understood him to mean that Dr. Lorenz was not the originator of the methods which bear his name. Dr. Bradford of Boston, partly defended Lorenz's system, and Dr. Ling Taylor of New York, said that the danger lay in its use by those not acquainted with the proper procedure, yet he admitted that he had frequently observed total paralysis of the quadriceps and of the muscles supplied by the anterior tibial nerve.

Dr. Roswell Parke in opening the discussion, said frankly, that he considered the system a failure, as he did not think it advisable "to practice a system attended by the breaking of bones and the tearing of tissues."

Much interest was lent to the section of pathology and bacteriology, by the presentation of Dr. Councilman's paper upon the etiological factor in variola. It had been heralded in the daily press that Dr. Councilman had discovered the essential virus of smallpox, and for that reason, no one believed it. The full account was published in the *Journal of Medical Research*, and while the title of the paper would lead one to believe that the pathological virus of smallpox had been discovered, neither the article itself nor his communication to the Society warranted this assumption, yet his work, it was acknowledged, brought the final discovery appreciably nearer.

At the meeting of the American Physicians, presided over by Dr. James Stewart, the contributions on the blood were noteworthy. Attention was called to the fact that many cases of acute lymphatic leukemia are evidently occurring in this country, though most of them remain unrecognized and masquerade under the guise of fatal typhoid fever and some of them doubtless as acute septicemia, especially after childbirth. At the second day's session Dr. Osler presented the clinical features of what he considers a new condition. This consists of chronic cyanosis without emphysema, renal or cardiac disease, but with a red blood cell count of nearly or quite 10,000,000, and his observations upon three cases were confirmed by the report of cases of more or less similarity from many parts of the country.

This was also the 59th annual meeting of the American Medico-Psychological Association in conjunction with the Congress of American

Physicians and Surgeons, with which distinguished organization it has lately become affiliated. The gathering was quite as successful as those of previous years, and nothing more complimentary could be said considering the success which for many years past has attended all the sessions of this body, the oldest organized medical association in America. The secretary, Dr. C. B. Burr of Flint, Mich., in conjunction with the vice-president, Dr. A. B. Richardson of Washington, had worked with commendable zeal for many months, and the arrangements made and the programme presented were highly commendable to them.

Addresses of welcome were tendered by Hon. H. B. F. McFarland, president of the board of commissioners of the District of Columbia, Gen. Geo. M. Sternberg, surgeon-general of the army (retired), and General Walter Wyman, surgeon-general of public health and marine hospital service, after which the president of the Association, Dr. G. Alder Blumer of Providence, gave his presidential address. This was a most scholarly effort, scintillating with wit and replete with practical suggestions on many topics connected with psychiatry and the care of the insane.

The attendance was large, though short of that at the 1902 meeting held in Montreal, which is regarded by all in every respect as the banner year of the Association, and included a fair representation from the various provinces of the Dominion. The contributions, taken altogether, were above the average in character, and many of the discussions were animated and interesting, notably those on traumatic insanity, a subject to the different aspects of which several of the papers were specially devoted.

A very pleasing feature of special interest to Montrealers and McGill University was the unanimous election to honorary membership of Prof. T. Wesley Mills, whose masterly address on the "reflexes, the ingoing or afferent impulses and their psychic correlatives," delivered before the Association last year, is still recalled with pleasure by all. The 1904 place of meeting has been fixed for St. Louis, Mo., with Dr. A. B. Richardson as President, and Dr. A. E. McDonald of New York, as Vice-President.

By actual count there were over four hundred papers read before the Congress and the constituent societies. In the surgical section Dr. Shepherd read a paper upon the treatment of aneurism of the external iliac artery by compression, and Dr. Armstrong reported cases of single ulcer of the urinary bladder, non-tuberculous and non-malignant in character. Dr. James Stewart gave a short address, and in the Pediatric Society Drs. Martin and Fry were down for a paper on some renal lesions in infancy. Dr. Lafleur described a case of Gastric Syphilis, and Dr.

McCrae presented an analysis of 700 cases of typhoid fever from the Montreal General Hospital.

The next meeting of the Congress will be held in Washington in 1907 on account of the meeting of the International Society of Physicians and Surgeons at the same place in the previous year.

### THE AMERICAN MEDICAL ASSOCIATION.

The Fifty-fourth Annual Meeting of the American Medical Association was held in New Orleans between the 5th and 8th of May, and was one of the most successful in the history of that venerable body. The arrangements for the presentation of papers, for addresses and discussions, as well as for social entertainment were very complete and those who were present testify to the excellence of the results.

This Association is growing in numbers and importance year by year, and as the only standard of admission is an honourable position in the profession, it brings together practitioners and specialists in a way that no other organization does. Apart from its value as a purely scientific body, it performs another and not less important function; it deals with the relation of the profession to the community at large and to all public interests.

The president, Dr. Frank Billings, departed from the usual custom in his opening address, and took into consideration the whole question of medical education, urging that the schools should be reduced in numbers and increased in efficiency.

The papers had a special interest to men from the North, inasmuch as they were for the most part a record of the results of men who work in surroundings quite different from ours. Dr. Happel gave his experience in the treatment of what used to be called continued fever, neither malarial nor typhoid in origin, and made a strong claim for the recognition of this condition. Continued fever as a distinct entity has pretty well disappeared from the text books, but the prevalent view in the South seems to be that it should receive a recognized place. This view was also confirmed by Dr. Krauss of Memphis. There was a certain freshness about many of the papers, from the fact that they dealt with conditions with which men in the North are more or less unfamiliar.

The great work this Association has in hand is the codifying of the rules of medical ethics, and upon this subject two reports were to have been presented. It transpired, however, that the two documents were merged into one declaration of ethical principles, which was considered satisfactory by men of all shades of opinion.

The next meeting will be held in Atlantic City, though Milwaukee

made a strong claim that it should be held in the metropolis of Wisconsin. It will be remembered that the Association met in Atlantic City only three years ago, and there again it will be accessible to a larger number of physicians than in the South.

The officers elected for the ensuing year were: President, Dr. John H. Musser, Philadelphia; First Vice-President, Dr. G. C. Savage, Nashville, Tenn.; Second Vice-President, Dr. Isadore Dyer, New Orleans, La.; Third Vice-President, Dr. C. Lester Hall, Kansas City, Mo.; Fourth Vice-President, Dr. Geo. F. Jenkins, Keokuk, Iowa; Treasurer, Dr. Henry P. Newman, Chicago, Ill.; Secretary, Dr. George H. Simmons, Chicago, Ill.

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#### INTERNATIONAL CONGRESS OF MEDICINE AT MADRID.

This great gathering of physicians from all parts of the world was held at Madrid from the 23rd to the 30th of April, and from many points of view was a great success. During the first day or two there appeared to be a great lack of organization, but if one were to imagine a similar gathering in Montreal of seven thousand doctors, of whom three thousand, five hundred did not speak English, one might make some allowance for the confusion which would almost be inevitable, and was certainly in evidence at Madrid. The opening meeting in the Royal Theatre where the King and the Court occupied the royal boxes, where after an address of welcome by the President of the Congress, the chief delegate from the principal countries replied in his own language, was a brilliant affair and one not soon to be forgotten. Many of these great men could not be heard owing to lack of training in speaking in large assemblies, but the official delegate from Korea was a notable exception to this rule for he could be heard distinctly in every part of the great amphitheatre, although of course no one understood a word he said.

The next morning all of the seventeen sections were hard at work in the beautiful building of the National library and museum which had however the drawback of many of the rooms being *en suite*, so that it was necessary to pass through a great many of them in which meetings were going on in order to reach the last ones. While this meeting place had the advantage of being very central it would perhaps have been better if the sections had met in the class rooms of the university as was done in Montreal when the sections of the British Medical Association met in the class rooms of McGill Medical College. It would be impossible to even mention here the titles of all the papers which were presented; many of them were of a high order of merit, but owing to the extreme courtesy or politeness of the Chairmen there were prac-

tically no limits to the length of the papers or to the time allowed for their discussion. Here again it would be well for these kind-hearted gentlemen to take a lesson from the management of congresses in America, where the greatest man present is compelled as a rule to sit down when his time is up and where those who discuss the papers are only allowed to speak once and even then for five or ten minutes only. What is meant as a kindness to the few who wish to take more than their time inflicts great hardship on the many who would be satisfied with their share, but are crowded out by the long-winded or selfish speakers. The Spanish presidents and secretaries of sections did not allow any of the foreigners to be crowded out if it was possible to get their papers in.

While an immense amount of work was done in the sections the social side of the meeting was not neglected. The reception in the royal palace given by the King and his mother and sister, was a function which no one who was present will ever forget. During three hours these royal persons acted as perfect hosts, walking freely among their guests and conversing with them quite fluently in one of at least five different languages. They were enabled to do this more readily by the plan which was adopted of assembling all the delegates of one language in one of the vast drawing rooms leading from the throne room. The dignified yet most kindly demeanor of the young King and his royal mother towards their guests made a very pleasant impression upon all who were present. The reception at the foreign office was another magnificent affair as many hundreds of the diplomatic corps as well as the Army and Navy Surgeons from different countries were in their uniforms, many of which were almost covered with distinguished service orders. At neither of these receptions were any ladies present while for the reception given by the Mayor of Madrid, at which there were ladies, there were only five hundred tickets issued to the members of the congress. The bull fight which took place on Sunday after church was attended by ten thousand people. Eleven horses were killed before the three bulls were slaughtered. The opinion was generally expressed that the bull fight was more cruel than fox hunting. There was much private hospitality in the form of dinners and garden parties, one of the most pleasing of the latter being one given by a wealthy gentleman who had a stage erected, on which some of the best artists in Madrid gave presentations of native songs and dances. The influence of the Paris professors obtained the XIV Congress for Madrid and the same influence probably gained the decision that the next one would be held at Lisbon.

## MONTREAL GENERAL HOSPITAL.

The following abstract is from the quarterly report of the Montreal General Hospital: Indoor Department:—Patients admitted, 735; patients discharged, 688; patients treated to conclusion, 752; patients died, 64; patients died within three days, 19; total number of hospital days, 16,991; average number of days per patient, 18.48; average number of patients per day, 188.8; ambulance trips, 278.

Outdoor Department:—Medicine, new cases, 519, old cases, 1,799, total, 2,318; surgery, new cases, 603, old cases, 2,493, total 3096; eye and ear, new cases, 361, old cases, 1,284, total, 1645; gynaecology, new cases, 47, old cases, 215, total, 262; nose and throat, new cases, 185, old cases, 581, total, 766; dermatology, new cases, 185, old cases, 282, total, 350; dental, 18; emergency, 505; total for quarter 8,960, an increase of 1,540 over corresponding quarter of 1902.

## ROYAL VICTORIA HOSPITAL.

The following medical cases were admitted to the Medical Department of the Royal Victoria Hospital last month:—Typhoid, 12; pulmonary tuberculosis, 6; bronchitis, 6; pleurisy with effusion, 4; neurasthenia, 3; mitral stenosis, 3; myocarditis, 2; rheumatism, 8; sciatica, 2; chorea, 1; tetany, 2; epilepsy, 1; hysteria, 1; nephritis, 3; enlarged prostate, 1; pneumonia, 4; Addison's disease, 1; tabes dorsalis, 2; hyperacidity, 1; gastric subacidity, 1; gastric ulcer, 1; hypertrophic cirrhosis of the liver, 1; febricula, 2; lead poisoning, 1; pyæmia, 1; acute alcoholism, 1; cerebro-spinal meningitis, 1; hemiplegia, 1; myelitis, 1; mitral insufficiency, 1.

## WESTERN HOSPITAL.

During the quarter ending March 31st, 155 patients were admitted, of which 51 were medical, 80 surgical, and 24 gynaecological. The number of deaths was 11, of which 6 took place within three days of admission. The death rate for the quarter has been 7.9 per cent., or if those dying within three days after admission be deducted, 3.22 per cent. There have been 61 patients operated upon, of which 48 were surgical and 13 gynaecological. Total days of hospital treatment aggregated 2,292. The average number of days in hospital per patient was 14.78. In the outdoor department the total number of consultations for the quarter was 2,002; medical, 746; surgical, 297; gynaecological, 288; nose and throat, 298; eye and ear, 184; skin, 85; genito-urinary, 104.

### MONTREAL FOUNDLING AND BABY HOSPITAL.

The annual meeting of the Montreal Foundling and Baby Hospital was held May 27th. The report showed the mortality to have been five per cent. less than the year before and ten per cent. less than the year previous to that. This good result was attributed to the method of whey feeding employed. The admissions during the year were 134, which with 31 in the wards at the beginning of the year made a total of 165. The deaths were 89, giving a mortality of 54 per cent. which is well down to the standard of the best institutions. More than half the admissions were from private maternities.

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Dr. W. R. Campbell of Toronto has formed a partnership with Dr. Drinnan of Ponoka and will practice in that place.

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The Annual Convocation of McGill University for conferring degrees in the Faculty of Medicine will take place 12th June.

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Dr. Keown of Moosomin was operated on for appendicitis in Winnipeg by Dr. W. S. England on the 6th May and is making a good recovery.

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An addition is to be made to the Woodstock hospital, which will double the present accommodation and include a maternity ward. At a meeting of the board held 12th May, the contracts were let and the work will be commenced without delay.

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At the meeting of the city hospital board, Vancouver, 14th May, the secretary stated that the Government had decided to make a grant of \$20,000 towards the building fund of the new hospital. During the month of April 84 patients were admitted to the hospital, 71 discharged cured, 4 died, and 55 remained in the hospital.

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The Montreal Dispensary held the fifty-third annual meeting 14th May, at 145 St. Antoine Street. Satisfactory reports for the year were read and the following officers elected: President, I. H. Stearns; vice-president, Charles S. J. Phillips; second vice-president, Dr. J. M. Jack; honorary treasurer, George Esplin; honorary secretary, Dr. H. B. Carmichael; committee of management—the officers elect and Messrs. Samuel Finley, E. E. Rothwell, David Watson, Albert D. Nelson, Dr. H. D. Hamilton, Dr. Geo. A. Brown and Dr. A. T. Bazin.

The following are the results of the final M.D.C.M. examinations at Trinity University, announced 26th May:—

Gold medal, B. F. O'Reilly; silver medal, E. C. Beer; certificates of honour, H. E. Eaglesham, B. F. Consler, W. T. Gemmell, M. J. Perkins, A. G. Thompson.

Class I.—G. E. Chapman, C. H. Hair, equal; G. P. Campbell, A. W. Canfield, B. H. Hamilton, J. M. Baldwin, T. J. C. Tindle; R. A. M. Cook and C. C. Cragg, equal.

Class II.—J. H. Kidd, J. P. Cade, R. S. Conboy, R. E. Loucks, E. V. Smith, W. C. Arnold, F. R. Fursey, A. H. Campbell, W. W. Milburn, W. E. Mason, C. E. Duggan, D. Munro, A. C. C. Johnston, L. S. Pritchard, R. A. Fraser, C. B. Stone, J. A. Anderson, W. A. Lawrence, H. W. Coulter, G. F. R. Richardson, E. C. Dixon, F. W. Hill, B. D. Munro A. H. Cook, F. J. Dodd.

Class III.—Miss E. F. Lucas, C. R. Learn, J. W. Rowntree, H. F. W. Vernon, P. W. Tuller, E. T. Curran, A. W. Hicks, Miss O. M. Rea, W. E. Ekins, Miss M. G. Bryson, Miss L. M. Patterson.

In the primary class the following awards were made:—First silver medal, R. R. B. Fitzgerald; second silver medal, T. C. Brereton; certificates of honour, G. H. Carlyle, R. R. Smale, M. J. C. Naftel.

The recent medical act of Nova Scotia requires that all medical graduates shall pass the provincial examination before they can be admitted to the practice of medicine in that province.

These examinations are conducted by examiners appointed by the Provincial Medical Board and successful candidates, in addition to their college degree, receive another diploma admitting them as licentiates of the Provincial Medical Board of Nova Scotia.

The first examinations under the new act began Wednesday, April 29, and were concluded on Thursday, May 7. Most of the candidates were from among the recent graduates of Dalhousie, who intend practicing in Nova Scotia; those who propose settling elsewhere take the corresponding examination in their own province.

According to the results announced the following have been admitted as licentiates of the Nova Scotia Medical Board: Minna May Austen, Theodore Rupert Ford, Harvey David Hawboldt, William Alfred Lawson, Frederick Lessel, Kenneth Angus McCuish, John Angus MacIver, Kenneth Alexander MacKenzie, Albert Churchill McLeod, John Charles Morrison, Daniel Murray, Edmund Bambrick Norwood, Jacob Leslie Potter, Grace Elizabeth Bernard Rice, George Watson Whitman, Frank Valentine Woodbury.



# Retrospect of Current Literature.

## MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY AND H. A. LAFLEUR.

### **The Symptoms and Diagnosis of Stone in the Kidney.**

R. CLEMENT LUCAS. "The Symptoms of and Diagnosis of Stone in the Kidney." *The Lancet*, April 25, 1903.

This article from the Hunterian Lecture of the writer expresses views based on his personal experience.

Pain, as a symptom of renal calculus, may be altogether absent. Numerous cases are on record where large calculi have been found imbedded in the kidneys without causing symptoms. This variability of the symptom of pain depends on two factors (1) the position of the stone, and (2) its mobility or fixation. The kidney itself is not a very sensitive organ; it may be handled or even punctured without much discomfort. The pelvis, however, especially that portion immediately around the outlet, is extremely sensitive. A movable stone impinging on this point causes excruciating agony. On the other hand large branched stones fixed in the pelvis merely cause aching pain, quite distinct from renal colic.

The character of the pain varies greatly in different cases. Most commonly it is an aching, gnawing pain extending from the loin through to the front on a lower level. The correct explanation of this pain is probably that it is due to reflection along the last dorsal nerve, and this view is borne out by the fact that it is almost constantly relieved by exploration and division of this nerve.

Attacks of renal colic, which are seen in their most acute form during the passage of a small stone through the ureter, frequently occur as a result of stone lodged in the kidney. Such attacks are most likely to occur from a movable stone dropping like a ball-valve over the outlet of the pelvis. The sudden blocking of the urinary secretion tends to produce a uræmic condition with vomiting.

Colic may also result, in a modified form, when a stone lies loose in a dilated cavity. Hydro-nephrotic cavities containing a loose stone, which is driven into the narrow neck of the calyx, may also induce colic, as may free hæmorrhage with the formation of blood-clot within the pelvis of the kidney.

Pain, in addition to being reflected along the usual nerve tracts, may be felt in the thigh, knee, hip, ankle and foot, along the branches of

the anterior crural and sciatic nerves. It may be felt almost exclusively in the testes, and the renal origin may be completely overshadowed.

Increased pain at night is sometimes complained of, and is regarded by the writer as due to the pressure of a large stone on the lumbar nerves. Turning in bed tends to drag on the nerves about its pedicle, and many patients are unable to sleep on, or even turn to the opposite side without pain.

Tenderness over the kidney is a sign of value, especially when the stone is large and angular. During a deep inspiration the kidney can sometimes be caught between the hands, causing a sudden lancinating pain. Should blood appear in the urine after such manipulation, it still further confirms the diagnosis.

Increase of pain by jolting is a valuable sign, and an accession of pain after riding in a light cart or even a rough railroad, should awaken suspicion.

The stamping test is sometimes attended by remarkable results. The patient supports himself on a firm object with one hand, then flexing the thigh fully and bringing the heel down firmly on the floor. A sudden acute pain is commonly caused by this manoeuvre when a calculus is present. In one case it induced a violent attack of renal colic.

Hæmaturia may occasionally occur without any serious pathological lesion. "Some persons bleed from the nose, others from the kidney," was a favorite dictum of the late Sir William Gull.

Hæmaturia may be entirely absent throughout the course of the disease, and curiously enough often with large angular stones. On the other hand hæmaturia may be profuse and yet quite unassociated with pain. Hæmaturia is almost invariably excited by severe exercise, or by jolting, etc. It is very characteristic for hæmaturia to follow renal colic, but colic may occur without hæmaturia. The bleeding rapidly subsides with rest in bed.

Hæmaturia has been so severe as to cause death in those rare cases where a large vessel has been opened by ulceration. Usually coagulation takes place in the ureter, and backward pressure checks the fatal accident.

Frequency of micturition, occurring independent of any abnormal urinary deposit, is suggestive of calculus in the upper part of the ureter or the pelvis, rather than of a stone imbedded in the secreting substance of the kidney. Retraction of the testis is much more obvious in children than adults. After puberty when the testis is heavier, and

with increasing feebleness of the cremaster in advancing years, this sign is less obvious.

A history of the passage of small calculi is the most important fact to be elicited in the history of the patient. With persisting pain and hæmaturia the presumption of stone is an almost certain deduction.

Grating due to multiple calculi may be felt in certain rare cases.

Total suppression of urine, with intense pain shooting through to the front and down to the groin, constantly futile attempts to pass urine, vomiting, headache, giddiness, and restlessness, support the probability of these symptoms being caused by a calculus obstructing the outlet of the only remaining kidney. Prompt operation in such instances may save life, and a case is quoted in which a stone was removed on the fifth day of total suppression with a successful urination.

The shadow photograph by the X-rays has added much precision to the diagnosis, but when negative cannot be implicitly relied upon. Shenton in the Guy's Hospital Reports of last year states that in 28 cases in which the X-rays showed calculi they were found by the surgeon; in 8 cases in which the surgeon found calculi the X-rays failed to show them, and there were 2 cases in which the X-rays had discovered calculi which the surgeon failed to find by operation.

The lecture is concluded by a reference to various conditions liable to be mistaken for renal calculus.

F. G. F.

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## SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

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### Surgical Society of Paris.

*Myeloplax tumors*:—Are myeloplax tumors more likely to be inflammatory neoplasms than real ones? Delbet believes that actual myeloplax tumors, real myelomas, in which giant cells are the principal elements are benign growths, for which purely local removal is justified. Observations of Chas. Monod, Poncet and his own are in favour of this opinion. The case of Monod treats of a patient, aged 41 years, in whom the lesion was situated in the upper extremity of the tibia; a large groove was made after perforation of the bony shell; the cavity produced in this way did not communicate either with the articulation or with the diaphysis; the cure was complete but with ankylosis of the knee. The radiograph taken a year and a half after the operation shows that the epiphyseal cavity is completely filled. The histological examination of the tumor showed that it was a typical giant-cell sarcoma. Delbet's observation treats of a child of 8 years,

in whom the upper part of the humerus showed a voluminous tumor. The radiograph indicated that the head of the humerus was intact, and the anatomical neck deformed by a large tumor. When brought before the Society, the majority of the members, including Poncet, were in favour of a sarcoma, and advised immediate intervention. Kirrnisson, Jalaguier and Broca thought it was an exuberant callus. The child was not operated upon; shortly afterward a typical fracture presented itself in the lower part of the tumor, and this fracture healed quickly with complete rest. The tumor has since largely diminished in size. Poncet's observation treats of a tumor located in the lower extremity of the radius. It was operated upon with success, without a relapse, and the microscopic examination enabled one to state that it was a myeloplax tumor. Berger, Broca, Kirrnisson and Monod confirm Delbet's point of view, that myeloplax tumors are most likely inflammatory neoplasms, in which local intervention is justifiable.

2. *External œsophagotomy performed on a child.* (Communication by P. Sebileau).

External œsophagotomy is an operation but seldom performed on a child. Sebileau gives us 4 cases. They all concern the accidental deglutition of a coin, which has always been found to stick on a level with the first stricture of the œsophagus, that is to say, at the beginning of its thoracic part, as is generally reported in published cases. In fact the utmost enlargement that the œsophagus of a child can reach transversely, cannot exceed 25 millimeters.

The coins directed by deglutition always appear with the flat surface antero-posteriorly. The result is that the lesions of the œsophagus are located on each side. Sebileau does not believe in the inflammation or the ulceration of the mucous membrane, with subsequent development of an abscess which may open into the mediastinum.

In one of his cases, he was able to determine the existence of very strong adhesions between the œsophagus and the neighbouring structures, particularly the carotid, which he was unable to completely isolate. Near these adhesions the œsophageal wall had become very thin, being even reduced to the mucous membrane only and was so intimately joined to the surrounding cellular tissue, that sometimes the œsophagus was very difficult to distinguish during the course of the operation. This process of inflammatory reaction without suppuration of the periesophageal cellular tissue, which has for final result, the adhesion, then the fusion of the œsophagus with the neighbouring tissues, particularly the carotid, demonstrates the advisability and success of the external œsophagotomy, even when performed at

a late period, and absolutely contraindicates the use of von Græfe's coin-catcher for all cases that are not recent. These lesions of peri-œsophagitis are also interesting inasmuch as they demand a guarded prognosis.

In fact the recurrent nerve can be found in the very middle of the inflammatory tissue; more or less severe disturbance in the working of the vocal cords shows that it is attacked by neuritis. The functional disturbances seen in children are particularly slight; one does not get the spasms which are observed in an adult when the œsophagus has been irritated. Sebileau points out the uselessness of catheterization of the œsophagus—he reminds us that Segond was obliged to perform external œsophagotomy to extract at the same time the "foreign body" and von Græfe's "coin-catcher," which had become impacted with the foreign body.

On the other hand Sebileau urges the importance of radiography, done immediately before the operation, inasmuch as the foreign body may move further down during the hours preceding the operation.

External œsophagotomy in a child is not a difficult operation, although a delicate one, because of the narrowness of the wound. The one serious difficulty arises from the periœsophgitis. Sebileau advises to begin the incision as low down as possible, descending as far as the interlaticular notch of the sternum, following the anterior edge the cleido-mastoid muscle.

The real danger of the operation is the recurrent nerve. On the cadaver it is almost impossible to wound this nerve because it remains stuck to the trachea; when there is periœsophgitis it does not allow itself to be drawn aside with the trachea, and cannot be found when hidden in the cellular tissue. In spite of the lesions of its wall, it was always possible to suture the œsophagus.

F. M.

### **Intra-Abdominal Torsion of the Great Omentum.**

E. VIGNARD AND GIRAudeau. "Intra-Abdominal Torsion of the Great Omentum." *Archives Provinciales de Chirurgie*, Paris.

The authors report fully two cases, one of their own, the other belonging to the service of Prof. Malherbe; then proceed to give a résumé of all the reported cases, 18 in number besides their own, or 20 in all.

The article is well worked out, and deserves reading in the original. We can mention here only the main points. Vignard's case concerns a man, aged 31, who was seized suddenly, without apparent cause, with colicky pains in the right abdomen. There was slight fever, no vomiting; and no bowel obstruction.

A dull mass appeared in the right iliac fossa, and on the 6th day the right scrotal sac became the seat of a painful swelling. The pain became subacute, finally chronic; and a month after the onset he came under Vignard's care. The latter found that the patient had suffered from slight colicky attacks, four or five times a year, since the age of 9; that the right testicle had not descended until the age of 7 or 8; and that he had worn since "early youth" a right hernia truss.

On examination, Vignard found a hard, painful, rather superficial intra-abdominal mass, which could be followed from the costal margin down to the right scrotum. Its upper limits were well-marked, and situated about the superior and external angle of the rectus; its greatest breadth, about the middle, corresponded to that of one's hand, and was half outside, half inside the external border of the rectus. Inferiorly, the mass became smaller, strand-like; disappeared under Poupart's ligament, and reappeared in the inguinal canal, and was finally confounded with the testicle. Its surface was very irregular and lumpy. The diagnosis was that of appendicular trouble with especial involvement of the omentum in the inflammatory mass, and extension of the inflammation to a pre-existing inguinal epiplocele.

Operation revealed a considerable amount of black blood free in the peritoneal cavity. The omentum formed the above-described mass. It was adherent to the abdominal parietes, and infiltrated with blackish blood. The lower end was found to be adherent in the hernial sac. Numerous adhesions to the coils of the small intestine were liberated with difficulty, and finally the whole mass was ligated at the pedicle close to the transverse colon, and removed. The appendix showed no signs of disease save the presence of three small concretions. The omental mass showed at its pedicle two or three tightly drawn spiral turns. Recovery uneventful.

In the case of Malherbe there was a somewhat similar history, and a similarly mistaken diagnosis of appendicitis.

Vignard then proceeds to review all the cases recorded up to the present:—

*Historical.*—The first case was that of Oberst in 1882; the second that of Demons in 1893; and the majority of the others belong to the last three years.

*Ætiology.*—"The constant coexistence of a hernia seems to dominate the ætiology of omental torsion." It is noted in every case; and had been always present for a considerable time, but usually reducible.

*Antecedents.*—In general, there could be found no history of any disease which could have had an influence on the omentum. In most

cases there was no immediate apparent cause. In a few a sudden violent effort seems to have induced the acute trouble.

*Pathology.*—A hernial sac was always found, and nearly always in it was the lower end of the twisted omentum bound by adhesions. The intestine was never found in the sac. The omental hernia was never found strangulated. The omentum might be twisted at one point; at two different points; or in a complex manner. The omental tissue usually showed chronic or subacute inflammation, with bloody infiltration. In only one case was there a diffuse fibrino-purulent peritonitis. In a majority of the cases, the condition of the appendix was not mentioned.

*Symptoms.*—Onset usually brusque, violent; only exceptionally was it insidious. The pain, always a prominent symptom, was usually considerable and continuous. Vomiting present in one-third of the cases. The blockage of gas and fæces was complete in several of the cases; partial in others. Temperature was commonly normal; pulse somewhat accelerated.

*Objective Signs.*—Abdomen usually distended. The hernia in most cases showed evidences of inflammation; painful, hard, and irreducible. In half the cases palpation of the abdomen gave no decided evidences; in the rest a painful mass could be made out; and in a few this could be traced to the hernial sac.

*Diagnosis.*—This was not once made in all the 20 cases. Practically all the symptoms are common to many abdominal conditions. Appendicitis, intestinal obstruction, strangulated hernia—such were the usual mistakes. Only one sign, when it happens to be present, seems to have real value, viz.: the omental cord or strand traceable from the hernial sac into the abdomen. This, with a low temperature, should assist in excluding appendicitis. The only treatment is immediate operation.

### **The Light Treatment of Lupus and other Diseases of the Skin.**

MALCOLM MORRIS AND S. E. DORE. "The Light Treatment in Lupus and Other Diseases of the Skin."—*Practitioner*, April, 1903.

Morris assumes that the treatment of lupus vulgaris and of certain other skin diseases by the Finsen light has passed beyond the experimental stage; and the results quoted, not only by the Copenhagen Institute, but by so many others all over the world, bear out the assumption.

Finsen's latest statistics are as follows:—From Nov. 1895, to Jan. 1, 1902, the total number of cases of lupus vulgaris treated was 804. Of these 67 cases must be ruled out on account of various interruptions in the treatment. Of the 737 remaining cases, he claims 94 per cent. of

successes; and only 6 per cent. of failures. It must be added that by "successes" is meant really "favourable results," of which, so far as one can see, only 60 to 70 per cent. were actual cures, the remainder being favourably influenced. French results are not quite so good. Malcolm Morris maintains a sound *ex parte* attitude in judging his own work. "Our results," he says, "though not so brilliant as those claimed by Finsen, have been satisfactory in a considerable number of the cases. It is impossible, however, by mere statistics to give an adequate impression of the good effects of the treatment. Many of our cases have been of so severe a type that even the arrest of the progress of the disease has been looked upon as a favourable result. In most of the cases in which we can say that a complete cure has been effected, the affected area has been of slight extent. In none of the extensive cases under our care can we yet claim a complete cure."

Of 65 cases of lupus vulgaris, 11 have remained without relapse for from six months to two years. In 15 cases slight remnants of the disease remain, or slight relapses have occurred from time to time, and the patients are still kept under observation. Eight were discharged with no visible trace of the disease, except in two, on the mucous membrane of the nose; they have not been seen since. Fifteen are still under treatment. Of 14 cases in whom the treatment was not continued, all who remained sufficiently long were improved. In two cases in which ulceration was a marked feature, Finsen's light was useless, and in both the ulcers healed rapidly under the application of the X-rays. In all the cases but one, disease of the mucous membranes, when present, was treated by means of X-rays; and in all, except one in which there was no improvement, with good results. As regards lupus erythematosus, Finsen in 31 cases obtained 11 recoveries, 10 being still under treatment. Leredde and Pautner treated 23 cases, 11 of which were entirely cured and 3 improved; in 3 complete failure. Morris treated 11 cases, with great improvement in 7, but with complete cure in none. Of 29 cases of *alopecia areata*, Finsen had 22 cases of recovery. In 2 cases of Morris's there was failure. In 27 cases of rodent ulcer, Morris had favourable results in 12; but in most of them Finsen light and X-rays were combined. Sufficient time had not elapsed to make it possible to say if recovery was likely to last.

The literature of the subject, Morris remarks, is fast becoming voluminous, but the facts reported require to be carefully sifted, as the observations of workers do not altogether agree, either as to the method of applying the light and the X-rays, or as to the indications for their therapeutic employment."



Morris goes on to compare the various makes of lamps in use in the application of light; and concludes that the original Finsen lamp gives the best results on account of the greater intensity and penetrating power of the concentrated light.

Conditions unfavourable for the treatment he summarizes as follows:—

1. Factors which hinder penetration of the light; *e.g.*, pigmentation, dark complexion, and thick skin; great depth and infiltration of the disease; scarring from previous treatment; great vascularity of the parts.

2. Great extent of the disease.

3. Inaccessible position; *e.g.*, mucous membrane of the nose, etc.

An important point is that which concerns the permanence of results. In this respect the treatment is "at first sight, somewhat disappointing. Relapses frequently occur, and it is necessary to keep the patients under observation for two, three or more years, so that recurrent nodules may be treated as soon as they appear. If this is not done, the disease may fall back to its original state. It is only in slight cases that we can so far claim to have had permanent results, taking two years without recurrence as the standard of permanence. It must, however, be borne in mind that in many of these cases almost every known form of treatment had been tried, and no other method has given such satisfactory results as the light treatment."

*E. W. A.*

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## Society Proceedings.

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MONTREAL MEDICO-CHIRURGICAL SOCIETY.

*May, 1, 1903.*

H. S. BIRKETT, M.D., PRESIDENT, IN THE CHAIR.

The meeting adjourned.

*May, 15, 1903.*

J. A. MACDONALD, M.D., VICE-PRESIDENT, IN THE CHAIR.

### The Treatment of Pott's Fracture.

DR. ARCHIBALD presented a case illustrating the treatment of Potts fracture, and gave the following account: This case was admitted to the Royal Victoria Hospital February 25th; at present she walks with ease; and with the exception of a little œdema, there is no deformity. The skiagraphs show the extent of the fracture. The patient fell from a carriage, and when admitted there was slight abduction and eversion of the foot with considerable swelling. The skiagraphs show

the fracture of the fibula with the internal malleolus broken off, and in addition a large wedge-shaped fracture on the fibular side of the tibia. We have here three breaks with some widening of the ankle joint. The disadvantage of the ordinary plaster of Paris treatment is that it does not allow of inspection of the ankle, nor of passive movements nor massage, which now-a-days are looked upon as essential to the treatment of fractures of most joints. I therefore decided to try the treatment advocated by Bardenheuer of Cologne.

This method as used by Bardenheuer in cases of Pott's fracture, and, in fact, of all fractures about the ankle is as follows: A long strip of adhesive plaster is applied to the leg on either side from above the knee passing over the malleoli, and forming a stirrup below the foot. The slack of this stirrup is gathered in very tightly over the sole by a clamp or by thread, the malleoli and the outer edge of the sole being protected by compresses; and to the plaster is attached a weight of from 12 to 16 pounds. The pulley at the foot of the bed is placed towards the median line, so that the force applied brings the foot into a moderate varus position. A second adhesive strap applied round the leg immediately above the inner malleolus, to which is attached a weight of from 4 to 6 pounds, running outwards over the side of the bed, assists in keeping up the varus position. Finally a third strip of adhesive plaster is applied around the fore part of the foot, and the ends brought up and attached to the leg near the knee; this keeps the foot at a right angle, and may also still further accentuate the varus position. The leg is placed in a posterior gutter splint, and the whole may be kept solid upon the bed by lateral sand-bags.

The advantages claimed, are that the stirrup with weight exercises a constant lateral compression on the malleoli, thus keeping fragments better in apposition, reducing rapidly the blood effusion in the joint and, therefore, avoiding joint-stiffness. This lateral compression also prevents all pronation and supination movements which are apt to prejudice healing. On the other hand, the flexion movements, necessary to prevent joint-stiffness, can be carried out early, and the leg is constantly open to inspection. The tendency to flat-foot is well obviated by the considerable degree of varus position obtained as above indicated. Bardenheuer, moreover, does not allow the patient to put his weight on the foot before the end of the 5th week.

The method appeals to one especially by its principle of lateral compression, and by its allowing of early light massage and passive movements in flexion and extension. Bardenheuer's results are the best proof of the worth of his claims. Of 106 malleolar fractures, he

obtained 99 per cent of complete cures, (as judged by the exacting conditions of German trade accident insurance societies) in an average duration of 86 days.

The references are: Bardenheuer. Leitfaden der Behandlung v. Frakturen u. Luxationen, 1890. Loew. Ueber Heilungsergebnisse von Unterschenkelbrüche. Deut. Zeit. f. Chir. Bd 44.

I report this case as I do not know of this method having been tried before in Montreal. The after-treatment of mechano-therapy, as exacted by Bardenheuer for the best results, could not unfortunately be carried out in this case, as she left the clinic between the 3rd and 4th week, the foot being then put in plaster for safety. Nevertheless, the result as observed 3 weeks later, was already decidedly good both as to position and function. Bardenheuer's statistics, I think, may be considered reliable on account of the accuracy demanded by the State, which as you know controls the very exact system of accident insurance.

Skiagraphs taken 10 weeks after the fracture, show nearly the same condition as the fresh ones save for a somewhat better position of the fragments, showing that the callus at that period is not dense enough to throw the ordinary shadow of bone.

DR. BROWN asked if there was any possibility of movement, during sleep, which would displace the foot and disturb the bones, or ligaments.

DR. ARCHIBALD replied that at first sight it would seem possible that movements might occur, but in view of the lateral compression the only movements possible were flexion and extension, which would be carried out in any case, so it was fairly safe. Of course any violence, such as falling out of bed, might be disastrous.

DR. MACKENZIE FORBES showed a case of tendon grafting for a deformity, resulting from anterior poliomyelitis, which he had operated on some two years ago. When shown to the society after the two operations, there was decided improvement, but the patient being lost sight of and the massage, passive movements and electricity neglected, the improvement, which looked so promising then, had not materialized. Dr. Mackenzie proposed to renew the massage, passive movements and electricity, and had great hopes of at least a partially useful limb.