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THE
MONTREAL MEDICAL JOURNAL.

A Monthly Record of Medical and Surgical Science.

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Original Communications.

ABDOMINAL NEPHRECTOMY FOR HYDRO-NEPHROSIS, WITH A REPORT OF TWO OPERATIONS.

BY J. WISHART, M.D., F.R.C.S. EDIN., M.R.C.S. ENG.
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There can be no doubt that the past years have been progressive ones in abdominal surgery ; nevertheless, most practitioners who have attempted any operating in this region will have felt, on many occasions, not only lack of precision in diagnosis, but grave difficulties arising during the operative procedures that become necessary in most of these cases. In studying the operative surgery of the kidney, it is interesting to observe that, while 15 or 20 years ago a larger proportion of the operations were performed after an error in diagnosis, during the last few years a correct diagnosis before operation has been the rule, although many exceptions are to be noted. The difficulty in diagnosis, it would appear, is increased in cases of great enlargement of the organ, where the patient, when seen for the first time, presents a tumor filling the whole abdomen. In the two cases of advanced hydro-nephrosis which I am now about to report, the making of a correct diagnosis appears to me to be singularly difficult. This is owing chiefly to the size of the tumor and the great similarity in each to ovarian cyst. In both cases I have to admit an error in diagnosis, and in both I commenced operation on this wrong opinion ; whether a second error was committed in treatment I leave to the judgment of the Associa-

tion, as there is diversity of opinion in the profession as to the operation to be preferred in hydro-nephrosis.

Case I.—Mrs. P., aged 31, married six years and the mother of two children ; residing in Thamesford, Middlesex County, but a native of England. Parents living and healthy. No family history of ill-health or hereditary disease. Patient below the average in height and weight, and of pale complexion. She gives a history of fair health in childhood, but during the past fifteen years has suffered from pain in the right side, beneath the liver, and before coming to Canada she attended the out-patient department of St. Bartholomew's Hospital, but got no relief from treatment. About the first week of May, 1889, discovered an enlargement in the abdomen, which steadily increased in size. On the 18th of June, five weeks after this, she was admitted into St. Joseph's Hospital and presented a letter from her family physician, Dr. McWilliam, who had examined her and made the diagnosis of ovarian cyst. There was dulness in the median line, fluctuation, and resonance in the flanks. The measurement greatest below the umbilicus ; distance from umbilicus to iliac spines equal on the two sides. The tumor occupied all the abdomen from the pubes to the sternum, but the patient said she thought it was more to the right side at first ; no tumor could be felt in the pelvis. Examination of the heart, lungs and liver negative. Catamenia regular ; uterus normal in size and movable ; specific gravity of urine 1028, no albumen or sugar. The patient was carefully examined by Drs. Moore, Macarthur and Waugh, and the diagnosis of Dr. McWilliam confirmed. I wrote him saying the disease appeared to be ovarian, but the tumor seemed to me to be a little higher up than other cases I had operated upon. On June 20th chloroform was given, an incision made in the median line, and an enormous cyst of the right kidney discovered, which, fortunately, had no adhesions to surrounding parts. The incision was enlarged upwards, the intestines drawn toward the left side, the peritoneum divided over the tumor, and enucleation commenced. The ureter was tied and cut off. Much difficulty was experienced in securing the vessels and separating the upper end of the tumor from surrounding

parts. At this point in the operation the cyst burst and a considerable quantity of fluid escaped into the abdomen. This had a peculiar urinous odor, but was quite clear. The abdomen was sponged out with warm water, the edges of the peritoneum adjusted over the raw surface, and the wound stitched up in the usual manner with silk; no drainage tube was used, and the sublimate gauze dressing was secured with plaster and a binder of flannel. All went well for the first week, the sutures were removed on the eighth day, and the wound found united; the highest temperature recorded up to this time being $101\frac{1}{2}^{\circ}$. On the tenth day the temperature reached 103 , later $104\frac{1}{2}$, with occasional chills and delirium at night, hay odor of the breath, and for almost three weeks her life was in considerable danger. On the twenty-first day, fearing that an abscess had formed, I passed the aspirator needle beneath the 12th rib into the abdomen, but nothing came through; after this recovery was slow, but continuous, and the patient was able to leave the hospital on the 1st of September and attend to her duties.

Case II.—Mrs. T., aged 43, a widow, and the mother of seven children; residence, Goderich. Admitted to St. Joseph's Hospital July 11th, 1889, and gave the following history:—Always had good health and led an active life; never confined to bed except during her confinements; six months ago the abdomen commenced to enlarge, and this had continued to the time of admission; there never had been any pain, but the tumor now began to cause discomfort from its size. Two physicians in Goderich had made an examination, she informed me, and both had recommended operation. The abdomen showed a large, fluctuating tumor extending from the pubes to the ribs, dull in the median line, resonant in the flanks; measurement greatest below umbilicus. No tumor could be felt in the pelvis. Examination of the heart, lungs and liver negative. Uterus movable and natural in size. Catamenia regular. The tumor was much larger than in the case just related. The patient was well nourished and rather stout in figure. Drs. Woodruff, Waugh and McArthur were called in consultation, and as the last case of mistaken diagnosis was still in the hospital, a very careful

examination was made in order particularly to exclude hydro-nephrosis. The diagnosis of ovarian cyst was made and an operation recommended. Urine: specific gravity 1030; no albumen or sugar. On July 13th chloroform was given and the usual incision made in the median line. The opening revealed an enormous cyst of the left kidney, filling the whole abdomen. The peritoneum over this was incised and the tumor enucleated, the ureter cut off and tied, and the usual vessels secured with silk ligature. The operation, as in the last case, was difficult; and the wall of the cyst gave way, notwithstanding all my care, and the clear fluid escaped, much of it getting into the abdominal cavity. Warm water was passed into the abdomen, and the peritoneum adjusted over the bud of the tumor. There were no adhesions, but the bleeding was considerable and difficult to control. The patient had no bad symptoms, the silkworm gut sutures were removed on the eighth day, and the wound found healed. On the tenth day the temperature rose to 103° , pulse quickened, tongue became coated, and the abdomen swelled. These symptoms continued, the temperature varying somewhat, but always being above normal. This was followed by a discharge from the vagina, described by the sister on duty as composed of blood and pus, and very offensive. Injections of carbolized water were ordered twice a day, and nothing more was heard of this symptom. After this improvement took place slowly, and the patient had completely recovered by Sept. 10th, when she left the city for her home.

In the early stage, before an abdominal tumor is noticeable, hydro-nephrosis has to be diagnosed from renal abscess, perinephritic abscess, and extravasation of blood. When of small size, it may be mistaken for hydatid or serous cyst of the liver or spleen. Between hydro-nephrotic and pyo-nephrotic tumors the diagnosis is sometimes impossible. In some cases of the latter disease, however, pus appears in the urine. The treatment being similar in the last two, an error in diagnosis would not endanger the life of the patient, and no doubt in many cases suppuration is set up from accident, so that pyo-nephrosis is simply an advanced stage of hydro-nephrosis. The greatest

difficulty is experienced in excluding ovarian cyst, and my object in this paper is to show that this is well-nigh impossible—I mean in advanced cases where the cyst fills the whole abdominal cavity, as in the last two operations reported. In the first we have a history of pain in the side and an enlargement commencing, the patient tells us, in the lower part of the abdomen, a little to the right side. This enlarges in the short space of four or five weeks until it fills the abdomen. The measurement is greater below umbilicus, and the distance from this point to iliac spines is equal on the two sides; fluctuation, dullness on percussion in the median line, and resonance in the flanks; examination by the sound shows a healthy and movable uterus. In the first case, the smaller of the two, the tumor appeared to me to be just a little higher than the average ovarian cyst, but this was accounted for by an elongated pedicle. The absence of the cyst by vaginal examination is also accounted for in the same way. The rapidity of its growth, its size, and the absence of urinary symptoms, together with a healthy condition of the urine, point to ovarian tumor, and negative, one might almost say, hydro-nephrosis. I cannot think that the mistake in diagnosis is due to carelessness. The first case had been examined by Dr. McWilliam, who sent her to me, then by three other physicians of experience and reputation, and all came to the same conclusion. The plea of carelessness certainly cannot be argued in the second case. This one came into the hospital while the first was in bed, and not yet recovered from the operation. She was examined by two of the consultants called in the previous case. I mentioned to them to be sure and exclude hydro-nephrosis this time, and the examination was made with the probability of cyst in the kidney constantly in view and the diagnosis of ovarian tumor made. In this case, the history of an enlargement of six months' duration, giving rise at first to no symptoms, and later on only those of pressure; measurements alike from umbilicus to iliac spines, girth greater below umbilicus, fluctuation distinct, dullness in the median line, and resonance in the flanks; uterus movable, normal in size, and healthy; tumor filling the whole abdomen from pubes to ribs, and reach-

ing to the same position on both sides. I find from reading that there are at least fifteen cases on record in which hydro-nephrosis or simple renal cysts have been mistaken for ovarian tumors, and laparotomy performed on the erroneous diagnosis. Out of twelve cases in women collected by Morris, no less than seven were diagnosed as ovarian, and three of the seven submitted to abdominal section on the strength of this wrong opinion. From a study of the literature of this subject, and my experience of these two cases, I arrive at the conclusion that a diagnosis between advanced hydro-nephrosis and ovarian cyst is, to the the average practitioner, an impossibility. If I am correct in taking this view, it has an important bearing on the subject of treatment, for the question the surgeon has to answer is not what is the best treatment for hydro-nephrosis, but, the abdomen having been opened on the supposition that an ovarian tumor exists and a cyst of the kidney discovered, what are we to do next? Shall we close the abdomen and call it an exploratory incision, or can we not stitch up the wound after opening the cyst and drain from the loin? Can we perform nephrectomy by enucleating the tumor? I must confess that I am not partial to exploratory incisions for diagnostic purposes in private practice. My patients call them operations; the friends imagine a mistake has been made, and say "they do not want to be cut open to satisfy the curiosity of the doctor." I am of opinion, therefore, that something should be done to get rid of the disease. If the distension increases, death will result from the effects of pressure on neighboring organs, from rupture into the peritoneum or suppression of urine or uræmia. I might here revert to the means of different operators in the treatment of hydro-nephrosis in general.

"Puncture," writes Knowsley Thornton, "may also be tried as a means of treatment, though I believe there is no good evidence that cures are often effected by it. It should be performed by the aspirator, the needle being introduced far back in the loin to avoid risk of puncturing the colon, the peritoneum, or allowing extravasation of urine into the cavity of the latter. If relief follows, it may be repeated from time to time; but if

the fluid reaccumulates, some more radical operation must be undertaken. I have completely failed in two cases with incision and drainage, and I believe that nephrectomy is the proper treatment in all cases which do not improve after one or two tappings." Mr. Morris writes thus of drainage: "This practice has been very successful, and ought certainly to be adopted when aspiration fails and before nephrectomy is dreamt of. In a few cases a complete cure will be effected and the wound will quite close; in the majority, however, a fistula must be expected, and gives very little inconvenience to a person of ordinary intelligence and patience."

Barker writes "that free drainage for hydro-nephrosis is not much more successful than aspiration, and not devoid of risk. Of course a larger sac will be in a better position to contract if freely and continuously drained than if occasionally emptied, but the time consumed in the process of drainage, the necessity often lasting for months, for constantly changing the wet dressings; again, there is always the risk of suppuration in the sac, with subsequent septic infection." Mr. Barker, therefore, favors early nephrectomy. Jacobson recommends that in healthy patients nephrectomy should be had resource to after two months trial of drainage, providing the other kidney be healthy.

Spencer Wells, in his work on abdominal tumors, records the case of a woman, aged 43, who was operated upon at the Samaritan Hospital for supposed ovarian tumor and an enormous renal cyst found. This was tapped, but no attempt at removal was made. The wound was closed and the patient died thirty hours after the operation.

The authors quoted are evidently discussing the treatment of hydro-nephrosis in the early stages, when a diagnosis is possible, when we are able to say not only that a cyst of the kidney exists, but likewise the side of the body it is on. In the class of cases under consideration we approach the subject from a very different standpoint. We are expecting to find an ovarian tumor, and an incision has been made in the median line at least four inches long, preparation has been made for an operation, and the patient has gone under chloroform, with the understanding, no doubt, that she will soon be rid of her disease.

Under these circumstances two operations might suggest themselves to the operator,—“nephrectomy” by somewhat enlarging the incision and at the same time an examination of the other kidney to ensure its soundness, or “drainage” by incision in the loin. It might be well for the operator to consider the age and general constitution of the patient in weighing the merits of the operations and deciding which to perform. The immediate danger of nephrectomy is much greater than after ovariectomy, and is certainly much more to be dreaded than tapping from the loin and stitching up the abdominal wound. In one case, however, the disease is removed, the patient rid of the useless organ, and recovery complete. In the other, a cyst is being drained which is larger than the patient’s head, with little prospect of a complete cure; at least there remains a fistulous opening, the patient requires to wear a urinal, there is always the fear of suppuration being set up and septic infection following, and the danger of lardaceous disease from the former is not to be lost sight of. In either case we must constantly bear in mind the fact that the patient has only one kidney, which renders any operation more dangerous to life.

On looking up the literature of hydro-nephrosis, I find that about one-third of the cases are congenital. The affection is due to obstruction somewhere between the kidney and meatus urinarius. It is most commonly situated in the ureter. Among the cases mentioned are twists or contractions of the ureter, impacted calculus, stricture of the urethra, enlarged prostate, tumors of the ovary, bladder or uterus. Of 32 cases recorded by Roberts, the cause was found to be impacted calculus in the ureter in 11. From the records of post-mortems in the Middlesex Hospital, it appears that in every eighteenth case there was sufficient hydro-nephrosis in one or both kidneys to be mentioned in the report. Although the disease is quite common, the proportion of cases in which the enlargement of the organ is sufficient to form an abdominal tumor is very small. The fluid is usually clear and almost odorless, but there are many exceptions to this rule. The disease is twice as frequent in females as males, occurs at any period of life, and affects each kidney

about equally, but may occur in both. The quantity of fluid is sometimes enormous. One case is reported where the woman measured six feet four inches around the abdomen, and the cyst contained thirty gallons. The enlargement may lessen in size or intermit from escape of fluid into the bladder. Morris says: "Up to the present time there have been 27 nephrectomies for hydro-nephrosis, of which 16 were abdominal and 10 lumbar. Of the 16 abdominal cases 7 recovered, and of the lumbar the same number. In one the character of the operation is not stated. Four of the fatal cases were diagnosed ovarian, and three of the successful abdominal cases were also diagnosed ovarian or broad ligament cysts." It would appear, therefore, from reading this author, that up to the present time abdominal nephrectomy has been more fatal than lumbar. We must recollect, however, that most of the abdominal cases were ones of mistaken diagnosis; in fact, cases supposed to be ovarian, and therefore advanced cases at a time when any operation, abdominal or lumbar, would have been hazardous. I am firmly of opinion, however, that in these cases where a large tumor fills the whole abdomen, the lumbar operation cannot be entertained, as it is difficult or impossible to say which kidney is the diseased one and the cyst too large for this plan of operation. In closing this very imperfect survey of the subject of hydro nephrosis, I would beg leave to submit the following conclusions:—

(1) That in a large proportion of cases of advanced hydro-nephrosis, where the tumor fills the abdomen, it is impossible for the average operator to say whether there exists a cyst of the kidney or an ovarian tumor.

(2) That supposing hydro-nephrosis is suspected, it is not possible to say which kidney is the diseased one.

(3) The last two propositions being admitted, it follows that, in all those advanced cases, incision in the loin and drainage cannot be advocated, as the surgeon is unable to say which side ought to be incised.

(5) In view of these difficulties in diagnosis, it would seem preferable to make an incision in the linea alba and complete the diagnosis with the hand. If the case be a cyst of the kidney,

carry the incision upwards and complete the operation by enucleating the tumor.

(5) This operation is suitable alike for hydro- or pyo-nephrosis, the danger, of course, being greater in the former.

(6) That abdominal nephrectomy by the median incision is a difficult operation, owing to the high position of the tumor and the close relations of the aorta and vena cava, the large size of the renal vessels, and the fact that the tumor is behind both layers of the peritoneum.

(7) If a correct diagnosis could be made, I am of opinion that abdominal nephrectomy by incision along the linea semilunaris is the best operation for the class of cases under consideration ; but I do not think it possible to remove such large cysts by incision in the loin.

(8) In the case of a weak patient, or one advanced in years, supposing the abdomen to have been opened, it might be the safer procedure to open the cyst and drain from the loin. This operation is safer than nephrectomy, but it usually leaves a permanent fistula.

(9) In view of the symptoms observed in the two cases reported, I think it would be advisable, in completing the operation of abdominal nephrectomy, to secure drainage by making an opening in the loin.

PERI-TYPHLITIC ABSCESS.

By A. GROVES, M.D., FERGUS, ONT.

Peri-typhlitic inflammation, although comparatively rare, is still of sufficient frequency to render its consideration a matter worthy the attention of every member of the profession. It is only in recent years that the nature of the disease, its importance and appropriate treatment have become thoroughly understood. My limited experience, I am quite aware, gives me no right in any way to speak with the voice of authority, seeing that I have had only seventeen cases, of which thirteen went on to the formation of abscess and were operated on, the remaining cases having terminated in resolution; but my experience may be of some slight value to the profession, for I have had the good fortune never to have lost a case, either as a result of operation or for the want of an operation. It is very commonly supposed that inflammation in the cæcal region results solely from foreign bodies having become impacted in the vermiform appendix, but although this is often a cause, it is by no means the sole or possibly even the most frequent cause. Peri-cæcal inflammation may arise from impacted masses in the appendix, from hardened fæces in the cæcum, as a result of typhoid ulceration, and probably as a result of external injury.

The diagnosis is not usually difficult, for the increase of temperature, pain and localized swelling are usually sufficient to indicate the nature of the disease. Tenderness is not, as a rule, very marked, although always present. The general abdominal tenderness of peritonitis is wanting. In a case of this kind the appropriate treatment is perfect rest and thorough emptying of the bowels if there seems to be impaction in the cæcum, opiates to relieve pain, and, locally, warm applications if they are grateful to the patient. Bleeding, blistering and the inunction of mercurial ointment are positively injurious, and can meet no useful indication. Should resolution not take place speedily, or should the symptoms point to the probable formation of pus, an operation should be at once undertaken, for delay is, in such a case, particularly dangerous. It must be admitted that no posi-

tive rule can be laid down as to the proper moment for operating, that being a matter altogether for the judgment of the surgeon, but there can be no question that an early operation is in every case best.

In my opinion, the point at which the opening should be made is of the utmost importance, in order to avoid opening into the abdominal cavity. I know many surgeons of the present day speak lightly of opening the peritoneum, and too often have the courage of their convictions, but, although I have no morbid dread of intra-peritoneal surgery, nevertheless I retain a lingering respect for peritoneal integrity, and am old-fashioned enough to think that, other things being equal, it is better to keep outside the peritoneum. The rule I follow is to make an incision about two inches long and not more than one inch to the inner side of the anterior superior spinous process of the ileum, dissecting down, using the surface of the bone as a guide until the abscess cavity is reached. I have found no advantage from the use of a drainage tube, nor does there seem to be anything gained by elaborate antiseptic precautions; at the same time, if an iodoform odor tends to reassure the surgeon, it will be found quite harmless. I have never had the misfortune of opening the peritoneum in these cases, possibly because I have been especially careful to avoid it, nor have I ever had to perform a laparotomy for the purpose of washing pus from a ruptured abscess out of the cavity of the peritoneum; but if the abscess had burst into the peritoneal cavity, an immediate laparotomy is imperatively demanded, for on this depends the sole hope of saving the patient.

In my cases there were but four where there was actual communication between the bowel and the abscess at the time of the operation, and in one of these cases about four square inches of gangrenous intestinal wall came away, rectal injections flowed freely from the wound, and fæces were discharged, yet in a few weeks the parts were entirely healed and the patient now enjoys perfect health. In no case have I seen any after ill results of the disease, nor have I known any case in which abscess developed a second time.

Retrospect Department.

QUARTERLY RETROSPECT OF MEDICINE.

By R. J. MACDONNELL, M.D.,

Professor of Clinical Medicine in McGill University; Physician to Montreal General Hospital.

Paroxysmal Hurry of the Heart.—Rapid action of the heart has latterly been attracting some attention both in England and upon the continent. Dr. Samuel West dealt with the subject in a paper read before the Medical Society of London, March 10th, 1890. The affection is not common and its literature is scanty. Dr. Bristowe, in the tenth volume of *Brain*, describes it as “recurrent palpitation of extreme rapidity in persons otherwise apparently healthy.” In a typical case, the patient, who is usually between thirty and forty, is suddenly seized with an attack in which the heart acts with very great rapidity, beating often from 200 to 300 times in the minute. This may be the only symptom and the patient may not be incapacitated, but equal to all usual work, and even capable of considerable mental and bodily exertion. More commonly there is associated with the rapid action of the heart more or less violent palpitation, and at times also cardiac pain, both of which symptoms may be so severe as to completely invalid the patient for the time. The attacks come on with or without any assignable cause, though they may be produced by worry or work; but when the attack is past the patient may be enabled to resume business. The paroxysms vary in duration, from a few minutes to several hours or even occasionally days, while the intervals between them vary also irregularly. The general tendency is for the intervals to diminish and the attacks to increase in frequency.

Although in some cases organic disease of the heart exists, in the majority there is no definite evidence of organic lesion. During the attack the apex may be displaced, the cardiac dullness increased, and murmurs sometimes of great intensity may be heard, but all the physical signs disappear when the attack is over and no signs of cardiac lesion persist. It seems due to some organic lesion, more probably muscular rather than valvular.

However this may be, many of the patients die with cardiac symptoms: some suddenly, as if of cardiac syncope; others of gradual cardiac failure, and that, too, in cases where there is no evidence of valvular disease.

The evidence is not yet sufficient to determine the usual course of the affection. Dr. West is of opinion that many cases recover, certainly that in some cases many years pass by without any return of the symptoms. However this may be, the affection is one that is compatible in many cases with active work for years. Dr. West illustrates his paper by the records of several cases. In case I there were attacks of palpitation, frequently without assignable cause, the pulse beating 200 and 250 to the minute, temporary musical murmur, no definite cardiac lesion, and a history of rheumatic fever. Recovery ensued to an extent sufficient to enable the patient, who was a railway porter, to resume his occupation. The most interesting feature of the case was the condition of the heart. There was evidence of great dilatation, and accompanying the dilatation and disappearing with it a very remarkable musical murmur, which agreed with no valvular lesion. The condition is suggestive of a muscular lesion, which the previous history of rheumatic fever also renders not unlikely. The gradual, somewhat slow, recovery, as well as the influence which nitrite of amyl had upon the attacks, point in the same direction.

The second case reported by Dr. West was that of a commercial traveller, who was brought to St. Bartholomew's Hospital almost in a condition of collapse, with a pulse of 300 to the minute. The attack was sudden, and there came on with it severe pain in the præcordium, in the back between the shoulders and down the left arm, and almost a condition of collapse supervened. The cardiac dulness was a little increased and the apex displaced to just a little outside the nipple line in the fifth space. The right border did not extend beyond the left edge of the sternum. No murmur. Nitrite of amyl gave gradual relief, and the pulse fell to 88. A systolic murmur became audible as the attack passed off. After some time two murmurs could clearly be made out, one at the apex audible also in the axilla,

and occasionally faintly at the angle of the scapula, the other at the right base and propagated upwards into the neck. Both murmurs were systolic in time and no diastolic murmur could be detected. This was the third attack and it lasted about nine hours. But the first attack, eight years ago, had continued over several months, and the second over four weeks, so that the attacks appear to be getting less severe and less frequent. There was a possible history of syphilis, which is a point worthy of attention, since it is also present in one of Dr. Bristowe's patients, and it may suggest the lesion in some of the cases.

In the third case, the attack followed an effort to hurry, and the patient was one of the hospital nurses. There was no evidence of actual disease of the heart, but a tendency to hysteria was present.

The affection is one of the middle period of life, for out of the twelve cases recorded by Dr. Bristowe and by Dr. West, ten occurred between the ages of twenty-five and fifty. The liability of the two sexes is the same. Is there an organic lesion of the heart or not? A nervous affection it certainly must be, but the question is whether this nervous irritability is itself due to organic disease of the heart. Dr. Bristowe regards it as a functional disease, and this conclusion is supported by the only post-mortem obtained. A good deal may be said on the other side. Extreme rapidity is rare in ordinary palpitation, and in exophthalmic goitre, where palpitation and rapidity of action are so common, it is unusual for signs of cardiac failure to appear. If there be a lesion, it is probably of the myocardium. In several of the cases there is a history which would explain such a lesion. Two of Dr. West's patients had had rheumatic fever and the second probably syphilis. The lesion may well be, in some cases, a form of chronic interstitial myocarditis consequent on past rheumatic pericarditis, or in others on syphilis, being thus related to fibroid disease of the heart. Proof is impossible, and such a conclusion must at present remain a matter of opinion.

Essential Paroxysmal Tachycardia.—Under this title Bouveret deals with the same subject in the *Revue de Médecine*.*

* P. 753, Sept. and Oct., 1889.

He describes the affection as a morbid entity, characterized by attacks of inflammation coming on without appreciable cause, and in the course of which the pulse-beats number 250 or more to the minute. The attacks begin suddenly and the pulse reaches its maximum all at once, and when the attack is over it drops suddenly to its normal rate. At the moment, in almost every instance, the patient experiences either a sensation of something having given way in the chest or a sharp access of pain. Some attacks are short and some long, the first lasting from several days to a week, and the latter lasting several weeks or months. Short attacks are of more frequent occurrence than are the long ones. In some patients but two or three attacks occur during the year; in others a greater number. The frequency of the attacks increases with age.

In the short attacks the patients, in the beginning, do not suffer to an extent sufficient to compel them to relinquish their occupation. There is moderate dyspnœa, 25 to 30 respirations to the minute; slight cyanosis; right lateral decubitus is preferred. As the attack becomes prolonged there is a perceptible increase in the volume of the heart, while there is turgescence of the jugulars, dysuria with albuminuria in some cases, enlargement of the liver, of the spleen, and all the signs of pulmonary congestion, which if extreme is accompanied by hæmoptysis.

In a case observed by Bensen, compression of the vagi in the neck was followed by a diminution in the number of cardiac pulsations.

In 11 cases collected by Bouveret there was a fatal termination in 4; in two of these death was due to syncope, and in two others to asystolic collapse.

Under ordinary circumstances this affection occurs in patients bodily or mentally overworked, apart from any cardiac affection, tobacco or other poisoning, or from Graves' disease or any reflex tachycardia. Bouveret believes that it depends upon some lesion of the pneumogastric nerve, because after death no alteration was found either in the cardiac muscle or in the nerves ending there.

In *La France Médicale* (Dec. 12th, 1889) Sollier records a case of paroxysmal tachycardia, in which sudden death occurred.

In the *Medical News* (April 26th, 1890), Dr. Robison, after giving an abstract of Bouveret's paper, records a case occurring in his own practice in Chicago.

Throat Complications in Typhoid Fever.—One of the very common complications in typhoid fever is deafness, which has been attributed to the extension of the pharyngeal catarrh to the Eustachian tube. Landgraf (*Centralblatt für Klinische Medicin*, No. 17, quoted in the *Lancet*, May 24th, 1890) has made observations on 166 patients suffering from typhoid, of whom 46 were males and 70 females. Of the former 28 had throat complications, and the latter 13. The mortality of those thus affected was 17 per cent. in the males and 23 per cent. in the females, whilst in those who had no such complications, the mortality was 8.2 in men and 8.5 in women. The most common condition was a simple catarrh of the pharynx and larynx. Follicular tonsillitis, described by some writers, Landgraf had never seen amongst his patients. On the other hand, in a great number of cases, he had noticed small superficial ulcers on the soft palate, epiglottis, uvula, and mucous membrane of the lips. These ulcers generally appeared during the second week, did not affect the follicles of the tonsils, and healed more or less rapidly from the edges without the formation of scabs. He does not consider that they have any prognostic significance. Whether in severe cases they are to be considered as diphtheritic in nature or not is an open question. As regards the larynx, Landgraf found that this organ was attacked in one-half of the patients. Usually there was merely a simple catarrh which showed itself as a partial reddening of the mucous membrane, especially on the inner surface of the arytenoids and epiglottis. This catarrh began between the end of the first week and commencement of the third. It was accompanied by very few subjective disturbances, was followed by desquamation of the epithelium, and generally passed away in a few days. In most severe cases yellowish-gray flecks appeared, usually on the edge or under surface of the epiglottis or on the arytenoids. These flecks consisted, in two cases in which scrapings were taken, of collections of microorganisms (*staphylococcus pyogenes flavus et aureus*). These

flecks, like the catarrh, rapidly disappeared. In other cases more or less œdema occurred, which chiefly affected the edge of the epiglottis, and led to deep ulceration and denudation of the cartilages. There was great pain on swallowing. The course was almost always favorable, though deformities or scars of the epiglottis occasionally remained. Another and more serious affection of the larynx consisted in erosion of the mucous membrane, not only of the epiglottis, but also of the vocal cords, the arytaeno-epiglottidean folds, and the posterior wall of the larynx. Deep ulceration occurred very often with the formation of a membrane like diphtheritic membrane, and not uncommonly led to perichondritis and stenosis of the larynx. Landgraf considers that this necrosis of the mucous membrane is a local gangrene, produced, not by pressure, but by blood stasis. In favor of this he asserts that this complication only occurred in those severe cases where there was great loss of strength, and that therefore the administration of stimulants was urgently called for. Occasionally typical typhoid ulcers were seen similar to and occurring as those met with in the intestine. These were situated on the posterior wall of the larynx, on the under-surface of the epiglottis, and on the false vocal cords. They were characterized by having undermined edges, which were swollen and dark in color, and by the thick, uneven floor. Perichondritis was always secondary, appeared only during the convalescent stages of the disease, and attacked the arytaenoid. Landgraf has twice observed paralysis of the laryngeal muscles. In one case there was paralysis of the left vocal cord, and in the other the crico-arytaenoidens posticus was affected.

Primary Cancer of the Liver.—Dr. Hansemann points out (*Berliner Klinische Wochenschrift*, No. 16) that the occurrence of primary cancer of the liver is not so frequent as is often admitted; that in many cases the primary source of the hepatic disease has been overlooked. Leichtenstern, he says, from records embracing the period between 1845 and 1872, gives 72 instances of primary to 358 of secondary cancer. Hansemann himself, in the Berlin records from 1870 to 1889, finds among the 258 cases of hepatic cancer thence compiled twenty-five of

primary cancer of the gall-bladder, two of primary cancer of the larger bile-ducts, and only six of true primary cancer of the liver, and two of these are doubtful. He shows that in literature two distinct types of hepatic adenoma have been described; one in which the structure of the bile capillaries is reproduced, and the other in which the cells are larger and the tubules resemble those of the tubuli contorti of the kidney. Schüppel was of opinion that such adenomata could become converted into carcinoma, as would appear to have been the case in the instance recorded by Hansemann. One must admit, however, a form of "malignant" adenoma, for there are cases in which there have been metastatic deposits, the tumor penetrating the veins. Besides this adenomatous type, there are two other forms of primary hepatic cancer. One is in the form of large solitary masses, from which secondary deposits form in the vicinity of the organ. The other and less rare type is the infiltrated form, which to a certain extent stimulates cirrhosis. Both these conditions arise in the hepatic cells.

Pyothorax Subphrenicus.—Scheurlen* records two new cases of pyothorax subphrenicus, and he has collected 32 similar histories. Pyopneumothorax was present in 13 cases; in 15 cases the disease was situated in the left side, 19 times on the right. In but 17 cases an ante-mortem diagnosis had been made; operative measures had been taken in 15 cases, in 6 of which recovery took place. The causes of the abscess were: ulcer of the stomach, 11 cases; ulcer of the duodenum, 4 cases; inflammation and perforation of the vermiform appendix, 6 cases; wound causing sanguineous effusion, which ultimately became purulent; abscess of the liver or suppurating, 3 cases; abscess of the spleen, 2 cases; and lastly, in three cases no appreciable cause could be discovered.

As a matter of clinical diagnosis, it frequently happens that the primary lesion is unrecognized, in which case the pyothorax appears to arise spontaneously. The diagnosis between a pyothorax upon the diaphragm and one below that structure presents

* *Charité Annalen*, p. 158, 1896; also in *Bertra des Sciences Médicales*, Avril 1896, 1896.

serious difficulties. Empyema ordinarily follows a pneumonia, or tuberculosis, or the puerperal state. When these causes are absent, the physician should begin to consider the question of subdiaphragmatic abscess. Attention, too, should be paid to the severe pain in the hypochondrium, which is reflected to the shoulder, to the want of proportion between the local and the general symptoms, the physical signs corresponding to a moderate pleuritic effusion, while at the same time there is very high fever, prostration, and delirium. In more than half the cases there is secondarily an exudative pleurisy.

Empyema.—Renvers* thus classifies the various cases of empyema which he has observed :

1. *Metapneumonic empyema.* In a case of pneumonia, seven days of normal temperature having elapsed since the crisis, purulent effusion was discovered. In another case pus was found in the pleura almost immediately after the pneumonia, and fever did not show itself until the 17th day. Pneumococci were found in the pus of both these effusions. The pus was thick, creamy, with fibrinous flocculi. Thoracotomy was successful in bringing about recovery in all the three cases observed by the writer.

2. *Metapneumonic empyema complicated.* Here staphylococci and streptococci are found, as well as the pneumococci. In these cases complications other than pneumonia exist, and the empyema has no tendency to spontaneous cessation.

3. *Empyema consecutive to a chronic affection of the lung.* Two alcoholic patients of very cachectic habit were attacked suddenly with purulent pleurisy. In the first there existed dilatation of the bronchi with fœtid bronchitis. The second was the subject of chronic bronchitis. When the thorax was opened a large cavity was found enclosing several ounces of pus ; this cavity communicated by a fistulous opening with a second cavity which contained about the same quantity of pure pus.

4. *Empyema arising in connection with septicæmic conditions.* These occur specially in connection with puerperal diseases, and are often double.

5. *Empyema in connection with tuberculosis.* The majority

* Revue de: Sciences Médicales, 15th April, 1890.

occur in this connection. In many cases, though, one does not find micro-organisms in the pus, particularly Koch's bacillus, even in those cases in which a cavity discharges itself into the pleura. Pyopneumothorax may occur in these circumstances. The staphylococcus may be found as a complication of tuberculosis. Metapneumonic empyema may occur amongst tuberculous patients.

RETROSPECT OF PATHOLOGY.

By WYATT JOHNSTON, M.D.,
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Diphtheria.—A number of important papers have recently been published on the bacteria found in connection with this disease. Since Loeffler announced the occurrence of a specific bacillus in all cases of true diphtheria, the matter has received special attention at the hands of bacteriologists. A point of special interest was to ascertain the nature of primary croupous laryngitis, and to learn if the local membranous inflammations occurring in the intestine, bladder, skin, etc., were really diphtheritic in their nature. Paltauf and Kolisko (*Wiener Med. Wochensch.*, No. 8, 1889) found Loeffler's bacilli present in the cases of membranous croup which they examined, and therefore regard both croup and diphtheria as infective. In local diphtheritis in other situations they were unable to find these bacilli. The bacilli, when present, were always accompanied by streptococci and staphylococci.

R. Wurtz and H. Bourges (*Archives de Med. Exp.*, May, 1890) examined the bacteria present in nine cases of diphtheritis accompanying scarlatina. Of these, in seven the diphtheritic condition appeared early (*precoce*) and in two late (*tardive*). In the seven cases where it appeared early streptococci were found, occurring in chains, resembling, but not absolutely identical with, those found in erysipelas. In six of the cases they were accompanied by pyogenic staphylococci; none presented Loeffler's bacilli. In two cases where the diphtheria set in late (6th and 9th day), Loeffler's bacilli were found in both instances.

T. M. Prudden of New York (*Amer. Jour. Med. Sci.*, May,

1889) examined 24 cases of diphtheria in children, either primary or in connection with suppuration, scarlatina, measles, etc. He did not find Loeffler's bacilli in a single instance, although the examination on this point was directed with the greatest care. In two cases of scarlatinal diphtheria staphylococcus aureus alone was found. In the remaining 22 cases streptococci were found in both local lesions and the viscera. Where the condition was complicated by pneumonia, chains of cocci were found in great abundance in the exudation. These cocci were absent from the throat and tonsils of 31 healthy children not exposed to infection, but among 40 children in good health, but living in a hospital where the disease was epidemic, the cocci were found in twelve instances. Inoculation with these organisms did not produce in animals any disease fairly analogous to the diphtheria occurring in the human subject.

In the researches already quoted it will be noticed that there is a diversity of opinion as to the nature of the pathogenic agent in this disease, and the experiments on animals do not appear conclusive. The induced disease was always a sort of septicæmia, the local manifestations being far from characteristic and the inoculated organisms being found after death in the blood and internal organs.

Some recent experimental researches are far more satisfactory from being in harmony with what we know of the disease in man. Roux and Yersin (*Annales de l'Inst. Pasteur*, Dec., 1888) investigated 15 cases, and found Loeffler's bacillus present in all of them. With cultures of the bacilli they were able not only to induce typical pseudo-membranous inflammations in animals, but these inoculations were followed by paralyzes corresponding to those occurring after diphtheria in man. Further, they were able to obtain by filtration a toxic substance from their cultures capable of producing this paralysis without the aid of the living bacteria. This poison was thought to be of the nature of a diastase or ferment. A small dose of the poison given subcutaneously produced local inflammation (without pseudo-membrane) followed by congestion and hemorrhages in the internal organs, especially the kidneys. The paralytic action of the

poison where very small doses were given was often greatly delayed, which may serve to explain the late onset of the corresponding symptoms in man.

These results have since been confirmed and extended by V. Babes of Bucharest (*Virchow's Archiv*, Bd. 119), who found Loeffler's bacilli present in all cases. He was able also to produce typical diphtheritic inflammation in rabbits by inoculation in the conjunctiva, either with pure cultures or simply with small particles of diphtheritic membrane. Pure cultures, filtered through a Pasteur-Chamberland porcelain filter, yielded a clear fluid free from micro-organisms, but containing a toxin differing from any hitherto described, and apparently analogous with the substance found by Roux. Injection of 30 ccm. of this fluid subcutaneously in rabbits caused death in 24-48 hours with symptoms of progressive paralysis of the muscles, respiration and heart. When 5-10 ccm. only were injected, the animals lived for several weeks, but usually died with symptoms of a paralysis not unlike that of rabies, commencing by a weakness in the hinder extremity and leading in a few hours to complete paraplegia, followed shortly by paralysis of the heart and respiration. The autopsies showed parenchymatous degeneration of the liver and kidneys, with proliferation of nuclei about the minute blood-vessels. He did not succeed in producing a false membrane by injections of the filtered bouillon cultures, nor with any of the cocci found associated with Loeffler's bacillus. The cocci simply produce inflammation with necrosis, and so prepare the way for the action of the specific poison. In animals which had been inoculated with the bacillus, it was only found after death in the immediate neighborhood of the inoculation, corresponding exactly to what had been observed by Loeffler in human diphtheria. An attempt was made to secure immunity by protective vaccination, but without success, as animals which had survived appeared only to acquire a very slight degree of immunity limited strictly to the very site of the previous inoculation. Lastly, a series of therapeutic and prophylactic experiments were tried, the rabbits' corneæ being treated with various anti-septic agents, either before or after inoculation. It was found,

contrary to the supposition of Roux and Yersin, that carbolic acid in 20 per cent. solution was not only unable to check the formation of pseudo-membrane, but actually, through its irritating effect, predisposed to it. The same was found to apply to 10 per cent. citric and 5 per cent. acetic acid. On the other hand, 1-4000 sublimate and 1-1000 permanganate of potassium, 1-5 alcohol, 1-50 chloral, and 1-20 boracic acid were unirritating and sufficed to check the formation of membrane.

E. Klein of London, whose views were previously at variance with Loeffler's, has recently examined 22 cases of typical pharyngeal diphtheria, finding a bacillus identical with that of Loeffler in every case. In 12 cases he found a bacillus almost identical in appearance and mode of growth, but devoid of pathogenic properties.

Organization of Thrombi.—R. Beneke of Leipzig has published some important results obtained in investigating this obscure subject. It is well known that the blood retained in a vessel between double ligatures may remain fluid for weeks or even months if the operation has been done aseptically, and even if a clot has formed, the length of time which elapses before it begins to organize is very variable. Beneke, without going deeply into the cause of the blood remaining fluid, has studied the conditions which attend the organization of the thrombus. He considers that it is the effect of the intervascular pressure on the cells composing the vessel wall which determines its occurrence or otherwise. When the vessel remains distended with blood between the double ligatures no organization occurs; and, microscopically, the walls of the vessel retain their normal appearance even in the immediate vicinity of the ligatures. On the other hand, if the vessel is collapsed at the time of the ligation, a condition favorable to proliferation of the connective tissue of the vessel wall with the vasa vasorum, at the spot at which organization commenced there was always an overgrowth of the intima, which appeared to take an active part in the process.—(*Ziegler's Beitrage, vol. vii.*)

How far may a Cow be Tuberculous before her Milk becomes Dangerous as an Article of Food?—The elaborate researches

made on this subject by Dr. H. C. Ernst of Boston have recently been published in full (*Transactions American Association of Physicians*, vol. iv). These investigations have been made on a scale and with an amount of precaution rarely met with, and are on that account most trustworthy. It had hitherto been supposed that as long as the udder of a tuberculous cow remained free from the disease the possibility of infection from consumption of the milk was practically nil. It was conceded, of course, that tuberculo-mastitis might be present to such an extent as to infect the milk without giving any external evidences during the lifetime of the animal, though even this was disputed. Dr. Ernst's experiments have led to the startling conclusion that the milk may be highly infectious where no disease of the udder is discoverable after death even with the aid of the microscope. The investigation consisted in microscopic examinations, inoculation of rabbits and guineapigs, and feeding experiments with calves and pigs. The feeding experiments were performed on a farm specially set apart for the purpose by the Massachusetts Society for Promoting Agriculture. To avoid the possibility of accidental infection the whole place was thoroughly disinfected and kept scrupulously clean during the experiments, all utensils being sterilized by heat.

Microscopical Examination—114 samples of milk, taken from 36 cows in various stages of tuberculosis, but all free from affection of the udder, gave positive results in 17 samples from 10 different cows. Tubercle bacilli were actually seen in the milk of 27 per cent. of the cows examined. To ensure this result about 20 cover-glass preparations had to be examined on each sample. Inoculation of 49 rabbits with samples from 13 cows gave positive results in 10 per cent. Inoculation of 54 guineapigs with samples from 14 cows gave 42.8 p.c. of positive results. In the feeding experiments in 13 calves, 41 per cent., and with 5 pigs 40 per cent. became tuberculous. At the time of writing the paper almost all the cows from which the samples were taken had been killed, and though all showed the presence of tubercle in some part of the body, not one showed tuberculosis of the udder. Dr. Ernst concludes that the milk from a cow

affected with tuberculosis in any part of the body may contain the virus whether the udder is affected or not. Unfortunately that part of the research most interesting from a scientific point of view, viz., the exact anatomical condition of the udder, appears not to have received the same amount of attention given to the preliminary details, and the statements on this point are anything but satisfactory. The practical point that milk may be capable of conveying tuberculous infection when no disease is recognizable in the udder is, however, proved beyond doubt.

On Hypertrophy of the Heart in Bright's Disease.—II. F. Formad of Philadelphia, in the course of 300 autopsies in cases of Bright's disease, found the heart hypertrophied in 62 per cent. of the cases, the left ventricle alone being affected in 34 per cent. and both ventricles in 28 per cent. The condition associated with the greatest degree of hypertrophy were (1) fatty and contracted kidney (late parenchymatous nephritis) occurring in 29 per cent. of the cases of general hypertrophy of both ventricles and 26 per cent. of those where the left ventricle alone was affected, and (2) red granular kidney in 44 per cent. of cases of left and 26 per cent. of symmetrical hypertrophy. The greatest degree of enlargement was found in cases where heart disease was also present, though cases of venous induration were not included. The average size of the heart was 10 oz. in acute Bright's disease, 15 oz. in large white kidney, 14 oz. in fatty, contracted kidney, and 17 oz. in red, granular kidney. Arterial changes (endoarteritis and periarteritis) were found only with the red granular kidney. Cases of senile atrophy were excluded, as were also cases of amyloid kidney. It is stated, however, that with amyloid kidney hypertrophy of the heart occurs as often as in any of the other forms, the absolute weight remaining low because of the originally defective development of the circulatory system in these individuals. An apparently small heart occurring in a scrofulous subject may really represent a considerable degree of hypertrophy.—(*Trans. Assoc. of Amer. Phys., vol. iv.*)

The Connection between Morbid Conditions of the Stomach and those of the Nervous System.—P. Cuffier (*Revue de Méde-*

cine, April 1890) describes four cases of cancer of the stomach where symptoms of bulbar paralysis appeared. He thinks that in addition to temporary reflex cerebral conditions, a permanent organic lesion of the medulla oblongata can be produced through an ascending neuritis of the pneumogastric. No reports of autopsies are given to confirm these views.

QUARTERLY RETROSPECT OF GYNÆCOLOGY.

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At a recent meeting of the American Medical Association, held at Nashville, Tenn., there occurred an interesting discussion on the occasion of Dr. Werner's paper on *Fistulous Escape of Ligatures after Abdominal Operations*. Dr. Werner advocated good drainage, and it was thought by those present that the drainage tube was not the cause of the ligatures and stump becoming infected and the former cast off. The use of the catgut and silkworm gut for abdominal ligatures were condemned, and English silk was considered the ideal ligature. American silk contained flax and cotton as an adulteration, and was therefore not considered fit for use. It was also considered better in every case to remove both ovaries, though only one seemed diseased at time of operation — (*Med. News*, May 31st, '90.)

Intestinal Obstruction following Vaginal Hysterectomy. (Dr. H. C. COE, New York.)—Dr. Coe publishes another case of this very interesting and unavoidable accident occurring in his practice. He says: In a paper on this subject, read before the New York Obstetrical Society last October, I stated that if I met with another case of intestinal obstruction "I would operate early or not at all." Unfortunately a similar case *did* present itself seven months after the first, and I followed exactly the course upon which I had previously determined, though with no better success than before. So far as I have been able to learn, this is the tenth case on record, my first being the seventh.

To epitomize Dr. Coe's case, it is only necessary to say that at the operation a coil of intestine prolapsed into the wound on

removal of the uterus and a gauze plug was inserted. The forceps were removed from the broad ligaments in twenty-four hours, but the gauze was not disturbed. On the third day several doses of salts were given without effect. High enemata were also given without satisfactory results. Patient now began to vomit, which soon became faecal. Laparotomy was performed and several coils of the ileum were detached from the peritoneal wound, when a quantity of flatus escaped per rectum. The patient died fourteen hours later, her temperature remaining below 100°. The autopsy showed the point of obstruction to be at the lower eighteen inches of the ileum. There were evidences of beginning peritonitis. Dr. Coe proposes several questions—

1. Does the occurrence of two cases of intestinal obstruction in rapid succession indicate some serious defect in the technique of the operation?

2. Is there any way of avoiding the complication?

3. Is there any way in which the obstruction can be overcome without opening the abdomen?

4. Why is the secondary operation invariably fatal?

In discussing the first question, Dr. Coe states that he secured the broad ligaments with the clamp and no ligatures were used, but he also says that it was impossible to attach the peritoneum to the edge of the vaginal wound on account of lack of working space. Now this latter, we think, would have been better to have been done, and we are surprised at the admission of so skilful an operator as Dr. Coe is acknowledged to be, finding it impossible to pass a needle under such circumstances, no matter how small the vaginal area was.

How now are we to avoid this complication? I think Dr. Coe has hit the mark in suggesting the complete closure of the peritoneal cavity, attaching the stump of the broad ligaments to the edges of the vaginal wound. If all hemorrhage is secured there can be no more need for drainage than in a clean laparotomy for removal of the appendages.

When obstruction takes place, there is, we should think, nothing to be done but open the abdomen and let the patient take her

chance. Without discussing this very important accident further, all men actively engaged in this branch of surgery must feel grateful to Dr. Coe for his very careful and valuable publication. We cannot imagine a complication to be avoided, which requires more earnestly our serious thought in order to bring about a change in the technique of this operation.

Laparo-Vaginal Hysterectomy.—Dr. Cleveland of New York reports a successful case of much interest. He began the operation by the vagina in the usual way, but finding it impossible to complete the operation by this method, opened the abdomen in the middle line and put the clamps on the broad ligaments from the vagina, using the fingers of the left hand in the abdominal cavity as a guide. Dr. Cleveland in his remarks upon the case suggests the advisability of this combined method being resorted to more frequently than it has been of late. When we know what a trying ordeal it is to remove an enlarged uterus through a small vagina, we feel justified in accepting any feasible method which will render more easy and shorten the operation. We are now convinced that the less the manipulation of parts in the field of operation and the greater the rapidity of action on the part of the operator the better the chances are for the recovery of the patient. These are conditions we are all agreed upon, and it remains an open question how such conditions can best be attained. Dr. Cleveland suggests to first open the abdomen by a small incision low down, then temporarily close this and continue the operation in the vagina until the broad ligament requires clamping. The small wound in the abdomen can then be used to admit the forefinger of the left hand and guide the clamp from the vagina safely over each broad ligament. If, then, the uterus be found too large to remove by the vagina, the abdominal wound can be enlarged and the uterus removed from above. The views of Dr. Cleveland we fully concur in, and think that the little extra danger (if any) to the patient from the small abdominal wound would be fully balanced by the advantages attained in rapidity and perfection of action on the part of the surgeon. This method only applies where the vagina is small, the uterus high up, and cannot be

pulled down. If, however, the vagina is capacious and the uterus easily pulled down, the finger of the left hand can be used as a guide for the forceps through the vaginal opening.—(*Amer. Jour. Obstet.*, May, 1890.)

The Treatment of Suppurative Disease of the Uterine Appendages.—Dr. Boldt of New York publishes a most valuable paper on this important subject (*Amer. Jour. of Obst.*, vol. xxii, No. 3, 1889). The author divides diseases of the uterine appendages into three groups—

1. Those in which the operation is unjustifiable.
2. Where it is wise to watch the patient and keep her under constant treatment, and observe what benefit may be derived.
3. Those cases where delay is not only inadvisable, but dangerous.

Dr. Boldt pleads strongly for early section where the tubes are distended with pus, and cites four cases where he was obliged to operate after rupture had taken place. In the first case of this nature the tubes and ovaries, much enlarged and prolapsed, could be distinctly mapped out by vaginal examination. A diagnosis of double salpingo-oöphoritis syphilitica was made and operation advised provided improvement did not show itself in the course of a few months. One month afterwards this patient, after some violent exertion, was seized with symptoms of general peritonitis. Abdominal section now revealed both tubes to have been distended with pus, but had recently ruptured, pouring a large quantity of foetid pus into the abdominal cavity. The diseased parts were removed, the abdomen washed out, and a drainage tube inserted. The patient died in collapse sixty hours after operation. This patient had had one child fourteen years before. After this confinement she had had metritis and peritonitis; later she had been infected with syphilis by her husband, and had had off and on attacks of localized peritonitis.

The next case cited was unmarried and never pregnant. She had given the history common to many cases of catarrhal salpingitis, sudden seizures of pelvic pain, high temperature, etc., then temporary improvement, followed by some alarming conditions and gradual emaciation. Examination was difficult on account

of the excessive tenderness, but a soft mass was found to the right of the uterus; the left side of uterus was free. Patient had chills at variable intervals, and it was concluded that the inflammatory attacks were of a septic origin. Operation revealed ruptured pyosalpinx with extravasation of pus into the abdominal cavity. There were extensive adhesions, the separation of which gave rise to such severe hemorrhage that tamponment of the pelvis with iodoform gauze was found necessary instead of the drainage-tube. The gauze was removed in thirty-six hours and a hard rubber double-current drainage-tube inserted; the abdominal cavity was well washed out. The pulse became very feeble, and the cavity was irrigated with a one per cent. solution of chloride of sodium. After this the patient seemed to improve, but gradually sank on the fifth day after operation. At the autopsy diffuse nephritis was present.

The next case reported had a child six months previously. Since the birth of the child she had complained of constant severe pain in right side, also hypogastric pain and intense burning sensation. Both tubes found prolapsed and enlarged; uterus normal in position but very sensitive; cervix bilaterally lacerated. Diagnosis—Double pyosalpingitis due to puerperal endometritis. This patient, after sexual intercourse, was suddenly seized with severe abdominal pain and vomiting; shock was also present. Abdomen was opened within two hours and pus found escaping from an opening in the right tube. Both tubes, equally distended with pus, were removed. The operator washed out the cavity and closed the wound without drainage. The patient made a good recovery.

The fourth case had one miscarriage several months ago; since then had complained of inguinal pains, most severe on right side. Dysmenorrhœa very severe. In the cul-de-sac of Douglas large sausage-shaped masses are felt. The uterus is anterior, the cervix lacerated on left side, and all parts very tender to the touch. Diagnosis—Bilateral puerperal pyosalpingitis. Operation advised. Some time afterwards patient was attacked suddenly with symptoms of peritonitis from ruptured pus-tube (severe pain, small pulse, cold, clammy surface, and high tem-

perature). Abdominal section four hours after attack. Left tube found ruptured and right also ruptured during removal; adhesions not extreme. Abdominal cavity well washed out and wound closed; no drainage. Recovery uninterrupted.

I have reported these very instructive cases of Dr. Boldt's as fully as a condensed review will permit, for I consider them of great interest and value to the general reader. Cases of this nature must occur to every one in practice and the cause of death attributed to idiopathic peritonitis or some such absurd impossibility. The publication of such cases will certainly tend to educate and impress upon the physician the importance of not looking lightly upon such warning attacks as Dr. Boldt describes. All patients of this class, it will be understood, should have their pelvic organs carefully examined directly after a recurrent onset of such symptoms. Extensive adhesions would in this way be avoided, which are really the great point of difficulty to the surgeon and danger to the patient. After a simple laparotomy without adhesions, the patient should be almost certain to recover. Certainly the mortality should not be greater than after an equally well performed trachelorrhaphy. But if a patient is treated for months or years, tiding her through a series of attacks of localized peritonitis, each attack leaving its mark in extensive areas of scar tissue, or waiting until fatal rupture takes place, it makes the work very hard indeed for the surgeon into whose hands the unfortunate patient eventually falls.

Next to gonorrhoeal disease, I do not know of a more serious calamity to a woman than an attack of puerperal endometritis, whether following full term parturition or abortion. And I do not know of a condition more lightly looked upon by the general practitioner of medicine once his patient passes out of immediate danger, than this same condition.

The great difficulty of making an absolutely correct diagnosis in these and allied cases of disease of the appendages often comes in the way of obtaining relief for these patients. An examination, for instance, is made, the uterus will be found fairly moveable, though the whole pelvic floor is excessively tender, so much so that it is found impossible to properly map out the parts sus-

pected. An extensive bilateral laceration of the cervix with accompanying ectropion and muco-purulent endometritis. Too much is attributed to this condition of the cervix; it is thought to be the cause of all the present illness of the patient; an operation for its repair is performed, and after a while the patient finding she is no better loses confidence in specialism, and continues for years to suffer or dies suddenly. Much discredit has been thrown upon surgical gynæcology from causes of this nature, and the necessity for ever-increasing care in carrying out our investigations towards a correct diagnosis should stimulate us in this direction. In speaking of methods of investigation adopted in such cases, there is one method of inestimable value which I do not think Dr. Boldt mentions, viz., drawing down the uterus, when not absolutely fixed, by means of a volsellum and passing the forefinger of the left hand high up into the rectum. In this way we can reach beyond the folds of Douglas and can feel distinctly the enlarged thickened tube or ovary when it cannot be felt through the vagina. I have demonstrated the value of this method many times at my clinic in the Montreal General Hospital, where a simple vaginal examination would have afforded me no information. Dr. Boldt's paper is of great value, and will afford interest to every one engaged in the general practice of medicine.

Abdominal Gestation.—CHANDELUX (*Lyon Médical*, No. 2, 1890) performed laparotomy upon a patient fourteen months who had suffered from peritonitis after abortion. Foetal death had occurred some time before operation. A macerated foetus was found encysted in the abdomen, the right tube having ruptured. The cyst was sewed to the abdominal walls and the placenta allowed to remain. The cavity was irrigated with 1-25 boracic acid solution and tamponed with iodoform gauze. Six days after operation the greater part of the placenta was carefully detached and the patient recovered in twelve weeks.

Purulent Peritonitis.—FRANKEL and PREDOHL (*Münchener Med. Wochenschrift*, No. 2, 1890) publish the results of their observations in the Hamburg General Hospital. Cultures of the streptococci, when injected into rabbits' ears, produced an

inflammation identical with that which resulted from the injection of the cocci of erysipelas. Other bacteria had the property of decomposing albuminoids and setting free ptomaines, which preserve their virulence long after the bacteria have been destroyed by boiling. There are therefore two kinds of purulent peritonitis—septic and putrid. Peritonitis produced artificially by injection of salt of iron or iodine always produced a serous exudate, and contained no organisms. The practical conclusion arrived at was the great necessity for absolute asepsis in puerperal and laparotomy cases, and early operative interference in cases of purulent peritonitis.

The Danger of Tamponing the Vagina.—KLOTZ (*Centralblatt für Gynäkologie*, April 12th, 1890) reports two cases of dangerous intra-uterine hemorrhage which occurred in spite of a firm vaginal tampon. In the first case the patient was three months pregnant and had flowed for four weeks. External hemorrhage was entirely checked by a tampon, but a few hours later collapse set in; the uterus was quickly emptied of retained blood-clot, but death took place in one hour. The other case was one of profuse hemorrhage from a uterine fibroid. She was tamponed previous to a laparotomy, but collapsed and nearly died. A large quantity of blood-clot was removed from the uterine cavity and she was saved with much difficulty.

Perineotomy for Removal of Pelvic Tumors.—Sanger (*Archiv f. Gyn.*, Bd. xxxvii, Heft 1) limits this operation to growths situated in the pelvic connective tissue, especially the dermoid variety. With the patient in the lithotomy position, a three-inch incision was made extending from the inner border of the right labium majus obliquely inwards across the perineum to a point one inch behind the anus. The ischio-rectal fossa was opened, the lavater ani muscle divided near its insertion, and lastly, the pelvic fascia was cut through. The cyst was then shelled out, the wound packed with iodoform gauze and closed with deep sutures. The gauze was in two days replaced by drainage tubes, through which the cavity was washed out daily. The patient was discharged in three weeks.

The author believes that subperitoneal dermoid cysts of this

character are not rare ; he has collected eleven such cases. The operation may be performed in other cases, such as tumors, foreign bodies, hæmatomata of the ischio-rectal fossa and sub-peritoneal cavity, recto cervical fibromata, intra-ligamentous and retro-peritoneal ovarian cysts, retro-uterine hæmatocele and abscess, and other cases. The great advantage of perineotomy is that it permits the diagnosis and removal of these ovarian sub-peritoneal growths without incising either vagina or rectum, and hence avoids the consequences of fistulæ.

Hydrastinin in Uterine Hemorrhage.—FALK (*Archiv f. Gyn.*, Bd. xxxvii, Heft 2) reports 28 cases of hemorrhage treated by this drug ; 8 were due to the presence of fibro-myomata. He found it useful in hyperplastic endometritis and congestive dysmenorrhœa. It should be given before the flow, preferably by hypodermic injection, in doses of from three-quarters of a grain to one grain and a half (in aqueous solution). Muriate of hydrastinin acts more powerfully than the fluid extract of hydrastis, probably by causing contraction of the arterioles. The diminution of blood-supply to the uterus causes uterine contraction, which still farther increases the anæmia ; painful contractions were repeatedly noted.

Substitute for Salpingo-Oöphorectomy in the Treatment of Fibro-Myoma. (*Wiener Klin. Wochenschrift*, No. 10, 1889.)—RYDYGIER recommends the tying of the ovarian and uterine arteries instead of castration. He splits the broad ligaments and ties the arteries. In one case in which this operation was performed the tumor was reduced to one-fourth its original size within four months.

The more Remote Results of Removing the Ovaries and Tubes.—Dr. Howard Kelly writes a very interesting paper in the *Johns Hopkins Bulletin* on this subject. The paper is largely statistical and deals with the results he obtained in the experience of ninety-six cases. This experience extended over a period of four years. Eight were cases of salpingo-oöphorectomy for fibroids, all symptomatically relieved. Twenty-five were cases of tubo-ovarian abscess, commonly called pyosalpinx cases ; of these cases Dr. Kelly says that he does not know of

a single case "not improved." Thirty-three were cases exhibiting evidence of salpingitis and ovaritis; every case bound down by adhesions due to pelvic peritonitis. Thirteen of these cases are reported as perfectly well. Seventeen are improved. One case died some months after the operation. Of twenty-five cases operated on for lesser diseases of the ovaries and tubes, nearly all are well or greatly improved. The author says:

"I will summarize my statistical statement and anticipate my conclusion by the following declarations—First, but a small percentage of women thus operated upon (salpingo-oöphorectomy) are restored to perfect health within a few weeks; secondly, a larger number only experience a certain percentage of improvement, the operation forming a necessary stepping-stone to comparative health; and thirdly, a few cases are subjectively no better after the operation than before it, although seriously diseased structures may have been removed. It is at once evident from this statement that I hold that abdominal surgery stands upon the same plane as general surgery, and that the successful results are not often absolutely good, and are oftener relatively good results. A comparison with the amputation of general surgery may be very appropriately made. The amputation has in the past been sweepingly termed the 'opprobrium of surgery.' In cases of compound fractures this opprobrium has been recently very unexpectedly removed by antiseptic surgery. In crushes and gangrenous limbs no procedure is more nobly conservative and beneficial than amputation. In withered, distorted, painful limbs is it purely a question of risk and suffering incurred, as balanced against the probability of relief and increased usefulness, which decides the surgeon whether to operate or to stay his hand? So it is with these tubo-ovarian amputations—the gangrenous sloughing masses must come out at any risk. The withered misshapen tubes and ovaries bound down to the pelvic floor only ought to come out if we can show good enough results. The statement of the results implies the question, which it answers at the same time, 'Is the gain worth the risk and the suffering?' I would urge that in a scientific consideration of the question we should from the outset avoid the confusion of speak-

ing of salpingo-oöphorectomy as if the operation were for but one disease. From a practical standpoint there are two classes of cases in which the operation is called for. They are the *necessary* and the *elective*. Salpingo-oöphorectomy performed for fibroid tumors choking the pelvis and pressing on rectum and ureters, and for pyosalpinx, is an operation *necessary* to save life. Salpingo-oöphorectomy performed for chronically inflamed ovaries and tubes, or for small ovarian cysts or blood cysts of the ovaries, is a purely *elective* operation. The *results* of salpingo-oöphorectomy should be divided into two classes connected by the bridge of time—first, those results which at once follow in the train of the operation, and, secondly, those symptoms which persist or crop out after months or years—the *immediate* and the *remote* results. In estimating the results we must never lose sight of the fact that the suffering which immediately follows an operation, even though the patient be completely cured by it, is to be weighed against the operation along with its mortality, the accidents of fœcal fistulæ, injured ureters, fistulous drainage tracks, hernia, ileus and all pain from adhesions and other sequelæ. Among the remoter results are uterine hemorrhages, hernia, late discharge of the ligatures, and I might include here persistence of pain, which it had been expected the operation would relieve. Some of these evils can be readily obviated by closer attention to some details in the technique. Hernia is an evil which will be much lessened by a more careful technique of the drainage-tube, and more careful suturing, remembering that this form of hernia, like ordinary ventral hernia, is a diastasis of the recti muscles, which must therefore be brought into careful apposition. Neither skin nor peritoneum must intrude between the lips of the wound, and when the drainage tube is pulled out its track in the abdominal wall must be closed by a provisional suture laid there at the operation for this very purpose. To avoid some of the evil late results of salpingo-oöphorectomy I would also urge the following practical points :

The ligature often remains a focus of sepsis long after the pelvis has completely emptied itself of all débris. Avoid this by never drawing a ligature through the pedicle of a pyosalpinx so

long as there is any pus in the pelvis or about the stump. The sepsis thus dragged into the interstices of the pedicle is a fruitful source of serious trouble.

Use a drainage tube large enough to work rapidly, plug it with gauze for continuous capillary drainage. Keep it aseptic and get rid of it soon, lest its track suppurate and pus in this way get into the ligatures.

Work deliberately and carefully, and do not unnecessarily handle the intestines.

Examine the specimen carefully before concluding the operation, to see that it is perfect and no pieces of tube or ovary are left behind.

In cases of sarcoma give the tumor a very wide berth. If you don't, your pedicle will propagate the disease. Do not consider the work at an end when the stitches are out, but watch the patient for some weeks or months. Avoid carefully excessive constipation.

Keep your cases longer in the hospital ; two and three weeks is too short a convalescence ; they are liable to be seriously ill again after getting home."

At the last meeting in Nashville, Tenn., of the American Medical Association, Dr. Franklin H. Martin of Chicago read a paper on *A Plea for Early Vaginal Hysterectomy for Cancer of the Uterus*. Dr. Martin, whose principal experience has been in electricity heretofore, concludes as follows :

1. Vaginal hysterectomy is the most justifiable surgical procedure we know as yet for cancer of the uterus.

2. Vaginal hysterectomy should be attempted for the cure of cancer of the uterus at the earliest possible moment after the disease is diagnosed.

In support of the foregoing propositions these facts were given :

- (a) Vaginal hysterectomy will remove the entire disease in cancer of any portion of the uterus in a greater proportion of cases than any other surgical procedure now recommended.

- (b) Vaginal hysterectomy will enable the operator to go farther beyond the diseased tissue into healthy tissue than any other surgical procedure.

(c) Vaginal hysterectomy is a more ideal surgical operation, and leaves the remaining tissues in a less favorable condition for return of the disease than will any other operation.

(d) Vaginal hysterectomy for cancer of the uterus will in the future give an immediate mortality among general operators of not more than ten per cent. In the hands of experts it will not exceed five per cent.

Mesenteric and Omental Cysts.—A most interesting note on the above subject, with cases illustrating them, appears in the *British Medical Journal* of June 14, 1890, by Sir Spencer Wells. The first case was that of a diseased cyst of the mesentery occurring in an unmarried girl of 19 years of age. The tumor was regarded at first as a hydatid tumor of the liver. It extended from the lower edge of the liver downwards for about four inches below the umbilicus; below this there was resonance, and the vaginal examination showed no evidence of pelvic tumor. The tumor could be freely pushed from side to side, but not upwards or downwards. On opening the peritoneum the mesentery welled up in cyst-like form. On dividing this there escaped yellowish semi-solid fat-like matter, with some bundles of hair. The cavity extended back to the spine or root of the mesentery. The fatty matter removed weighed six pounds, and was pronounced by the pathologist to be dermoid matter. There was no drainage used; the patient recovered.

The other case was one of *omental cyst*. This occurred in a girl of 4 years of age. On examination the abdomen is chiefly prominent below the navel, and the prominent area is dull on percussion and fluctuating. The diagnosis made by Sir Spencer Wells was a thin-walled cyst, probably ovarian. The cyst was tapped and three pints of fluid drawn off. The fluid was like water, and had but a trace of albumen in it. The fluid collected again, and in thirteen months it was removed by laparotomy. There was found to be a cyst-like expansion of the omentum, which was adherent to adjacent parts. The patient recovered quickly after the operation and returned to her home. The author states that the father of the patient wrote to him five months afterwards, saying, "She eats, drinks and sleeps well, and romps about in a very different way to what she used to."

After Effects of Caustics and Astringents.—(*Jour. of Obs.*) M. Doléris has something to say on the functions, pathology and surgery of the cervix uteri, from which we gather a number of points worth reading, and particularly does he teach us a lesson on the *after-effects* of caustics and astringents that some of us ought to carefully consider. Taken as a simple passive canal, the normal uterine canal has in its general configuration an almost rectilinear direction; it is only slightly curved at the isthmus. Its calibre is always sufficient for its function. The structure of its membrane and the shape of its walls assure, by a kind of drainage apparatus, the permeability of the organ in two directions, from within outward, and inversely. The moderate secretion of cervical mucus is not unfavorable to its function. The primordial rôle in the initial phenomena of fecundation belongs incontestably to the os uteri. Among women who have had children the vaginal canal is larger, but the uterine orifice is more open and much more accessible than in those who have never had children. In this manner the normal aptitude to successive fecundations is preserved. When an excessive deformation vitiates these reciprocal dispositions of the vagina and cervix uteri, the aptitude diminishes and even disappears. The muscular tension of the stroma of the cervix responds to various active phenomena in relations with its function. The cervix acts as a sphincter during gestation and during the first phase of parturition. The rôle of the muscular sphincter is greatly aided by the vascular circle which surrounds the cervix in its subvaginal portion, and which constitutes in the uterine isthmus a true erectile tissue, at the edge of which the muscular fasciæ are reduced to an areolar membrane. The maintenance of the muscular tissue and the integrity of the nervous influx are the guarantees of the resistance of this region. All the pathology of the cervix uteri is contained in three words—traumatism, inflammation, and degeneration or neoplastic processes. Cervical endometritis causes ectropion of the mucosa of the cervix, just as rectal inflammation causes hernia of the rectal mucous membrane. *Caustics and the thermo-cautery cause transformation of the cylindrical epithelium, thus lining all the cervical ectropion by*

a solid pavement-like coat. From this we have obliteration of the ducts of those glands which open on the surface of the ectropion. What happens now? The secretions of the glands are retained and produce chronic tumefactions. Under the cicatrix thus formed ensue processes which have escaped many observers. The glands are altered, filled by the products of secretion, and enclosed under a corneous envelope. From time to time there appear at the surface follicles filled sometimes by pus, a proof that infection exists in the depth of the tissue. The last stage of this chronic lesion is cystic degeneration with invasion of the sclerosed tissue by cysts. These disturbances cause elongation of the cervix, atresia of the cervical canal, deviations, etc. They occasion also the awakening of salpingo-ovarian affections. The vascular sphincter permits us to understand localized spasms of the internal orifice. Precocious atheroma, constitutional or acquired enfeeblement of the arterial walls, etc., cause loss of the firmness of the structures at the junction of the cervix and body of the uterus, with atony of this middle segment and flexion at the isthmus.

Pelvic Abscess Treated by Abdominal Section.—(A. W. MAYO ROBSON, F.R.C.S., in *London Med. Press.*)—Abscesses situated in the pelvis frequently offer very unfavorable conditions for rational treatment, since the abscess cavity either cannot be safely reached, or if reached, is with difficulty cleared out and drained. These considerations have so influenced gynæcologists that the great majority of them in such cases are content with expectant treatment, although the feasibility and safety of opening the abdomen, searching for, emptying, and draining such cases has been proved by Mr. Lawson Tait and others. The pelvic abscesses referred to below have nothing to do with lumbar, psoas, and other collections of pus, which have distinct origins outside the pelvis, but are to be considered as mere sequels to certain diseases, such as pelvic cellulitis, pelvic peritonitis, and hæmatocele, or to ovaritis, salpingitis, or breaking down of tubercle. Every surgeon knows the course pursued by such collections, their tendency toward continuous or intermittent evacuation into hollow viscera, either vagina, rectum or bladder ;

or by long circuitous fistulæ on the surface ; the violence of the inflammatory storms which occur at irregular intervals after a delusive period of quietude ; the condition of impotency or infirmity in which they leave women, even after a spontaneous cure, which always demands a very long time ; and their frequently fatal termination either by the pus bursting into the peritoneum and setting up acute peritonitis, or by the constant discharge bringing on hectic fever ; or more indirectly by the supervention of tuberculosis or amyloid degeneration. There are some fortunate cases where the abscess, projecting into the vagina, allows an opening to be made and drainage to be effected, but these are exceptional ; in the greater number it is impossible to discover by the touch a fluctuating point in the hard plastic mass which fixes the uterus. Even if the abscess can be opened by the vagina or rectum, it is a most difficult matter to keep the cavity aseptic and to secure efficient drainage. If, then, expectant treatment is so unsatisfactory, what other means have we at our disposal ? Firstly, *aspiration*, which according to Mundé is a successful mode of procedure. In several cases where there have been small and localized abscesses, I have found this simple method efficient, but it is uncertain in large, and useless in multiple, abscesses, and its indiscriminate use is not unattended with danger, for it must be borne in mind that important structures often overlie the tumor and have to be pierced before it can be reached. Secondly, *sub-peritoneal laparotomy* as performed and advocated by Dr. Pozzi of Paris. It would seem to me, however, that this method can only have a very limited application, and can only be safely adopted where there are signs of the abscess approaching the side of the pelvis. And lastly, *abdominal section*.

Intraligamentous Ovarian Cystoma.—A most instructive and interesting paper upon this subject is reported in the *N. Y. Med. Record* of April 15th, 1890, by Dr. Skene of Brooklyn. The author begins by pointing out the difference between these cysts and the ordinary ones, being simply that of the position they occupy in relation to the broad ligaments. The two theories which are advanced to explain the topographical anatomy of

intraligamentous cystomata are: *First*, owing to error of development the ovary during embryonic life finds its way into the folds of the broad ligaments and there remains. *Second* theory is that during the growth of the cystoma it burrows into the folds of the ligament and pushes them apart causing them to form a ligamentous capsule over it. Again, where a cyst develops deep in the substance of the ovary and meets resistance on the free peritoneal surface, it also pushes its way in between the folds of the ligament. These cystomata which spring from the deeper structures of the ovary are the ones which Bland Sutton of London has written about as originating in the paroöphoron, and which are generally papillary or proliferous cysts. These papillary cysts may be single or double, but Dr. Skene's experience proves them to be, in the majority of instances, single or monocysts. In regard to position of these cysts, the author states that in some the tumor was in one ligament displacing the uterus and bladder to the opposite side of the pelvis. The tumor in other cases occupied a position in both ligaments and between the uterus and bladder. When thus located the tumor, uterus and bladder were found high up out of the pelvis, so that the most dependent portion of the tumor could not be felt through the vagina. Again, the tumor has been behind both uterus and bladder and yet between the folds of both ligaments. In these latter cases the pelvic organs were carried high up into the abdominal cavity while the tumor descended deep into the pelvis. From these facts a general rule has been established as follows. When the tumor is between the uterus and bladder all three rise up into the abdomen, whereas if the tumor is behind these organs it dips down deeply into the pelvis. When, therefore, a cystic tumor in the abdomen is firmly fixed below, with no history of inflammation during the early states of its growth, and the uterus is drawn up out of the pelvis and lies behind or in front of the tumor, the author suspects that it is intraligamentous. If the uterus is displaced to one side in a marked degree and the tumor dips low down into the pelvis, the facts point to the same conclusion. When a portion of the tumor found in the pelvis is cystic and fluctuates, it is a great aid to

diagnosis, because proliferous cysts generally contain much solid material in their most dependent part, giving the appearance of a solid tumor, often mistaken for fibro-cysts of the uterus.

When an intraligamentous cystoma is exposed by laparotomy its appearance resembles closely a uterine fibroma, and owing to the thickness of its walls it feels to the single touch like a fibroma. Fluctuation, however, sets this question aside, and tapping will decide by virtue of the nature of the fluid.

Dr. Skene enumerates the ordinary methods of treatment in these cases. Enucleation ranks first. This method, introduced by Miner of Buffalo, has been practised by many ovariologists. Enucleation is adapted to all cases in which the cystoma descends into the pelvis completely separating one or both ligaments. This method will succeed in all cases unless the cyst wall has become united to the folds of the ligament by inflammatory action or the cyst wall is thin and friable. The technique of enucleations is as follows. The cyst should be tapped high up so as to avoid wounding the thickest portion of the broad ligament. To do this it is sometimes necessary to enlarge the abdominal incision. The cyst being emptied and drawn well out of the wound, the separation should be begun at the highest and thinnest point of the cyst. The dissection should at first be accomplished with the knife handle, but as we get near the base the fingers will be found the best aid. It is now necessary to make traction *only* on the cyst wall, not on the separated folds of the ligament, which are easily lacerated. During this dissection much oozing occurs and some large venous vessels may be torn. These should be controlled by hot sponges, forceps, ligature, styptics or gauze packing, according to the operator's judgment. The management of the cyst capsule now requires treatment. The upper portions of it should be folded inwards into its cavity so as to bring the peritoneal surfaces together, and fixed there by a continuous catgut suture. The capsule should now be brought to the lower angle of the wound, united to it, and a drainage-tube inserted.

Dr. Skene speaks of another method adapted to those cases in which the cyst is situated in one broad ligament and does not

dip very low down. This condition means a broad pedicle, and should be ligated with the chain ligature. The author describes the method of applying this ligature, but he makes a very serious mistake in the description. Instead of passing the second ligature through the one already tied, it and all the others should be passed, their respective ends clipped in a separate forceps to prevent them getting entangled; they should then be tied. The reason for adopting this method is obvious without explanation. The cyst and its capsule are then cut away and the pedicle dropped. In adopting this method the author draws attention to the danger of including the ureter in the ligature, which should always be borne in mind. He also speaks of the combined method—*i.e.*, first enucleating the cyst and then ligating the capsule or pedicle. The ureter, by this method, is less liable to injury.

Dr. Skene, in concluding his paper, refers to cases where neither of the methods mentioned can be carried out. These are cases of cystomata deeply buried and adherent in the pelvis which have undergone suppurative inflammation, and containing highly infective pus. Such cases are very difficult to manage, and are highly dangerous on account of the liability of infective matter to escape from the cyst into the peritoneal cavity. The only safe way to operate is to attach the cyst to the abdominal wall by sutures and evacuate the contents, keeping up as perfect a drainage as possible until the cyst has ceased secreting from its inner surface. If this should be prolonged, curetting or injecting the cavity with iodine or carbolic acid has obtained good results in the author's hands.

In reporting rather minutely upon the salient points of Dr. Skene's paper, I feel there is no apology needed. It is a dissertation of the highest value to specialists engaged in this work, and what makes it especially so in this instance is that it is a statement of the experience of one of the most honest and astute observers of the present day on our continent.

Correspondence.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

SIRS,—It has occurred to me that the following cases of antifebrin rash may prove worthy of record :

The first case was one of pneumonia in a man of 45 years of age. Two 8-grain powders of antifebrin were prescribed, the second one to be taken four hours after the first. Profuse perspiration with lowering of the temperature to the extent of two degrees followed the administration of the first powder, but half an hour after the powder had been taken a slight erythematous rash appeared upon the face and chest. In four hours two-thirds of the other powder was taken, and was followed by profuse perspiration and another lowering of the temperature, this time to 100°. The rash, which had begun to fade before the administration of the last powder, now returned with greater intensity, extending over the whole body and being distinctly erythematous, with urticarious patches interspersed over the face and forearms. The rash remained out for six days, and was intensely itchy.

The second case was that of a girl, aged 19, who had typhoid fever, and whose temperature was 104.8°. Six grains of antifebrin were given. Profuse perspiration. The temperature was reduced to 103°, but a distinctly urticarious rash appeared upon the chest and forehead within half an hour, and remained visible for two hours. In four hours from time of first dose five grains were given. The rash immediately returned, with the perspiration, but with greater intensity. Temperature reduced to 101°. The rash was distinctly of an urticarious nature, and in wheals, extending more particularly over chest, face and forearms ; also on chest and forehead there was a slight rash resembling measles, but this latter soon disappeared, the urticaria remaining out for five days, then gradually fading away. There was intense itchiness.

Yours truly,

O. E. MOREHOUSE.

June 23rd, 1890.

Reviews and Notices of Books.

A Text-Book of Medical Physics for the Use of Students and Practitioners of Medicine. By JOHN C. DRAPER, M.D., LL.D. With 377 illustrations. Philadelphia : Lea Brothers & Co.

The author says in his preface : “ Broadly speaking, this work aims to impart a knowledge of the relations existing between physics and medicine in their latest state of development, and to embody in the pursuit of this object whatever experience the author has gained during a long period of teaching this special branch of applied science.”

While all enlightened physicians will agree that a knowledge of physics is desirable for the medical student, only those actually engaged in the teaching of the primary subjects can be fully aware of the difficulties encountered by students who attempt the study of these subjects without a knowledge of either physics or chemistry. These are especially felt by the teacher of physiology. It is, however, impossible for him to impart a knowledge of the main facts of his subject and establish them by reasons and experimental demonstration and at the same time undertake to teach *ab initio* the principles of chemistry or physics. Hence the desirability, we may say the necessity, for some such work as the present one.

No man in America was better fitted than Dr. Draper for the task he undertook, and he has provided the student and practitioner of medicine with a volume at once readable and thorough. Even to the student who has some knowledge of physics this book is useful, as it shows him its applications to the profession that he has chosen. Dr. Draper, as an old teacher, knew well the difficulties to be encountered in bringing his subject within the grasp of the average student, and that he has succeeded so well proves once more that the man to write for and examine students is the one who has taught and is teaching them.

The work is no mere skeleton or compendium so dry and destitute of educational value that it can serve no purpose but that

of assisting in cramming. On the contrary, it is interesting, and must stimulate and strengthen the mind of the reader. The book is well printed and fully illustrated, and in every way deserves grateful recognition.

On the Animal Alkaloids: The Ptomaines, Leucomaines, and Extractives in their Pathological Relations. By SIR WILLIAM AITKEN, KNT., M.D., LL.D., F.R.S., Professor of Pathology in the Army Medical School. Second edition. London: H. K. Lewis, 136 Gower st., W.C. 1889.

The subjects dealt with in this little volume are, though comparatively recent, of the greatest interest and importance in every day practice. The cardinal idea brought out "points (1) to the evolution of diseased states from retention in the body of its own 'excretions' and of the products of their decomposition; (2) to the consequences and direct issues of inadequacies of function. as regards especially the cutaneous, intestinal, hepatic, pulmonary and renal functions."

It is scarcely necessary to say that the work is in every way worthy of the reputation of its distinguished author.

Practical Electricity in Medicine and Surgery. By G. A. LIEBIG, JR., PH.D., Assistant in Electricity, Johns-Hopkins University, etc., and GEORGE H. ROHE, M.D., Professor of Obstetrics and Hygiene. Baltimore. Philadelphia and London: F. A. Davis. 1890.

As the title indicates, this work is eminently practical, and practical in the best sense of that term. In the application of electricity to the diagnosis and treatment of disease it is essential that the practitioner should be conversant with the leading facts known about electro-physics and electro-physiology. These subjects are dealt with in the volume under consideration in a very clear, concise and able manner. The application of electricity to the treatment of disease is considered in the third part of the volume, and fully and fairly represents our present knowledge of this subject. The work is profusely illustrated.

De la Grippe et de son Traitement par le Sulfate de Quinine. Par le DR. P. GELLIE. Bordeaux, 1890; pp. 45.

The author of this pamphlet, which is a reproduction of a paper read at the Société de Médecine et de Chirurgie de Bordeaux, recapitulates the history of influenza, and concludes that the epidemic through which we have just passed is not a form of dengue as many suppose. Three forms of the disease are recognized—the nervous, the thoracic, and the gastro-abdominal—in all of which sulphate of quinine is said to have acted with great effect and certainty as a neurasthenic and antiseptic of the first order, shortening the duration of the disease and preventing the development of serious symptoms. Some carefully noted histories in support of the statements made by the writer are added.

The Neuroses of the Genito-Urinary System in the Male, with Sterility and Impotence. By DR. R. ULTMANN, Professor of Genito-Urinary Diseases in the University of Vienna. Translated by GARDNER W. ALLEN, M.D., Surgeon in the Genito-Urinary Department, Boston Dispensary. Philadelphia and London: F. A. Davis. 1889.

Dr. Allen has performed a very useful piece of work in making known to English readers the rich mine of true clinical work contained in the late Prof. Ultzmann's articles on the genito-urinary organs. The translation is well executed.

The Extra Pharmacopœia, with the Additions introduced into the British Pharmacopœia, 1885. By WILLIAM MARTINDALE, F.C.S., late Teacher of Pharmacy and Demonstrator of Materia Medica at University College. Medical References and a Therapeutic Index of Diseases and Symptoms by W. WYNN WESTCOTT, M.B., Deputy-Coroner for Central Middlesex. Sixth edition. London: H. K. Lewis, Gower street. 1890.

The sixth edition of this useful work more than sustains its well-deserved reputation. Full directions for the administration of the recently introduced drugs are given.

Society Proceedings.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

Stated Meeting, 18th April, 1890.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Aneurism of Arch of Aorta.—DR. JOHNSTON exhibited this specimen. The sac had a position backwards to the right of the median line; the whole arch and the vessels arising from it were very much dilated, and only loosely attached to the trachea.

DR. FINLEY, who had examined the patient during life, said that he had complained of nothing of a definite nature—no pain, no pressure symptoms, and no tugging at trachea. There was a limited area of dulness over the aortic cartilage, and aortic regurgitation was present. It was extremely interesting to note that so large an aneurism had given rise to neither objective nor subjective symptoms.

Intestinal Obstruction.—This specimen was removed by operation from a child who for two days had suffered from intestinal obstruction. The gut to the extent of one inch below the jejunum was found completely occluded, cystic in character, and contained small bodies like sago grains. It was thought that intussusception had occurred in early life.

DR. JOHNSTON exhibited for Dr. Fenwick the *Brain and Skull* of a man who had committed suicide by shooting. The entrance of the bullet was just above the right external angular process of frontal bone and its exit at the inner angle of left orbit. The right orbital plate was fractured; the antrum of Highmore, on the same side, was in a state of suppuration; the right eye was in a condition of panophthalmitis. Brain matter had oozed out from the entrance wound. Left hemisphere not touched.

Perforating Ulcer of the Stomach.—The PRESIDENT exhibited the specimen. In anterior and posterior walls, directly opposed to each other, is a small ulcer, half an inch in diameter, which has completely penetrated the coats of the stomach. There is no zone of hyperæmia about either ulcer. The right ovary is cystic, its walls gangrenous, and enclosing a recent blood-clot.

The history of the case is as follows : A young woman aged 18, after attending a ball, was suddenly seized with abdominal pain, followed by general peritonitis. Temperature 103° ; pulse 150. Next day the heart's action began to fail and the abdominal distension increased. Decided to perform abdominal section by an incision in the right iliac region. Upon opening abdomen there was a great escape of flatus without odor ; the upper part of abdomen remained even now distended and the lower zone quite flaccid. A little pus was found on visceral layers of the peritoneum. No fæces free in abdominal cavity. The appendix was free and not inflamed, but filled with fæces, and a few seed-like bodies felt to be contained therein ; the appendix was removed. Although the patient's condition improved temporarily, yet seven days later she died from general peritonitis. At the autopsy, in addition to the condition of the stomach and ovary already described, it was found that the abdominal cavity was divided into two by the adhesion of the transverse colon to the anterior abdominal wall ; the upper cavity contained a fluid dark in color and grumous in character ; the lower cavity showed presence of recent lymph, the intestines being matted together. The former condition explains why the abdomen still remained distended above after the abdominal cavity had been opened. The previous history of the patient was good ; she was anæmic, well nourished, and at times suffered from indefinite dyspeptic symptoms. No vomiting ; no hæmatemesis.

Discussion.—DR. BELL thought from the history that the original source of the trouble had been from the ovary, and that the ulcers had perforated only when the vital powers had been reduced to a low ebb.

DR. SHEPHERD asked why, if the appendix were not diseased, it had been removed ? He thought that the ulcers probably originated *post-mortem*, as there was no plastic exudation about them.

DR. ALLOWAY said that cases of sudden rupture of the ovary of this nature were very apt to occur in anæmic girls. Were the ovary the exciting cause of the peritonitis, why had there not been more inflammatory reaction in the adjacent structures ?

He did not understand why Dr. Armstrong had selected the lateral operation.

DR. ARMSTRONG, in replying, said that he had selected the lateral operation because it seemed to him that the appendix on that side was the offending body, and had, when reaching it, removed it because it was full of feces and was felt to contain sago-like grains. He thought that the perforation of the stomach was a very late accident, as the patient continued to take nourishment by the mouth without rejecting it.

DR. JOHNSTON exhibited for Dr. DeCOW a specimen of perforating ulcer of stomach. The ulcer was situated on the posterior wall, about half an inch in diameter. There was recent lymph outside and about the perforation.

DR. DECOW said that the patient had, up to two days before death, enjoyed good health, but at that time had partaken freely of hard-boiled eggs and beer, the urgent symptoms developing two days later.

DR. MCCARTHY said he had seen this patient in consultation, and had confirmed the diagnosis. He would only ask, "Could anything be done surgically in these cases?"

Necrosis of Tibia.—DR. JOHNSTON exhibited the specimen, showing two large areas of dead bone extending from the medullary cavity to the anterior surface. The outer surface of one of these areas had sloughed, and appeared to be undergoing absorption. The whole bone was extremely dense and the medulla almost obliterated.

Colloid Cancer of Bladder.—DR. JOHNSTON gave the following report of the autopsy on this case:

M. J., aged 32; body of a well-built man; slight dropsy of feet; laparotomy scar above pubis; extensive scar and small urinary fistula in perineum. On opening abdomen, the anterior half of pelvis completely filled by a hard nodular mass, which has infiltrated all the tissues in the neighborhood of the bladder. Pelvic organs removed with ureters and kidneys. Lymph glands about brim of pelvis are greatly enlarged, of gristly consistency, and on section cut surface is translucent, showing distinct large alveoli filled with colloid substance. The bladder wall is thick-

ened to three-quarters of an inch, is extremely hard, and shows the same colloid change. The cavity of the bladder is about the size of a hen's egg. The walls cannot be distended nor made to collapse. The mucosa is everywhere ragged and sloughing. At the fundus is a fungating nodule as large as a walnut, having the appearance of boiled sago when cut into. The wound in the urethra has cicatrized, with the exception of a small fistula, and there is no infiltration about it nor about the neck of the bladder. The ureters are considerably distended, and their orifices appear to be completely obstructed from the infiltration at the base of the bladder. The pelvis of each kidney is greatly distended, but the calices are only slightly dilated, and the papillæ are still prominent. The kidney substance is intensely anæmic. The lungs are oedematous at the bases and show small areas of broncho-pneumonia. No secondary cancer anywhere in the organs. Microscopically the growth is seen to consist of thick-walled fibrous stroma arranged in large alveoli. In nearly all of these alveoli the cells have undergone colloid change, and at one spot the stroma appears to be infiltrated with a similar substance. A point of special interest is the fact of the cancer being of the colloid variety. At what period in the history of the case this change first commenced it is impossible to say. I examined the urine several times about four months before the man's death, but failed to find any fragments of cancer. From the appearance of the inner surface of the bladder at the time of the autopsy there can be no doubt that such fragments were passed in abundance, but were probably overlooked by me, because I had not thought of the possibility of their being colloid. Unfortunately, a piece of tissue removed for examination when the bladder was explored (in November, 1889) was lost instead of being sent to my laboratory.

In the absence of Dr. Praeger of Nanaimo, the Secretary read the paper on *Cholecystectomy*, a full report of which appeared in the June number of this JOURNAL.

DR. BELL related a case of symptoms of belladonna poisoning in an old man, due to the application of a belladonna plaster to the back.

DR. SHEPHERD mentioned a case in which an acute attack of eczema invariably followed a single dose of five grains of citrate of iron and quinine.

Selections.

ON THE AMCEBA COLI IN DYSENTERY AND IN DYSENTERIC LIVER ABSCESS.

BY WILLIAM OSLER, M.D.,

Professor of Medicine, Johns Hopkins University.

The first observation on rhizopods, as human parasites, was made by Lamb in the year 1859, who found in the mucus of the bowel in a child dead of enteritis, amœboid bodies and other rhizopods belonging to the *diffugia* and *arcella* types. Leukart doubts whether these forms could be definitely regarded as parasitic. The first satisfactory studies on the subject were made by Losch of St. Petersburg, who found the parasites in the stools in a case of ulcerative inflammation of the colon. They were in extraordinary numbers and presented all the characters of amœbæ. The movements were extremely active, and the elaborate description which he gives might have been written from a study of the specimens in which we have here been interested. He injected the stools containing amœbæ into the rectum of three dogs, in one of which, at the end of eighteen days, the amœbæ were found in large numbers in the mucus of the bowel and at the basis of a small ulcer which had formed.

Kartulis, stimulated by the observations of Koch, who found, during his cholera investigations in Egypt in 1883, amœbæ in sections of the intestines of persons dead of dysentery, examined 150 cases in a period of two years, and in every one found these organisms in the stools. In twelve post-mortems the amœbæ were present in the ulcers in every case.

They were present in all stages of the disease, in both acute and chronic cases.

He has extended his studies on this question to the liver abscesses, which occur so often in cases of dysentery. In an examination of twenty liver abscesses he found the amœbæ in

sections of the walls in every case. In one instance he found a living amœba in the pus of the abscess, examined fresh after death. They presented the same characters as the parasites which he had found in the large intestines. In *Virchow's Archiv*, Bd. 108, he gives a fuller account of his observations. He has met with the parasites in more than 500 cases of dysentery, and in all the cases of liver abscess due to this disease which he has examined. In thirteen of twenty-two instances of these abscesses cultures were made, eight of which were negative; in three there were *staphylococci*, in one the *bacillus fœtidus*, and in one the *proteus vulgaris*. He holds that the amœbæ, which exist in all the layers of the intestines in dysenteric ulceration, pass with the micro-organisms and detritus through the portal veins to the liver. The micrococci excite the suppuration, but only in consequence of the lesions induced by the amœbæ. The pus seems to die rapidly in the abscesses, but the amœbæ remained alive for a much longer period, often over two months. Histologically, Kartulis describes three zones in the abscess wall,—first, the detritus zone, containing fibrous granulations and amœbæ; second, the cell zone, consisting of young cells which stain deeply and between which can be seen portions of liver tissue, liver cells and capillaries; and third, the limitation zone, separating the disease from the intact liver tissues. His most recent communication is in the *Centralblatt für Bakteriologie*, No. 2, 1890, in which he reports two cases of dysentery which had originated in Athens, in both of which amœbæ were present in the stools, similar in character to those met with in the Egyptian dysentery.

Massiutin has studied this question under Losch's supervision. He has found the parasites in five patients,—one, a case of chronic dysentery of seven years standing; the second, a man with chronic intestinal catarrh; a third, a case of typhoid fever with late diarrhœa and much mucus in the stools; the fourth and fifth were cases of diarrhœa with fluid mucoid stools. The amœbæ presented active movements and seemed to have the same characters as those described by Kartulis. He doubts their connection with the intestinal condition. He thinks that

they gain access to the intestine through the water and find in the mucus of the colon situations suitable for their growth.

Baumgarten comments as follows upon the view of Kartulis that the amœbæ constitute the exciting agents in the disease. "We will not contradict this view, although, as many old and recent observations show, very similar amœboid forms occur in other intestinal affections and even in normal fæces. We regard it, however, as unlikely that the amœbæ could induce all of the conditions in the dysenteric processes. Dysentery consists anatomically in a combination of diphtheric and purulent inflammation, which induces rapid and deep ulceration of the affected part. We have no analogy to show that amœboid parasites can induce ulceration, and we rather believe that the pyogenic microorganisms, well known as exciters of ulcerative processes, are concerned with the amœbæ in the causation of tropical dysentery."

This practically embraces the entire literature of the subject. I had, after the publication of Kartulis' paper, made several examinations in Philadelphia with negative results. During a visit to the Hospital, Dr. Lutze, last October, stimulated our interest in the matter, as he stated that he had frequently met with the parasites in tropical dysentery. We have since had opportunities of examining several instances of the local dysenteric attacks, and in one case we thought we had found the parasites, but we were not very confident. Recently, however, a case has been under observation in which the amœbæ have been found, not only in the stools, but in enormous numbers in the pus of abscesses of the liver. The details of the case are as follows:

Dr. B., aged 29, resident in Panama for nearly six years, where he had had several severe attacks of dysentery, or indeed, more correctly speaking, a chronic dysentery, came north in May, 1889, and after remaining for a short time at his home in Baltimore, went to Germany. He had intervals of freedom from the diarrhœa, but in Vienna it recurred severely. He returned to this country in December, and shortly afterward began to have an irregular fever with occasional chilly sensations and sweats, to lose flesh, and to have a very sallow complexion.

These symptoms persisted through January, and about February 15th I saw him in consultation with Dr. Friedenwald. His general condition was very good, considering that he had had severe dysentery and an irregular fever for more than two months. The liver was slightly enlarged anteriorly, but not specially sensitive. Posteriorly, there seemed to be a very distinct extension of the dulness upward. He had six or eight mucoid stools with traces of blood daily. I saw him subsequently on four occasions and the symptoms remained practically the same. The temperature rose each day to about 103° . There were no positive chills, but occasionally toward the afternoon he complained of sensations of cold. The diarrhoea lessened and his appetite improved, but in spite of this he had lost flesh and strength. Anteriorly, the liver dulness was not much increased, but behind it extended nearly a hand's-breadth above the normal limit. There was distinct sensitiveness on deep pressure below the edge of the right costal cartilages, and he complained of a dragging pain whenever he turned upon his left side. The suspicion entertained at first that he had abscess of the liver was gradually confirmed, and on March 22nd Dr. Tiffany aspirated, and then incised and drained two large abscess cavities in the right lobe of the liver. The pus was thick, of creamy consistence, in color, in places slightly bile-stained, but it had not the reddish-brown and anchovy-sauce-like appearance presented by the pus in many cases of hepatic abscesses.

I made an examination of the pus at the Biological Laboratory, within three-quarters of an hour of its withdrawal, and found in it, in large numbers, the amœbæ which Kurtulis had described. The material was taken at once to the Pathological Laboratory, where Prof. Welch and Dr. Councilman confirmed the observation. On each succeeding day, at the time of dressing, pus was removed from the drainage tube before irrigation was begun. On the first two days the amœbæ were quite numerous and very active. For the three following days they were still found, but moving forms were not so common, probably owing to the fact that stronger solutions of bichloride were used for irrigation. Subsequently they were very numerous, and we found them each

day in the pus as it came from the drainage tube until his death on April 5th.

After the operation the dysenteric symptoms did not abate in the slightest; he continued to have from eight to sixteen movements daily. They varied a good deal in character; some were entirely mucoid, streaked here and there with pus and presenting a few grayish shreds. Some were made up of a greenish, pultaceous mass, in which, on several occasions, there were large irregular sloughs. These mucus stools were usually slight in amount. Occasionally there was a large brownish liquid evacuation, in which could be seen small grayish-white masses embedded in blood-stained mucus. On each day there were found in these stools many characteristic examples of the amœbæ. They were most abundant in the small grayish-white shred masses, which in some places seemed almost infiltrated with them.

Description of the Amœbæ.—(1) From the liver. The size ranged from 10 μ . to 20 μ ., which appears to be somewhat greater than indicated by Kartulis. When at rest the outline was usually circular, occasionally ovoid, but when in motion they presented, as shown in the figures, the extreme irregular contour of moving amœboid bodies. The protoplasm could be distinctly differentiated into a translucent homogeneous ectosarc or motile portion and granular endosarc containing the nucleus, vacuoles and granules. The hyaline ectosarc was, as a rule, very distinct, and in many examples the granular protoplasm of the interior was surrounded by it as a distinct rim. Occasionally a form was seen in which this portion was much less developed and the greater part of the organism seemed composed of granular substance. Within the endosarc, the vacuoles constituted the most striking feature. Sometimes the interior substance appeared to be made up of a series of closely set, clear vesicles of pretty uniform size. As a rule one or two larger vacuoles were present, the edges of which were not infrequently surrounded by fine dark granules. I never saw a true contractile vesicle which displayed rhythmical pulsations but the larger vacuoles underwent at times changes in size. The nucleus was plain enough in some examples, in others very difficult or impossible to detect. It was usually

pale, ovoid or rounded in outline, and with a very delicate contour. No distinct nucleolus was seen, though there were sometimes coarser granules which possibly represented it.

When once recognized, there was not the slightest difficulty in distinguishing these bodies, even when at rest, from the pus elements, not only by their size but by the entirely different appearance of the protoplasm. The movements, however, constitute their most interesting and distinctive feature. From any portion of the surface, a rounded hemispherical knob would project and with a somewhat rapid movement, the process extended and the granules in the interior streamed towards it. As in the pond amœbæ, the clear ectosarc seemed to initiate and play the important part in the movements. Though sometimes slow, many examples were found in which the alterations in contour and the change in locality were quite as striking as in the large active forms of pond amœbæ. The processes were always rounded, never angular or linear as in the white blood corpuscles. Motile forms were found each day in the pus during his life. They seemed at times more active apparently than at others, and the movements went on at the average laboratory temperature, but seemed increased by heat. They continued active for hours at a time. Twice the movements were observed to continue in the same organism for more than ten hours.

(2) The amœbæ from the stools. During the month or more in which the patient was under observation the diarrhœa was a marked feature. Tenesmus was rarely present, and the frequency of the stools was from four to twelve in the twenty-four hours. The character varied very much. Sometimes he had a large brownish fluid evacuation with little or no mucus; more frequently three or four ounces were passed at a time, and, scattered through the brownish liquid mucus, blood and small whitish sloughs could be seen. On several occasions the stools seemed to be made up of a gelatinous mucus streaked with blood, and twice large grayish sloughs were found. Experience showed that the amœbæ were rarely found in the brownish liquid stools. In the mucus they were more frequent, but they were met with in large numbers only in the small grayish fragments, portions,

no doubt, of sloughs which were present in variable numbers in almost every mucoid stool.

The general character of the amœbæ corresponded in every particular with those found in the liver. A greater variation, perhaps, in size was noticed, but in the appearance of the protoplasm, the character of the movements, and the arrangement of the vacuoles, no essential difference was noted.

It is impossible to speak as yet with any certainty as to the relation of these organisms to the disease. The subject is deserving of extended study, and a point of special interest will be the determination of their presence in the endemic dysentery of this country.—*Johns Hopkins Hospital Bulletin.*

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On the Surgical Treatment of Tuberculosis of the Pleura and Lung. (By Prof. Tillmanns, M.D., Leipzig.)—At the Congress of German surgeons held this year at Berlin, I showed a patient whom about two years previously I had completely cured of severe tuberculosis of the left pleura and left lung by extensive resection of the front part of the left chest wall. The tuberculosis of the left pleura and left lung was made accessible for purposes of local surgical treatment by removal of the fore part of the left chest wall, which was also affected with tubercular disease. The heart was displaced to the right behind the sternum as the result of an empyema of more than two years standing. After the cure of the tuberculosis of the left pleura and the left lung, I converted the left pleura into a cutaneous cavity by transplantation of skin according to Thiersch's method. The healthy right lung and the heart, which still remains displaced to the right, now act so well that the patient, in spite of the loss of his left lung, has since about September, 1888, been able to attend to his business as a merchant quite in the same manner as before. My observation is also of interest with reference to the operative treatment of tumors and other diseases of the pleura and lung. The editor of the *British Medical Journal* has invited me to report on the case to which I have referred. I hereby very gladly

comply with the request, and I propose to add some remarks on the surgical treatment of diseases of the lung and pleura.

In the first place, with regard to the history of the above mentioned case, the following are the chief points. The patient, who is now 28 years of age, came under my care on April 19th, 1888. He presented the appearance of one in the last stage of phthisis. The left lung was phthisical to a high degree, the pleura being firmly adherent in its upper third; in the sputum numerous tubercle bacilli were found. In the two lower thirds of the left pleural cavity there was an empyema which had been in existence for two years and a half; several fistulæ traversed the left front chest wall, which was also the seat of tubercular disease. As a result of the left-sided empyema, the heart was dislocated to the right behind the sternum. The right lung was comparatively healthy, and acted well. In the middle of October, 1885, the patient became affected with serious left-sided empyema, and after that time (that is to say, for more than two years and a half) he was, with few exceptions, confined to his bed.

In November, 1885, about three litres of pus were removed by means of puncture (thoracocentesis). In September, 1886, and January, 1888, thoracotomy, with resection of a piece of rib at the lower and hinder part of the thorax, was performed by a practitioner in Saxony. When the patient came under my care in April, 1888, I first sought to cure the existing left-sided empyema by means of extensive rib resections—from the second to the sixth rib on the left side in front, and of the seventh, eighth, and ninth ribs on the left side behind—of course with slight hope of success, since the left lung was already the seat of serious tubercular disease. As the patient was becoming steadily weaker, and had no prospect but that of a speedy certain death before him, I determined to expose the tuberculosis of the left pleura and left lung by extensive resection of the anterior part of the tubercular left chest wall—ribs as well as soft parts—and subject it to energetic local treatment. In this manner the left lung would certainly be placed completely, and probably for ever, *hors de combat*, and the patient would have to be contented with the work of his right lung alone. But the left lung was

extensively diseased, and had been functionally incapable for months, and the patient had, in fact, been for months entirely dependent on his healthy right lung. But too long waiting the right pleura and right lung would also become tuberculous. On May 27th, 1888, therefore, the front part of the left chest wall, tuberculous and riddled with fistulæ as described, was resected *in toto* for an extent of from 5 to 12 centimetres, from the second to the sixth rib, close to the left sternal border. The breadth of the portion of the thoracic wall removed was 5 centimetres at the upper part; it became wider from above downwards, and measured 12 centimetres in breadth at the lower part. The whole of the left pleura was tubercular to a high degree; the left lung was phthisical and only as large as a man's fist, and was firmly adherent at the level of the first rib. The left lung was partly covered by a pedunculated skin flap taken from the thorax, in such a manner, however, that it remained accessible to local treatment. The left pleura was energetically scraped with a sharp spoon, and then stuffed with iodoform gauze. On June 22nd the left pleura, after repeated previous scraping with the sharp spoon, was converted into a cutaneous cavity by transplantation of skin according to Thiersch's method. Local treatment of the left lung proved unnecessary in the further course of the case. The organ shrank together steadily more and more, and the tuberculosis, of which it was the seat, underwent a process of spontaneous cure in consequence of this shrinking. The patient was discharged cured on July 23rd, 1888. He has remained quite well up to the present time. He can attend to his business as a merchant as before his illness, and presents a blooming appearance. When I saw him again for the first time some time ago I did not recognize him at the first glance, so stout had he become. The left lung, entirely collapsed, can be felt in the upper part of the left side of the thorax, at the level of the first rib behind the flap of skin which partly covers it; it is quite inactive. The right lung is absolutely healthy; the heart is still displaced to the right. The left pleura is a skin cavity of the size of a man's fist and covered with epidermis. In speaking and on deep inspiration the mediastinum is arched to the left.

At the lower part of the mediastinum—that is, the median wall of the skin cavity—the movements of the heart can be seen and felt. The strength and movements of the left arm are not impaired, but perfectly normal.

I recommend that in similar severe cases of one-sided tuberculosis of the pleura and lung the same procedure should be adopted as I carried out in the case related—that is to say, the seat of disease should be exposed sufficiently for local surgical treatment by free resection of the chest wall in front or behind. In suitable cases the performance of a temporary resection of the chest wall may be recommended. A pedunculated flap of skin and bone is formed, and turned back, and afterwards when the disease of the pleura and lung is cured, the thoracic coverings are replaced in their original position. One can also proceed in such a manner that, after extensive resection of the ribs, the soft parts in the chest are divided in the direction of the lung, the two flaps of soft tissues drawn apart with wound hooks, the pleura and lung subjected to adequate local treatment, and then the soft tissue flaps united to the pleura by compression. In my above related case I was obliged to remove the anterior part of the left chest wall *in toto*, as it also was extensively diseased.

Our case teaches further, in my opinion, the manner in which unilateral tumors of the pleura and lung may best be removed. In these cases, likewise, the pleura and lung should be exposed by total or temporary resection of the chest wall or by resection of ribs with division of the soft parts of the thorax in the direction of the lung; and then later on, by a second operation, the diseased lung, which is by this time collapsed, should be removed, and the tumor extirpated or destroyed with Paquelin's thermo-cautery.

Recently I have also treated pulmonary phthisis by injections of iodoform glycerine and iodoform oil. I use 10 per cent. sterilized mixtures of iodoform glycerine or iodoform oil, which I inject into the lungs to the amount of five grammes, with anti-septic precautions, through an incision in one of the intercostal spaces. I have not found it advantageous to inject more than

five grammes. At first I made the injections under chloroform narcosis; now I make them without an anæsthetic. Beyond ordinary dyspnoea, which quickly passes away, I have seen no injurious effects. I always make the injection into one lung only, never into both at the same time. I usually perform the injections at intervals of from one to two weeks; in slighter cases I make them every three or four weeks. With regard to the real advantages of these injections of iodoform into the lung I cannot as yet make any positive statement; I have not yet tried the method long enough, or in a sufficiently large number of cases. What I have seen up to the present, however, encourages me at all events to continue the treatment of pulmonary tuberculosis by injections of iodoform.—*Brit. Med. Journal*, June 14, 1890.

Myxoedema and Co-existing Exophthalmic Goitre.—In a critical review by P. Kovaleski of “Myxoedema or the Pachydermic Cachexia,” contained in the *Archives de Neurologie*, November, 1889, there is given an interesting history of this unfortunate combination. The patient, an only child, 46 years old, had the poorest kind of a chance in point of heredity. Her paternal grandfather was a drunkard, and died in an insane asylum. Her father committed suicide at the age of 25, a victim to melancholia. The mother was an epileptic. At 14 the patient talked and walked in her sleep, though strong and well during childhood. The girl married at 18, very unhappily. Three or four attacks of epilepsy a year (*petit mal*) began now to manifest themselves. At 24, one attack was followed by automatic acts, such as attending to household affairs, going out, making purchases, of which she had no recollection. Once or twice a year this happened; and when the woman was about 32 this psychic automatism became of longer duration, lasting eighteen hours, during which time she was irritable, quarrelsome, and even violent. She had hallucinations and moments of terrible anguish and anxiety. When 40 years old the patient left her husband, became poor, and began to earn her own living. Periodic tachycardia now set in, and later became violent and continued. In two years exoph-

thalmia appeared ; and eighteen months afterward, enlargement of the thyroid. She was sometimes better, sometimes worse, with frequent attacks of epileptic violence. During these attacks the symptoms of Basedow's disease were intensified, and became less pronounced when the seizures disappeared. The patient was carefully examined during a paroxysm of epileptic violence and the following conditions noticed : Feet and legs swollen from the ankles up to the knee ; skin stretched and dirty yellow in color, shining, and denuded of hair, cold and dry to the touch ; sebaceous and sudorific secretions absent. There was pitting or rather displacement on pressure, for the depression made by the finger disappeared when it was removed. The only heart symptom was acceleration of its beat (120-140). The urine was non-albuminous, of yellow tint, acid reaction, and containing a considerable quantity of urates (1015). Swelling similar to that in the feet existed in the cheeks and lips. The eyelids were much wrinkled, but not swollen. Hair on the head had become thin, and there was none whatever in the axilla. These symptoms, together with poverty of blood, insomnia, hallucinations of sight and hearing, manifestations of fear and terror, complete "absence," and a tendency to violence made up a picture of sufficient misery. This was succeeded by tranquillity in about three days. But her peaceful condition was not one of quiet, not post-epileptic depression. There was confusion of mind, indistinctness of speech, indifference, loss of facial expression, and general stupidity. Warm baths, galvanism (sub-aural), quinquina, small doses of arsenic, and somewhat energetic treatment, slowly brought about improvement. In three months all swelling had disappeared, and her psychic state became natural. What remained, however, were anæmia and exophthalmic goitre.

The patient stated that five or six months previous to this last attack she began to be so weak, broken and exhausted, that her only desire was to stay constantly in bed. Thinking was difficult, or, to be more exact, she had no desire to think. Physically, she was not ill. The temperature was subnormal, and weariness so great that walking or working became almost im-

possible. She would sit down anywhere, thinking of nothing, and completely broken up. The swelling of the hands was not always present. Without known cause she lost eight teeth during the second month of her illness. Appetite and digestion remained good. There was no perspiration or oily secretion. The tongue became swollen, the saliva abundant, sticky, and thick. The patient always complained of feeling cold, especially in the parts that were swollen. There was but slight change in the thyroid gland at any time. It was a little larger during the epileptic delirium.—*Journal of Nervous and Mental Disease.*

Effects of a Very Large Dose of Anti-febrin.—A number of cases have been recorded showing that even moderate doses of antifebrin or acetanilide may be followed by toxic symptoms, but no case has until now been reported in which nearly an ounce of this drug had been taken. It has generally been supposed that the toxic properties of acetanilide are due to the aniline from which it is manufactured, and it was therefore to be expected that the symptoms occurring in the two cases would be very similar. Dr. Hartge, of Dorpat, who has recently had ample opportunities of observing a case in which a student, who had caught cold, had dosed himself with with twenty-eight or twenty-nine grammes (nearly an ounce) of acetanilide, in addition to a considerable quantity of spirit, states that the symptoms only very partially corresponded with those mentioned by Dr. Dehio as due to poisoning by 154 grains of aniline, and which consisted in blue coloration of the skin and mucous membranes, profound coma lasting several days, irregularity and quickening of the respiration, acceleration of the pulse, the smell of aniline in the breath, loss of power of motion, considerable disturbance of the sensory powers, followed by jaundice, with anæmia, albuminuria, and hæmoglobinuria. It is probable that this aniline was by no means chemically pure, but contained several other substances, especially toluidine. In Dr. Hartge's case, notwithstanding the enormous dose of acetanilide which had been taken, a quantity which requires five-sixths of an ounce of aniline to make it, or more than twice as much as Dr. Dehio's

patient took, there was no loss of consciousness, of motion, or of sensation, no albuminuria or hæmoglobinuria, and only the slightest trace of jaundice; the blood corpuscles, too, presented their normal appearance and character, there being no detritus or specks of pigment, though the color of the blood was changed to a dark blue, as in aniline-poisoning; also the respiration was rendered rapid and irregular, and the pulse accelerated. The patient complained greatly of inability to sleep, and the cardiac palpitation and dyspnoea produced a feeling as of impending death. No medical aid was sought for many hours after the drug had been taken. When Dr. Hartge saw the patient first he was much struck by the marked blueness of the skin, which was general over the whole surface, but especially dark in the eyelids, the chin, and the temporal regions. There was no puffiness, as in severe cases of asthma, and the general appearance was quite different from that of cyanosis. Although there had been no vomiting, a glass of red wine was immediately brought up, and the stomach was soon afterward thoroughly emptied, a quantity of bilious matter being evacuated. The treatment consisted in giving sulphate of soda draughts, together with coffee and brandy; also hypodermic injections of camphor in ether, and cold compresses to the head. On the third day the patient was able to leave his bed, and the blue color had entirely vanished. In conclusion, Dr. Hartge, who had Professor Dragen-dorff's co-operation in working out the case, remarks that there is reason to believe that the acetanilide taken by the patient must have been a remarkably pure specimen.—*Lancet*, April 12, 1890; *Amer. Jour. of Med. Sciences*, July, 1890.

The Treatment of Vesical Calculus in Male Children.—In considering the treatment of vesical calculus in male children Dr. J. William White (*Medical News*, May 17, 1890) shows that the most powerful argument against the modern operation of litholapaxy—that is, the liability to recurrence—obtains mainly in the aged or in those suffering from marked pathological conditions of the bladder or prostate. In children the bladder is usually healthy and the prostate undeveloped. The urethra is proportionately as capacious as is the

case in the adult, and will generally admit, after meatotomy, a No. 16 (French) lithotrite. Among other objections to lithotomy may be urged the fact that there are reported cases of emasculation following the perineal cut, and that statistics show a greater mortality than obtains in the crushing operation. The author believes the following conclusions in regard to the choice of operation in male children justifiable:—

1. In every case of calculus in male children litholapaxy, on account of ease of performance, low mortality, speedy recovery, and absence of danger of emasculation, should be the operation of predilection, division of the meatus being freely resorted to if that portion of the urethra offers an obstacle to the introduction of instruments.

2. The lithotrite and evacuating tube should be of a size which can be inserted into the bladder without much effort or over-distention, and great gentleness should be observed in passing these instruments.

3. They should be withdrawn and reintroduced as seldom as possible, the stone being finely pulverized before the lithotrite is taken out at all. In seeking for or attempting to seize the stone, care should be taken to avoid such wide separation of the blades as will bring the male blade in frequent contact with the vesical neck. The crushing should invariably be done only after rotating the blades into the centre of the bladder. Every particle of the calculous dust should be evacuated.

4. Rest in bed, milk diet, and sterilization of the urine by boric acid or salol given internally both before and after the operation are valuable adjuvants. During the operation every antiseptic precaution should be observed.

5. The exceptional cases of calculi which are both large and hard may be best treated by suprapubic lithotomy, but neither unusual size nor a moderate degree of density should of itself alone be thought positively to contraindicate litholapaxy.

6. Perineal lithotomy has now a very limited field, and should be employed chiefly in those cases of stones thought to be of small or medium size in which no lithotrite, however small, can be introduced with safety.—*Amer. Jour. Med. Sciences.*

The Treatment of Wounds and the Choice of Material for Drains and Ligatures.—At the seventh reunion of the Italian Surgical

Society the subject of wound treatment and the choice of material for drains and ligatures was discussed by a number of the members. Bassini stated that the employment of sponges was unadvisable, not only on account of the expense, but particularly because of the difficulty of accomplishing through sterilization. Wads or compresses of moist cotton should also be rejected, since small threads of filaments are frequently left in the wound, and the same difficulty in accomplishing sterilization obtains as is the case in regard to sponges. He recommends balls of salicylated cotton packed in sterilized gauze, and purified by means of dry heat. In relation to the substances employed for ligature and suture, although catgut is to be preferred from the fact that it is homogeneous with the tissues of the living organism, unfortunately it cannot be sufficiently disinfected, since it will not withstand the action of heat. Silk, however, is very readily sterilized, and in general should be preferred to catgut. Drainage is indicated only in those cases where it is impossible to close pouches and diverticulæ by the approximation of their surfaces, accomplished by the buried suture, or where infection is imminent. As to the choice of disinfecting substances it is impossible to speak authoritatively, since no medium has yet been found which is satisfactorily efficacious against each particular form of infection. Gauze sterilized by dry heat and salicylated cotton to be applied immediately to the wound, with thick layers of non-medicated cotton placed over this, represent the best means of protecting wounds from post-operative infection.

Novarro, while conceding that sponges should not be employed, objected to the use of silk in buried sutures, and in cases of resection of the viscera. Here catgut is preferable. If previously sterilized in a solution of sublimate, 1:100, it will not give rise to infection. When there is imperfect hæmorrhage, or the formation of cavities cannot be avoided, tamponade with iodoform gauze, followed by secondary suture of the wound will give the best results.

Ceccherelli stated that the double cyanide of zinc and mercury used as a disinfectant has given good results. This substance is perfectly aseptic, and exercises neither a toxic nor an irritant action upon the tissues. Its antiseptic value has not yet been determined.

Corradi also objects to the use of sponges. He substitutes

them by gauze sterilized by dry heat. Where drainage is necessary, he prefers glass tubes, since these are readily purified. He has always attached more importance to the size of the suture or ligature than to its composition, since the smaller the thread the more readily is it rendered aseptic. For this reason he prefers silk, which he soaks for upward of a year in an alcoholic sublimate solution, 1:1000. This solution is renewed every two or three months. Alcohol is employed in place of water because the latter diminishes the strength and consistency of the thread. When it is necessary to use coarse silk this should be subjected to the action of moist heat for thorough sterilization of the central portions, afterward it may be preserved in the alcoholic and sublimate solution. Though dressings need not necessarily be antiseptic, they must be absolutely sterile; this Corradi accomplishes by subjecting them to a temperature of 38° F. for two hours. A quantity of gauze sufficient for the dressing is placed in a metallic box, this is hermetically sealed, is left in the oven for the required time, and is not removed from its box until the surgeon is prepared to apply it directly to the wound.—*Ibid.*

Lavage of the Peritoneal Cavity.—Delbet (*Annales de Gynécologie*, September, 1889) concludes, as the result of elaborate experimentation upon lavage of the peritoneum, that the liquid used for irrigation should penetrate to all parts of the peritoneal cavity. If it is desired to wash out Douglas's cul-de-sac the trunk of the patient can be elevated, and the intestinal coils which have not been involved in operation or smeared with blood or discharges can be protected by sponges. It is difficult, if not impossible, to free the peritoneum completely from the foreign substances which have entered its cavity by means of lavage. In case of escape of septic liquids into the peritoneal cavity, the operator should at first employ an aseptic irrigation, and this should be followed by one with antiseptic properties. After these irrigations there always remains a considerable quantity of liquid in the iliac and lumbar fossa. The temperature of the liquid used may vary between 64.5° and 122° F. without producing any marked effect upon either respiration or circulation. The temperature should, always be that of the cavity itself, though very hot irrigations have been

employed for their hemostatic action. That such effect is produced by them is extremely doubtful. During the first minutes of intraabdominal irrigation there is a very considerable quantity of the liquid absorbed; when a normal saline solution is used this practically amounts to a veritable transfusion. The peritoneal cavity may be washed by toxic substances without danger of general poisoning, provided the toxic irrigation is preceded for ten minutes by one of a solution of chloride of sodium of the strength of seven per cent. and is followed by a third lavage with the same solution.—*Ibid.*

Surgical Treatment of Local and of General Peritonitis originating from the Appendix Vermiformis.—

The subject of peritonitis, as caused by inflammation, and particularly by perforation of the vermiform appendix, is exhaustively considered by Dr. A. Krecke (*Deutsch. Zeitschrift f. Chirurgie*, Bd. 30, April 10, 1890). He states that the variety of appendix diseases which leads to peritonitis is the perforative. This perforation arises from ulceration beginning in the mucous membrane, which traverses the whole thickness of the intestinal coats and finally causes sloughing of the serosa. This ulcerative process is nearly always caused by the formation of concretions in the lumen of the appendix; rarely foreign bodies act in the same way. Where no cause for ulceration is found it is readily conceivable that a concretion might have been present, this having been washed away with the exudate.

It is well recognized that these perforations give rise to markedly different symptoms in accordance with whether they develop suddenly or are of more gradual formation. If the process is slow the peritoneal surfaces surrounding the inflamed area have time to form adhesions, so that when the opening into the bowels is finally accomplished, simply a circumscribed inflammation of the peritoneum results. When, however, there is a sudden perforation the contents of the appendix are freely distributed into the general peritoneal cavity, and as a result general peritonitis sets up.

It is to be noted that perforative peritonitis dependent upon disease of the appendix occurs, almost without exception, in individuals who were, up to the time of their attack, in good

health and in full possession of their bodily strength. It is self-evident that such an individual is far more able to endure, not only the exhaustive effect of the disease, but also the shock of an operation, than is one who has passed through a long period of exhausting disease. The outlook for success after operation is in the former most favorable.

A further noteworthy peculiarity in appendix peritonitis is dependent upon the anatomical relations of this portion of the intestines. For instance, if there is a perforation in any part of the small intestine, the free motion of this portion of the alimentary tract causes wide distribution of the intestinal contents, so that the infection of the peritoneum becomes at once general. The appendix, however, is far less movable than the small intestine or even the stomach itself; therefore, its contents, even if discharged, will be found only in the portion of peritoneum immediately circumjacent. It can also be readily seen that a much smaller quantity of septic matter can escape from an opening in the appendix than where the bowel itself is wounded.

Clinical facts strongly confirm the truth of these propositions, since in no portion of the abdominal cavity is local peritonitis more common than in the right iliac region.

In considering the inflammation of the peritoneum under discussion, a knowledge of the two forms described by Mikulicz is of great importance. Mikulicz states that upon perforation of the bowel, either the whole peritoneal cavity is at once infected, or the peritoneum lying immediately about the perforation is alone involved. The first form of general inflammation he calls diffuse septic peritonitis. This is characterized by a virulent course. The second form he names progressive fibrino-purulent peritonitis; in this the suppurative process slowly extends, the new masses of pus becoming successively encapsulated. From an operative standpoint, a distinction between these two different forms of peritonitis is of cardinal importance, since in the first an extensive opening of the belly, with elaborate disinfection and drainage, is indicated; while in the second every precaution must be taken not to disturb the adhesions which protect the general peritoneal cavity from the local process.

Another most important point in the consideration of appendix peritonitis, is the fact that the diagnosis is usually

made with great ease. Together with the general symptoms of peritonitis there is usually a history of pain beginning in the right iliac fossa. If the patient is a child, this is an additional reason for suspecting appendicitis, since the age of childhood is most prone to this form of perforative peritonitis.

From the foregoing points it will be seen that this form of peritonitis gives promise of far better results than can be hoped for from inflammation dependent upon perforations of other portions of the alimentary canal.

On first sight, it would seem that a careful review of the published cases might give us statistical results which would definitely determine the value of operation in these cases. Such a study can, however, be of little service, unless cases are reported with far more care than has hitherto been observed; for in making comparisons, not only must the form of peritonitis be clearly indicated, but the stage in which operative procedure was undertaken, since in the beginning of an attack the prognosis is far better than where the knife is used only as a last resort. Krecke records two operative cases ending successfully, one of general, the other of local peritonitis, and each dependent upon perforation of the appendix. He notes that the diagnosis was in each case easy, depending in the main upon the seat of pain and tenderness at the beginning of the attack, and being further corroborated by the fact that both patients were children.

Especial attention was paid, before operation, to determine whether or not there was free gas in the peritoneal cavity. The liver dulness was in one case completely abolished; nevertheless, on laparotomy, the presence of gas was not confirmed. This is a further proof of the fact that liver dulness can be made to disappear by meteorism. According to Leube, escape of gas can only be diagnosed when, on placing the patient upon his left side, tympanitic resonance is found occupying the normal area of liver dulness in the axillary line. The distinction between a diffuse septic peritonitis in one case, and a progressive fibro-purulent form in the other, was comparatively easy, since one exhibited in twenty hours the most violent symptoms of a general purulent peritonitis, while the other, after two days, showed symptoms of very moderate severity. In both cases the therapeutic indications were plain; excision of the diseased vermiform appendix offered the only

hope of cure. In the case characterized by a diffuse peritonitis this was accomplished, but in place of suturing the opening into the bowel left after excision, the latter was simply ligated, as it was believed that recovery was impossible, and every means was used to hasten the completion of the operation lest death should take place on the table. When, however, the child improved, the parts were inspected with the object of replacing this ligature by a careful suture; adhesions seemed to have successfully accomplished the closing of the bowel end; these subsequently broke down, and a secondary operation was required for the closing of the opening in the vermiform appendix. In the second case great care was taken not to break up any of the limiting adhesions.

It has been claimed that the purely local form of peritonitis resulting from ulcerations which are slow in their extension is amenable to medical treatment, and that the results of such treatment are far better than can be promised by the use of the knife. It will practically be admitted that appendicitis is identical with a circumscribed peritonitis. The question of operating upon these cases will depend more or less upon the presence or absence of pus. The question as to whether in every case of perityphlitis a collection of pus can be diagnosed, is one of prime importance. The testimony of various authors differs in regard to this point. Krafft found that every one of 106 cases of perityphlitis were accompanied by pus. Holländer believes that of 80 cases which were treated and cured pus was present in all. Leyden, however, claims that an exudate only is present in the early stages of perityphlitis, and that the treatment should be designed for the purpose of preventing the occurrence of suppuration. Krecke believes that in all these cases there is abscess formation, though he admits that possibly there may be exceptions. If perforation occurs, suppuration invariably follows. There are cases in which the ulcerating process does not extend to the serosa, and simply causes a more or less extensive adhesion of peritoneal surfaces. Even in these cases excision of the vermiform appendix is imperatively demanded, since thus the danger of later perforation is avoided. Holländer states that of his 80 cases treated medically not a single one terminated fatally. Though surgery can as yet show no such results, it must be admitted that these statistics are exceptional.—*Ibid.*

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**THE TRAINING SCHOOL FOR NURSES OF THE
MONTREAL GENERAL HOSPITAL.**

The function of the modern hospital is three-fold, firstly, the healing of the sick; secondly, the education of those who are to become medical practitioners; and, thirdly, the training of young women for the important calling of nursing the sick. The Montreal General Hospital has performed the two first duties nobly and well, but in the matter of providing instruction for nurses it has lagged behind other less useful institutions. True, some years ago an attempt was made to establish a school, which failed owing to several causes which need not here be mentioned. The want of a nurse's home for a long time formed an obstacle which has now happily been removed by the building of most comfortable quarters for the pupils in training. Last March the Committee of Management entrusted the establishment of a training school to Miss Livingston, a Canadian, who had received her professional training in the wards of the New York Hospital. Under her able management the school is now beginning its work. Many of the old nurses have joined the school and after a year's training will receive their diplomas, their former services being accepted as equivalent to one year's work in the school. What would be called elsewhere, the freshman class of the current half year is now complete, and no doubt a very large number of young women will apply for admission into the next class, which will be organized during the present summer.

The pupils must be between twenty-five and thirty-five years of age, and must show evidence of having had a good school

education. During their two years apprenticeship a money allowance will be made to them sufficient to cover the expense of uniforms, text-books, etc., and they will receive board, lodging and washing free of charge. In addition to the practical bedside instruction always going on in the ward service, lectures and demonstrations will be given by the members of the medical staff. After this course of sound training young women will be ready either for the duties of private nursing or for the serious responsibilities of the charge of large institutions.

Before long the public will begin to derive direct benefits from the nursing school, for a register of the graduates will be kept, and patients in both town and country will be able to obtain, at the very shortest notice, the services of a reliable trained nurse.

It is a remarkable fact that very many of the largest hospitals and training schools of the United States are managed by Canadian women, notably the Johns-Hopkins School at Baltimore, the Cook County Hospital at Chicago, the St. Luke's Hospital in Chicago, and the Charity Hospital at Blackwell's Island.

Surely Canada ought to produce good nurses from her own training schools when those of her daughters who go abroad are found in such responsible positions.

CANADIAN MEDICAL ASSOCIATION.

The twenty-third annual meeting of the Canadian Medical Association will be held in Toronto, on the 9th, 10th and 11th of September next. It is hoped that a large number of members from Montreal will be present. Arrangements will be made with railway and steamboat companies for a reduced travelling rate, and certificates enabling members to obtain such a reduction will be issued by the Secretary, Dr. James Bell, on application.

Members intending to present papers at this meeting are requested to notify the Secretary, at as early a date as possible, of the title of the paper intended to be read.

EDITORIAL NOTES.

IMPROVEMENTS AT THE MONTREAL GENERAL HOSPITAL.— Since the day of its foundation the old M. G. H. has never been in such an efficient condition. Within the last twelve months changes have occurred here and there which give the impression that the venerable institution has aroused itself from its Rip Van Winkle-like condition and wishes to show that it has merely been drowsy and is not yet moribund. The infectious department has been entirely rearranged, and is now, under the management of Dr. Corsan, in excellent condition, affording comfort and good treatment to patients, as well as clinical instruction to students. The nursing we have already alluded to. The out-door department has been greatly enlarged and extended, the nurses' old quarters in St. Dominique street having been converted into rooms for the use of specialists and others. In the wards great changes are observable. They are cleaner, brighter, and have a more business-like appearance than they ever had before. The nurses appeared in the new M.G.H. uniform for the first time on Sunday, June 22nd, a composition of pink and white gown, with neat cap and badges, all æsthetic and antiseptic. The house staff are turned out in white patrol jackets. Everything is as bright and clean as on a man-of-war. The former crew of the old ship had better visit Montreal before reform has altogether effaced the familiar outlines of the old structure.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.—After many years service, during which this journal has enjoyed the utmost popularity and success, Dr. I. Minis Hays has retired from the editorial chair. His successor is Dr. Edward P. Davis of Philadelphia, who will shortly take the management. The lines on which the *American Journal* has been guided will in no wise be changed, save that it will assume a more practical character.

Obituary.

—We regret having to report the death of Dr. Joseph Howe of New York, who died on board the steamship *Umbria* on Saturday, 7th June. The deceased was well known to many Canadians, being a native of New Brunswick, and was a graduate of the Medical Department of the University of the City of New York, of the class of 1866, and surgeon to Charity and St. Francis's Hospital. Dr. Howe was a surgeon of marked ability and a man of excellent qualities.

Personal.

—Drs. George Ross, James Stewart, T. G. Roddick, Wm. Gardner, Stirling and A. A. Browne have sailed for Europe to attend the Berlin Congress.

—Dr. A. Fisher Ritchie, a graduate of the class of 1876, who has been for some years practising in Duluth, Minnesota, is now in Montreal visiting his relations.

—Dr. F. N. Burrows has been appointed a member of the new Board of Medical Examiners for the State of North Dakota. Dr. Burrows is a graduate of McGill. The new law closely resembles that of Ontario.

Medical Items.

—The Provost of the University of Pennsylvania announced at the recent dinner of the medical alumni that the compulsory course for the medical degree in that University had been lengthened to four years.

—Cardinal Lavignerie is having negroes trained as medical practitioners at Malta, and several have already completed their education and proceeded to Central Africa.

—Dr. Laveran, of the Val-de-Grâce Hospital in Paris, has received a prize from the French Institute for his researches on the hæmatozoa of malaria.

—A recent report of the St. Petersburg Town Council shows that between May 21st, 1882, and April 1st, 1890, trichinæ were found on microscopic examination in 458 pigs in the slaughter-houses of that city. Trichinæ were also found in 21 specimens of bacon during the same period. During April of the present year alone the carcasses of eight pigs were condemned on the same ground.

RESECTION OF STOMACH FOR SIMPLE ULCER.—At the recent Italian Surgical Congress, Professor Postempski showed a lad, aged 18, on whom, after every kind of medical treatment had been tried to no purpose, he had excised a “round ulcer” by resection of the anterior wall of the stomach near the pylorus. Examination of the ulcer after removal showed that perforation was on the point of taking place. The patient got up on the tenth day after operation; there had been no return of the vomiting which previously troubled him, and he was gaining weight.

SMALLPOX MORTALITY IN SWEDEN.—The statistics of smallpox in Sweden are instructive, as showing in a most conclusive manner the effect of vaccination in mitigating the scourge. From 1774 to 1800 the death-rate from smallpox was 165 per 100,000 of the population. In 1801 optional vaccination was introduced and the smallpox mortality fell to 90 per 100,000 during the following nine years, and to 21 per 100,000 in the six years after that. From 1816, when vaccination was made compulsory, to 1883, beyond which year the official records from which these figures are drawn do not extend, the average death-rate from smallpox has been 18.2 per 100,000 inhabitants. In many single years the rate has been as low as 3, 2, or even 1 per 100,000.—*Brit. Med. Journal.*

HONORS TO SIR ANDREW CLARK AND MR. JONATHAN HUTCHINSON.—The ceremony at the Cambridge University “Commemencement” on Tuesday last was of more than ordinary interest to the medical profession, from the fact that the presidents of the Royal College of Physicians of London and of the Royal College of Surgeons were recipients of the honorary degree of LL.D. Sir Andrew Clark, president of the Royal College of Physicians,

was welcomed by the Public Orator, Dr. Sandys, as a son of Æsculapius, whose friendly professional relations to Mr. Gladstone might suggest his playing the part of Machaon to the Nestor of English eloquence, or perhaps he might prefer to be compared with that excellent speaker Asclepiades, the friend and physician of the most eloquent Roman of the time, L. Licinius Crassus. In presenting Dr. Jonathan Hutchinson, the President of the Royal College of Surgeons, the Orator said they could not separate him from his brother and immediate neighbor, especially as both these eminent representatives of the two branches of the medical profession had been colleagues as professors at the London Hospital, and were now at the head of their respective colleges.—*Hospital Gazette*, June 14, 1890.

FINGER NAIL DIRT.—The *British Medical Journal* of May 24th, 1890, says: The progress of bacteriology has shown that aseptic surgery means scientific cleanliness; the same lines of investigation show how very dirty people can be. Seventy-eight examinations of the impurities under finger nails were recently made in the bacteriological laboratories of Vienna, and the cultivations thus produced showed thirty-six kinds of micrococci, eighteen bacilli, three sarcinæ, and various varieties; the spores of common mould were very frequently present. The removal of all such impurities is an absolute duty in all who come near a parturient woman or a surgical wound. It is not enough to apply some antiseptic material to the surface of dirt; the impurity must be removed first, the hand antisepticated after. It is sometimes said that the scratch of a nail is poisonous. There is no reason to suspect the nail tissue; it is more likely the germs laid in a wound from a bacterial nest under the nail. Children are very apt to neglect to purify their nails when washing hands; and this matter is not always sufficiently attended to among surgical patients. Personal cleanliness is a part of civic duty, and, as Dr. Abbott well expressed the matter in his address to teachers, should be taught to school children and insisted on in practice. The facts we have recorded might well form the text for a school homily, especially when any epidemic was in the neighborhood.