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A PISTOL SHOT WOUNDING STOMACH, LARGE AND SMALL INTESTINE, AND MESENTERY, WITH RECOVERY.

BY GEORGE S. RENNIE, M.D., L.R.C.S.E., L.R.C.P.L.,
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J.N., æt 19.—Family history good; has been addicted to the use of alcohol for three years; physique poor.

The patient was shot in the abdomen, during a bar-room row, with a 32 calibre revolver. Was seen June 25th in consultation with Dr. Balfe at 4.15 p.m., soon after accident. The ball entered the abdomen three-quarters of an inch above, and to the right of, the umbilicus; a portion of omentum about half the size of a man's hand protruded from the puncture. His pulse was weak and frequent, and the patient in a condition of collapse. We dressed the wound with aseptic cotton, and sent the patient to St. Joseph's Hospital in the ambulance. He was under the influence of alcohol at the time of the accident. Operation at 5 p.m.; was assisted by Drs. Balfe, Cockburn, Storms and Rogers. The patient was anaesthetized, his clothing cut off, and his extremities wrapped in batting and bandaged. We carefully scrubbed the belly with soap and water, and 1 in 1000 bichloride solution. The hernia of omentum, which was full of dirt, was ligatured with catgut and cut off. I made an abdominal incision in the median line, about four inches long, starting just below the navel and extending downwards. All bleeding vessels having been tied, the abdominal cavity was opened and the incision extended to the right of the navel to the point of entrance of the ball, cutting through the abdominal wall with scissors. When we got into the abdominal cavity a faecal odor was quite apparent. The abdominal cavity

was completely filled with dark fluid blood, a quantity of which was sponged out. The first hole found was in the mesentery of the transverse colon, the size of a quarter of a dollar, but oval in shape. The large veins and arteries that had been wounded were bleeding profusely. The bleeding from this opening I controlled, by passing a stout silk purse-string suture around the opening by means of an ordinary round, straight sewing needle, which suture was tied tightly. Two smaller holes were next found in the mesentery of the small intestine, which were also allowing free hæmorrhage. These were ligatured, and tied in a like manner, which effectually stopped the bleeding. At this time three or four feet of bowel was outside the peritoneal cavity, but we kept it warm by applying towels wrung out of hot sterilized water. On taking out more of the small intestine, it was found that the ball had entered the gut, and passed through a coil, making another hole at its point of exit, on the opposite side. These wounds were about the size of my little finger, and their mucous membrane was everted. These two openings I repaired by using a fine, round, ordinary sewing needle with fine aseptic silk. The coil was steadily held up, while the peritoneal surfaces of the first opening were brought together with a continuous Lambert suture. I started the suturing fully half an inch from one margin of the wound, and finished fully half an inch from the opposite margin, placing the stitches at intervals of about one-eighth of an inch. When these sutures were drawn taut, it was found that they brought the peritoneal surface into close apposition, and also beautifully controlled the hæmorrhage. Hole number two, or point of exit, was treated in a like manner. On taking out more of the small intestine two more holes were found in the mesentery, which were treated in a similar manner to the other holes in mesentery, that had already been repaired.

After removing more of the small intestine from the abdominal cavity, it was found that another coil of intestine had been perforated by the ball, in the same manner as the intestine that had already been repaired, that is, the ball had travelled through the gut from side to side making two holes in the bowel. These bowel punctures, numbers three and four, which were bleeding considerably, were repaired and the hæmorrhage stopped

in a like manner to holes numbers one and two, by using fine silk with a continuous Lambert suture. We next found two more holes in mesentery, which were brought together with a silk purse-string suture, precisely as the other mesenteric wounds had been treated.

It was now found necessary to enlarge the abdominal incision slightly upwards, and on bringing the transverse colon into view, we found that the ball had pierced it from side to side, making in it two ragged holes that would take my index finger. These bowel wounds, numbers five and six, were repaired in a similar manner to bowel wounds numbers one, two, three and four.

The stomach was next examined, and on its anterior wall near the lower border was a hole about the size of a quarter of a dollar, but elliptical in shape, with ragged edges. This perforation number seven was repaired with the continuous Lambert suture, in the same way as we had done with the other six bowel wounds. On examining the other side of the stomach no hole could be found.

The intestines were replaced within the abdomen, and the cavity thoroughly flushed with hot sterilized water, by pouring it in from a large bedroom pitcher, and forcing it out of the cavity, by external pressure with the hands on each side of the abdomen.

We found some large-sized clots, one of which was half the size of my fist, which we removed. All blood and clots having been removed from the peritoneal cavity, I started at the lower end of the gut and examined it from one end to the other, keeping it warm all the time with hot aseptic towels, but could not find any further damage that the ball had done. The abdominal cavity was next searched from the diaphragm to the pelvis, but without finding any trace of the bullet or other damage done by it.

All the wounds that had been repaired were for the last time inspected, but no hæmorrhage or oozing was found. By this time our patient was very weak and hypodermics of brandy or ether were administered at intervals.

The intestines were replaced, and the abdominal cavity thoroughly washed out with hot sterilized water; fully a dozen large jugsful were used in these repeated flushings. All the water was sponged out and a sponge on a holder left in the

lower part of pelvic cavity. A large flat sponge was inserted over the intestines, to keep them in place, while the abdominal stitches, of silkworm gut, were introduced. The upper stitches were tied first, and the sponge was removed from the pelvic cavity, which was not even bloodstained. A drain of iodoform gauze was passed to the lowest part of the abdominal cavity, and the other end brought out through the lower end of the abdominal wound. Having removed the large flat sponge from over the intestines, the remaining silkworm gut sutures were tied. The wound was dusted with iodoform, covered with silk protective, sterilized gauze dressing, and a thick layer of sterilized absorbent cotton applied, the whole being kept in place by a broad many-tailed flannel bandage. The patient was placed in bed with blankets and hot bottles.

During the operation, on account of his weakened condition, he received about twelve hypodermics of brandy or ether. When in bed the pulse could just be felt at the wrist. Hypodermics of brandy, to be alternated with a saline solution (one drachm to the pint), were ordered to be given every ten minutes until pulse improved.

Time of operation—one hour and twenty minutes. Six hours after the operation the pulse was 130, and the temperature 99 2.5°. The patient complained of pain, so a quarter grain of morphia was given hypodermically, and he rested fairly well during the night.

June 29th.—Morning temperature 98½; pulse 124. Taking milk and brandy as nourishment; suppositories of opium, one grain each, ordered for pain, and to keep bowels at rest. Evening temperature 99 2.5; pulse 132.

June 30th.—Morning temperature 99; pulse 120. Wound dressed, drain of iodoform gauze removed, and placed in sterilized gauze for examination. It was pulled straight up through the wound, and had remained evidently at the bottom of the pelvic cavity where it had been placed; its lower part was covered with fibrin, and it was not even bloodstained; which clearly proved that not even any oozing of blood had taken place. The wound looked very quiet, no redness or tenderness, and abdomen quite flat. Evening temperature 99 2.5; pulse 120. The drain of gauze, which was carefully kept in sterilized gauze and cotton, I sent to Dr. Edgar, of the Hamilton City

Hospital, who very kindly made cultures from it ; but after keeping them at a temperature of 37 degrees centigrade for forty-eight hours, he was unable to find the development of a single colony, thus clearly proving that the abdominal cavity was surely aseptic, for if germs were to be found they would have been present in the fibrin on the gauze drain that I had removed.

July 1st.—Morning temperature 99 2.5 ; pulse 72. Patient much improved, and rested quietly nearly all night. Had a small motion of the bowels. Takes his nourishment of milk regularly. The dressing that had become loose was replaced. Evening temperature 99 2.5 ; pulse 84.

July 2nd.—Temperature 99 ; pulse 76. Patient rested nearly all day. Evening temperature 99 2.5 ; pulse 80.

July 3rd.—Pulse 78 ; temperature 99. Patient takes milk regularly, and shows marked improvement, and does not complain of pain. Had large motion of the bowels. Evening temperature 99 ; pulse 76.

July 4th.—Pulse 72 ; temperature 98 2.5. Patient much improved. Had motion of the bowels. Taking milk and egg-nog regularly. Wound dressed. Some stitches that were found to be cutting were removed. Slight amount of redness around each stitch, but wound otherwise quiet, and dry, and abdomen flat. Evening temperature 99 2.5 ; pulse 76.

July 5th.—Pulse 70 ; temperature 98 2.5. Patient rested quietly, and takes nourishment regularly. Evening temperature 100 ; pulse 76.

July 6th.—Temperature 99 ; pulse 76. No unfavorable symptoms. Evening temperature 100 ; pulse 78.

July 7th.—Temperature 98 2.5 ; pulse 76. Evening temperature 99 2.5 ; pulse 72.

July 8th.—Temperature 98 2.5 ; pulse 72. Evening temperature 99 ; pulse 72.

July 9th.—Temperature 98 2.5 ; pulse 72. Dressed wound. Looks very healthy and healing kindly. Removed all stitches. Several of the stitches that were removed had cut quite deeply into the tissues, and strapping was used to take the tension off the wound. Evening temperature 99 ; pulse 78.

From this day on the patient took solid food, and steadily improved, his temperature and pulse remaining normal, until July the 15th, when a

visitor gave him a dish of raspberries to eat, which caused an acute attack of indigestion with severe abdominal pain and vomiting. Morphia had to be given hypodermically, to relieve these symptoms, and the next day he was much improved, and able to sit up and be around his room as usual. He was discharged from the hospital in one month, and during his last two weeks' stay he gained in flesh, and felt nearly as well as ever. Since that time he has not suffered any, and is as strong as he ever was in his life.

This case is a singular one, from the fact that one small pistol ball should, in passing through the abdominal cavity, have done such an extensive amount of injury to the abdominal viscera. The ball, I believe, passed from right to left in a downward and backward direction, perforating first the stomach, then the mesentery of the transverse colon, the transverse colon, mesentery and two coils of small intestine, and is at the present time encysted in the muscles of the back close to the spine, and is not doing any harm. At the time of the operation a further search might have been made for the ball, but the condition of the patient would not permit of it, and we had to be content when we had stopped all hæmorrhage, repaired all wounds in the bowel, and got the abdominal cavity as aseptic as possible.

Another feature in the case is, that although the ball had caused such severe injuries to the intestines, allowing the fæcal matter to pass into the abdominal cavity, and also allowing of profuse hæmorrhage from bowel and mesentery, that the patient's temperature scarcely went above normal, only on one occasion reaching one hundred ; and that after the operation the patient did not show practically one unfavorable symptom. This clearly shows how effectual the continuous Lambert suture is, when properly applied, in controlling the hæmorrhage, shutting off the alimentary canal from the abdominal cavity, and beautifully bringing the peritoneal surfaces in close apposition, for the healing process to take place. It holds them in that position until nature has formed a firm and lasting cicatrix. This suture can be very rapidly inserted, and I wonder why any one should use any other form of complicated suture which takes more time ; or use any device which takes fully as long or longer to insert, and from which after-complications may arise.

This case also beautifully illustrated how the abdominal cavity, although full of clots, fluid blood, and fæces, can, by repeated flushings and washings, be rendered truly aseptic; as has been proved by the examination of the drain that was removed, and from which not a single colony had developed even at the end of a week, and also from the history of the case, and the after result of the operation.

LABORATORY NOTES ON THE BACTERIOLOGY OF DIPHTHERIA.*

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A considerable amount of bacteriological work relating to antitoxin experiments was performed in the laboratory of the Toronto Board of Health, during the closing months of 1894, but it was not until February 1st last, that the examination of diphtheria exudates was carried on in a regular and systematic manner. The importance of such investigations was clearly demonstrated by the results obtained in the Hospital for Infectious Diseases in Berlin and Paris, and the extensive researches of the Health Department of New York. It was, therefore, determined by Dr. Sheard, Health Officer of Toronto, that similiar work should be undertaken in connection with the Isolation Hospital, an institution entirely under city control, and in which the greater number of patients are the victims of diphtheria.

The objects sought were: 1. To confirm clinical diagnosis, and determine doubtful cases. 2. To distinguish between cases of true diphtheria, and those caused by cocci, so that patients affected by the latter could be isolated, and more speedily discharged. 3. To demonstrate the absence of the specific bacillus from the respiratory passages of convalescents from true diphtheria, with a view so shortening the usual twenty-eight days detention in hospital. 4. To assist in the diagnosis of outside cases, thus saving isolation, and disinfection, with their attendant inconvenience and expense. 5. To afford a means of contributing towards a knowledge of the disease.

*Read at the Belleville Meeting of Ontario Health Officers, and re-printed from the *London Lancet*.
†*Medical Record*, Vol. 46, Nos. 11 and 13.

The purpose of this paper is that of presenting a brief account of the work performed, and summarizing such facts as seem likely to be interesting or useful. To this end the same general plan has been followed as that adopted in the joint report of Drs. Park and Beebe,† of the Bacteriological Laboratory of the New York Health Department, and presented to Dr. Hermann M. Biggs, Chief Pathologist. Results may in this way be more advantageously compared than with those of Berlin and Paris, where a type of disease of greater severity seems to prevail than either in New York or Toronto.

From Feb. 1st to July 1st, there were admitted to the Isolation Hospital 188 patients said to be suffering from diphtheria. The records also embrace, for the same time, 60 private cases in which the exudates were submitted by city physicians. The details of these 248 cases are complete, as far as the examinations are concerned, and are included in the statements made as to organisms present, but, as these outside cases could not be readily traced, no further particulars were sought.

With regard to the hospital cases it may be assumed that the clinical diagnosis was sufficiently conclusive to warrant the admission of the patients, and it may also be noticed that, as most of them belonged to the poorer classes, they cannot be considered as being amongst the most hopeful. In other words, the hospital clientage may be taken as consisting of apparently pronounced cases, with an unfavorable history, and any statistics gathered from such records will certainly not lead to an underestimate of the diseases commonly classed as diphtheria.

Collection of the Exudate.—The infected material is taken by the attending physician, by passing a swab firmly over any patches of visible exudate on the tonsils, or pharynx, and at once sent for examination to the laboratory of the Health Department. This method is deemed preferable to that commonly practised, in which a culture is at once made by the physician, as it affords an opportunity for the bacteriologist to make an examination of the exudate, as well as the culture, thus forming a check of some value, and also often enabling a reliable diagnosis to be at once pronounced. Another advantage is that the condition of the culture medium can be

guaranteed, and the manipulation be in more experienced hands.

The swabs are prepared by cutting No. 15 steel wire into 6 inch lengths, roughening one end by a few strokes of a chisel-edged hammer, and firmly winding on a little ordinary cotton wool, so as to make an applicator of about a quarter of an inch in diameter. The other end of the wire is then passed through a tapered cork, of best quality, which fits into the non-lipped mouth of a stout, well annealed, test tube, of 15 mm. external diameter, by 100 mm. in depth (say five-eighths of an inch by four inches).

The object should be that of preventing the infected material from soaking into the swab, and preference is, therefore, given to ordinary cotton wool, rather than the absorbent kind hitherto recommended. A cork will also be found an improvement on the usual plug of cotton wool, and is practically a sufficient protection from extraneous germs. The tubes containing the swab are sterilized by one and a half hours' exposure to a dry heat of 150 degrees C. The swabs are supplied free to any physician requiring them.

Culture.—Experiments have been made with various media, but Loeffler's blood serum mixture, prepared by the quick method, has been found to best answer the requirements, though, when recently made, and bearing water of condensation, it does not appear to give such good differential staining as when dry, or older. The white and yolk of an egg, with one-third its bulk of bouillon, containing one per cent. of glucose, may on occasion be used, as also glycerin-agar, which is, however, slower than serum, though yielding much better macroscopic preparations. Park and Beebe claim that glycerin-agar is not so reliable for diagnostic purposes, as is serum, and I have noticed that the growth of Loeffler's bacillus, on this medium, is less luxuriant, while the cocci appear to develop more rapidly and vigorously.

In making a culture the infected swab should be lightly but firmly passed over the surface of the slanted serum, but not with such force as to abrade it. The infected tubes are then kept in an incubator, at 35 to 37 C., for say 12 hours, when the growth will be easily recognized. As a matter of fact the cultures are set one day, and examined next morning.

Cultural characteristics are of value as affording collateral evidence of the presence of the specific organism, and on transparent media the colonies are more or less easily recognized. It is, however, on morphological characters, and peculiarities of staining, that reliance must be placed.

Staining.—A smear from a swab is made directly on a slide, and is dried, fixed, and stained with Loeffler's blue. In making a preparation from a culture, a small drop of water is put on a slide, by means of a platinum loop, and a portion representing the entire growth on the surface of the serum is removed by a platinum needle, and evenly distributed in the water, and is then dried, fixed, and stained. A drop of cedar oil is put on the slide, and the examination made by a $\frac{1}{2}$ th oil immersion lens. Staining directly on the slide, as in the recognition of bacillus tuberculosis, is quicker and handier than using a cover glass, and, with proper skill in using the objective, is practically safe.

Characteristics of the Diphtheria Bacillus.—It will be unnecessary to repeat the well known descriptions of this organism, and I would only emphasize its great liability to variation in form and size. This sportive tendency is sure to puzzle the inexperienced observer, though, when understood, it becomes diagnostic. The organisms found in the exudate are often presented as diplobacilli, which stain more or less uniformly, and, at most, show polar darkening, while, in other, and much rarer cases, they are exceedingly characteristic, resembling those grown on serum, and possessing strongly marked interruptions. The cause of this variation may possibly be found in the condition as to reaction, or composition of the mucous membrane or secretion, in the throats of different patients. This seems likely, as under artificial cultivation the character of the medium greatly influences the appearance of the bacillus. I may say that I have found these characteristic specimens most frequently in the exudates from adults.

The variations shown in the bacilli of cultures are not, however, to be wholly accounted for by the character of the medium, nor the temperature, or staining manipulations. Cultures of different exudates, grown together, under conditions precisely similar, and stained in like manner, often show very different results. In some the bacilli

may be uniform in shape, size, arrangement, and diagrammatic staining, while other specimens exhibit wide differences in all respects; presenting extremely long rods, with wide interruptions; or clavate, fusiform, or even pyriform organisms, of the most bizarre description. It is thought that these are involution forms; or, according to Klein, that they represent a relationship to a mycelial fungus. The variations are, however, very interesting, and invite further study.

Relation between the Length of the Bacillus and its Virulence.—The results of Park and Beebe are not in accord with some others, who hold that the longest bacilli are the most virulent. The observations of the above-named authors show that the greatest mortality occurred in those instances in which the rods were shorter than the average, while there was a diminished death rate with the long forms, and a still lower rate with the evenly-stained short forms, with badly marked characters. Ample opportunity was afforded by the records of the Isolation Hospital for learning the clinical history of the cases there, and, from a comparison of such data with those obtained from the bacteriological examination, the conclusion to be formed is in accord with that arrived at in New York, viz.: that the size of the bacilli affords little on which to base a prognosis, but, if anything, the longer rods produce less fatal results than those of average dimensions.

Relation between the Pseudo and True Bacillus.—In view of the uncertain state of knowledge in regard to this point, and also taking into consideration the fact that the work at the Isolation Hospital was designed to be of a practical character, free from risk, no advantage was taken of the differentiation of these forms. All cases were treated as diphtheria in which an organism was found possessing the ordinary recognized characters. The results obtained have fully justified this course, and any observations, or statistics, given in this paper, must be understood as being subject to this condition.

It may be noted that a bacillus, identical in most of its characters with the true bacillus, but not possessing virulence, or at least not producing disease in the individual in whose throat it is found, and incapable of proving virulent to animals, has been detected in the throats of a considerable proportion of healthy persons. Hoff-

man, who identified these forms, was unable to decide whether they were merely attenuated diphtheria bacilli, or ordinary harmless saprophytes. The experiments of Roux and Yersin pointed to the former conclusion, but Escherich leans to the latter view, and the work of Park and Beebe, which included cultures from 330 healthy throats, showed the presence of bacilli of three kinds: 1. Virulent diphtheria bacilli, characteristic in growth, producing acid in bouillon (8 cases). 2. Bacilli identical with Loeffler's bacillus in cultural and acid-forming power, but non-virulent (24 cases). 3. Bacilli not having all the characteristics of the true organism, producing alkali in bouillon, and non-virulent (27 cases). These were all furnished in dispensary or hospital practice in New York, and in which there was no history of direct contact with diphtheria.

A further set of experiments, on cultures from the throats of persons belonging to fourteen families in which there had occurred diphtheria, revealed the fact that the true bacilli were found in 50 per cent. of the cases, and 40 per cent. developed, later, to a greater or less extent, the lesions of diphtheria. The examination included 45 children. These experiments have an important bearing on isolation, and this must be my excuse for a digression in a direction in which I have nothing original to offer.

Persistence of the Bacilli in the Throats of Patients.—Some observations have been made on this point. The shortest period for the disappearance of the bacilli, after the patient's admission to hospital, was five days, and the longest 42 days. A somewhat interesting case was that of patient No. 1820, an adult, in which, by the thirteenth day, the bacilli had entirely disappeared, and recovery was progressing rapidly. On the thirteenth day after this, and within one day of the termination of the stipulated period of convalescence, reinfection occurred, as evidenced by the clinical signs of the disease, and confirmed by bacteriological test. By the thirteenth day the bacilli had again disappeared and the discharge of the patient followed shortly after. This was a clear case of reinfection, and, taken in connection with the ascertained variability in the persistence of the bacilli, shows conclusively that a definite time limit cannot be placed to the period of convalescence, and that though a detention of fourteen days after the

disappearance of the exudate is a fairly well chosen term, it is sometimes too long for the safety of the patient, and often not long enough to prevent infection being carried by those who are discharged. Park and Beebe think that the isolation of patients should continue until cultures prove the absence of bacilli, and when such examinations cannot be made, at least three weeks should elapse after the disappearance of the membrane. During the past two months, as confidence has been established in bacteriological results, considerable advantage has been taken of such tests, as governing the discharge of patients, and, in no instance, has there been any reason to doubt the correctness of the conclusions.

Diagnosis by Examination of the Exudate.—The question is often asked whether, by a microscopical examination of a smear of the exudate, it is possible to make a diagnosis. In many cases a reliable conclusion can thus be formed, but, in others, it is quite impossible. Failure may arise from the fact that the bacilli are few, while other organisms are very numerous, and, as I have before stated, the characters of the Loeffler bacillus are, in the natural medium, often very difficult of recognition.

On looking over the records of the last hundred exudates examined I find that the bacillus was noted as being undoubtedly present 36 times, and as being probably present 39 times. In the other cases the organism was either not present, or unrecognizable. According to this it is possible to make, from the exudate, a sure diagnosis, in at least one-third of the cases, and to form a fairly correct idea as to the nature of about three-quarters. Negative results have not any diagnostic value, as failure to detect the bacilli does not necessarily prove their absence.

Number of Species of Bacteria Found in Cultures.—Considering the apparently fertile source it is quite remarkable that so few species are found in serum cultures. Miller isolated more than 100 species from the juices and deposits of the mouth, and it does not seem unlikely that a large proportion of these might reach the tonsils or pharynx. The greater number of such bacteria are derived from food, or air, and the mouth organisms proper, were found by Miller to be strictly parasitic, and not capable of cultivation on artificial media. This may possibly account

for the small number of species represented by cultures from the throats of diphtheria patients, and the temperature at which cultures are grown no doubt exercises an inhibitory influence on many species. I have found that the range is confined to about 20 organisms, and the occurrence of some of these is quite rare. The species include Loeffler's bacillus, and pseudo form, the pyogenic staphylococci and streptococci, micrococcus tetragenus, white and pink yeasts, the diplococci of Frankel, and Friedlander, Pfeiffer's bacillus, streptococcus articulorum, bacillus mesentericus vulgatus, and other spore-bearing organisms.

Character of Pathogenic Organisms Found.—The following table shows the general character of the organisms present in 188 hospital cases, and 60 in private practice. The results are calculated in the nearest whole percentages :

	Hospital Cases. Private Cases.	
B. Diphtheriæ	36 per cent.	21 per cent.
“ and streptococci. 11 “ “	11 “ “	18 “ “
“ and staphylococci 10 “ “	10 “ “	6 “ “
“ with strepto. and staph.	19 “ “	15 “ “
Streptococci only	4 “ “	16 “ “
Staphylococci only	6 “ “	7 “ “
Strepto. and staphylo.	12 “ “	14 “ “
Other organisms	2 “ “	2 “ “
Loeffler's bacillus present	75.5 “ “	61.7 “ “
“ “ absent	24.5 “ “	38.3 “ “

It is commonly supposed that Loeffler's bacillus is much more generally associated with cocci than is indicated by this table, but I can only give the facts as observed. It may, however, be explained that the cases of combination are understated, on account of the somewhat slower growth of cocci on serum, and it may also be said that the above figures refer only to cocci other than M. tetragenus. Observations of the cultures were, in all cases, made after 24 hours development, except those set on Saturdays, when twice this time elapsed. Cocci were found to grow in the shorter period, and there is no definite reason to conclude that a longer time in the incubator would have produced a different result.

The fact that nearly one-quarter of the cases admitted to the Isolation Hospital as diphtheria, were really not so, is a most important one, and points strongly to the necessity for “suspect” wards in institutions of this character. The isola-

tion should be perfect, and all patients should be detained in such quarantine until the results of a bacteriological examination are known. This seldom requires more than 24 hours, and, by the exudate, may sometimes be decided in a few minutes.

In the 5611 cultures, made in New York, from May, 1893, to May, 1894, and representing hospital, dispensary, and private cases, the specific bacillus was found to be absent in 27 per cent. of the cases. This agrees fairly well with the results obtained here.

Occurrence of Staphylococcus Pyogenus Aureus.

—All cultures were laid aside, for fourteen days, after microscopical examination, so that the golden staphylococcus might reveal itself by its chromogenic character. It was found in 27 out of 188 cases, or about 14 per cent. It is significant that it was present in nearly 19 per cent. of the fatal cases.

Occurrence of Micrococcus Tetragenus.—The frequency of this organism, in diphtheria exudates, and cultures, calls for special remark. As judged by morphological characters I have found it to be present, either in the exudate, or cultures, in 91 per cent. of the hospital cases examined. This is, I think, a greater proportion than observed in health, but whether the fact is of any pathological importance I am not in a position to say.

Susceptibility as Influenced by Age and Sex.—The following table affords some data for arriving at conclusions on these points, but it is to be regretted that cases of true and false diphtheria are not separately enumerated. The percentages apply to the ages of hospital patients only :

7 years and under	50	per cent.
Between 7 and 14 years	21	" "
" 14 " 21 "	14	" "
" 21 " 28 "	10	" "
" 28 " 51 "	5	" "

The tables of Park and Beebe cannot be compared, item by item, with this, but it may, however, be concluded that young children are here much less liable to the disease, while adults are more susceptible than in New York.

The proportion of females to males was 56 and 44 per cent., respectively, figures which approximate very closely to those applying to New York.

Mortality.—The type of disease prevalent in Toronto, appears to be, relatively, of an average

character. This is shown by the observed death rates in various American cities, as given in the last report of the Toronto Board of Health. A few of these figures may be reproduced :

Cleveland, Ohio	63.5	per cent.
Des Moines, Iowa	44.8	" "
Brooklyn, N.Y.	36.9	" "
Rochester, N.Y.	33.3	" "
Boston, Mass.	32.3	" "
New York, N.Y.	30.6	" "
Philadelphia, Pa.	29.0	" "
Detroit, Mich.	28.6	" "
Toronto, Ont. (1894)	27.9	" "
Toronto, Ont. (1892-3-4)	22.1	" "
Duluth, Minn.	19.0	" "
Harrisburgh, Pa.	12.0	" "
Toledo, O.	11.7	" "

General health returns cannot be accepted as being as accurate as those of hospitals, where the facilities for obtaining statistics are complete and under perfect control. It will, therefore, be better to class the death rate of the Isolation Hospital with other institutions of the same class, of which a few records are at hand :

Sick Children's Hospital, Paris, average of 5 years	51.7	per cent.
English Hospitals, quoted by Drs. Washbourn, Goodall, and Chard, average	38.9	"
Trousseau Hospital, Paris	32.0	"
Willard Parker Hospital, New York, average 4 years	23.77	"
Willard Parker Hospital, New York, 1894	27.00	"
Isolation Hospital, Toronto, 1893	19.32	"
" " " 1894	14.05	"
" " " February		
to June, inclusive, 1895	18.08	"

In the Toronto returns there have not been any deductions for cases which were in a moribund condition when admitted, but every death occurring in the institution has been included. The low rate is highly creditable to Dr. Tweedie, the physician in charge, but nevertheless I think the conclusion may be formed that the bacillus is less virulent or the subjects more resistant in Toronto than in many other cities.

Organisms present in fatal cases.—Of the 34 deaths which took place during the last five months, there were 33 examinations of exudates, as in one instance the patient died a few minutes after admission and a swab was not taken. In

another case, that of an infant, twelve months old, in a moribund condition from membranous croup, the swab was unsatisfactory. The records of the 32 remaining cases were as follows :

Loeffler's bacillus only.....	37.5	per cent.
" " with streptococci.....	25.0	"
" " " staphylococci.....	18.7	"
" " " streptococci and staphylococci..	18.7	"

The staphylococci were, in all cases, *S. pyogenes aureus*. No fatal results took place when only cocci were present.

Sex and age in fatal cases.—The proportion of males and females was respectively 44 and 56 per cent., being precisely identical with the ratio of affected cases.

Age is represented by the following percentages :—

2nd year.....	26	per cent.
3rd ".....	12	"
4th ".....	17	"
5th ".....	15	"
6th ".....	6	"
7th ".....	15	"
8th ".....	3	"
10th ".....	3	"
13th ".....	3	"

It will thus be seen that the mortality was 91 per cent. during the first seven years, while the number of patients under that age was 50 per cent. Of the 29 per cent. of patients over fourteen years of age not a single death occurred.

Sixty-seven per cent. of the deaths took place within five days after admission to Hospital, and 88 per cent. within eight days. The longest period from admission to death was fourteen days.

Relation between organisms present and severity of the disease.—I offer with great hesitancy any remarks on this subject, as some of the results indicated by my investigations are as surprising to me as they doubtless will be to others. I have, however, no reason to question the care with which the bacteriological observations were made, though in regard to the records of the character of the disease, it may be explained that such were not specially kept for this purpose, but were partly obtained during conversations with the Medical Superintendent, and partly from his rough notes of cases. Further experience and more perfect records may throw additional light on this subject,

but in the meantime I venture to submit what I have up to the present observed.

In the appended table the cases have been classified as mild, severe, very severe, and fatal, and the proportion with reference to each organism or combination is given in round percentages :*

	Mild.	Severe.	Very severe.	Fatal.
B. Diphtheria.....	46.6	11.2	22.5	19.3
" & streptococci	32.1	17.8	21.4	28.5
" "staphylococci	27.2	18.1	22.7	31.8
" with strepto. & staphylo.	54.3	11.4	20.0	14.2
Staphylococci only.....	97.3	2.7	0.0	0.0
Streptococci only.....	100.0	0.0	0.0	0.0
Staphylo. and strepto.....	100.0	0.0	0.0	0.0

The general belief that the most fatal cases result from the association of Loeffler's bacillus with staphylococci, or with streptococci, is confirmed by the above figures, and the former combination is the most serious. It is, however, extraordinary that when both cocci are present with the Loeffler bacillus, the death rate is apparently reduced by one half. This would indicate an antagonism between the combined cocci and the bacilli—a supposition which I do not care to urge until further evidence is obtained, and this I shall take particular pains to procure. There are other interesting deductions which might be drawn from the above statistics, but I shall not further trespass on patience which must be already overtaxed.

WITH DÉJÉRINE AT THE SALPÊTRIÈRE.

BY W. CAMPBELL MEYERS, M.D., TORONTO.

Since the appointment of Doctor Déjérine to the Salpêtrière some seven months since, a marked change has taken place in the service which has been allotted to him. He has established a laboratory of normal and pathological anatomy, containing at present about three hundred brains and spinal cords, some of which are healthy, while others present signs of the most varied diseases. Here one also finds all the most modern appliances for cutting and mounting sections. These latter fill two immense cabinets, and afford an excellent opportunity for the study of the structure of the

* The table refers to pyogenic cocci only, and does not include *Micrococcus tetragonus*, which was present in 91 per cent. of the cases.

nervous system, from the smallest termination of a nerve to a section comprising a cut of half of the brain. All these sections are beautifully stained, and many of them showing the course of the fibres in different parts of the brain connecting the convolutions, are displayed in the large work which he has just published on the "Anatomy of the Nervous Centres." Before passing to the wards it may be mentioned that Dr. Déjérine has about two thousand beds under his care, of which five hundred are devoted exclusively to nervous diseases, the remainder being occupied by other diseases or by the infirm. His nervous cases are furnished not only from the inmates of the Salpêtrière, but also from his external clinic, of which I will speak later. Naturally among such a number of nervous cases all varieties of disease are met with. Some study of these patients show one about sixty cases of aphasia alone. These comprise all forms of the disease, some who are unable to read, write, understand or utter a word, others who can speak a few words either by their own effort or by hearing some one who is present pronounce them, others again who though able to speak, use the words incorrectly, whilst there are others to whom the power of speech has entirely returned, and in whom aphasia would never be suspected were it not for the history. Among the various cases of *tabes dorsalis* one is struck by the number in which the progress of the disease has been arrested by blindness, the disease apparently concentrating its action on the optic nerves, rather than on the posterior columns of the cord, and leaving these latter more or less uninjured. The persistency of the lightning pains is an interesting feature of many of these cases.

There are also a number of cases of peripheral neuritis, some exhibiting the wasting, hyperæsthesia, loss of reflexes, etc., common to this disease, while others have more or less completely regained their former health. Several cases also of syringo-myelia, in which the change in sensation characteristic of this disease (retained tactile sensibility with loss of that to heat and cold) are clearly shown. An interesting case of tumor of the cerebellum in a girl aged twenty-four, which dates from two years, with characteristic gait, a tendency to fall backwards, always towards the right side, optic neuritis, lightning pain in legs, loss of tendon reflexes, with marked disturbance of

sensibility. There was a case of *astasia-abasia* in which the vertigo and peculiarity of walk is associated with loss of tendon reflexes. A case of amyotrophy, implicating the face, scapular region, and upper arm only, in a woman of twenty-five, and in which a fatty degeneration of some of the muscles had taken place, being an excellent example of this disease as first described by Landouzy and Déjérine a few years since. Several cases of multiple sclerosis, in one of which the disorder of movement was so great as to absolutely prevent the patient using her hands. Lack of space forbids my mentioning many other interesting cases which an acquaintance with these wards presents, such as myelitis in its various forms, chorea, hemiplegia, Basedow's disease, etc., all of which contribute largely to the literature of nervous diseases which Dr. Déjérine has recently brought before the profession. It is necessary, however, to speak of the out-patient department, which has so rapidly increased in size of late. It has now become a very important part of the work done in this hospital, Dr. Déjérine seeing from seventy to eighty patients on his consultation days. He also gives a course of instruction on nervous diseases during the session in this department, and this course is already attended both by foreigners and students almost as largely as that of the late Prof. Charcôt.

In conclusion, I may say that Dr. Déjérine is about forty-five years of age, and is by birth a Savoyard. He is Vice-President of the Biological Society of Paris, and by his genial manner and indomitable energy in his work he is rapidly attaining the position of the first neurologist in France to-day.

Selected Articles.

AORTIC ANEURISMS. THEIR PRESENT STATUS WITH REGARD TO TREATMENT, MEDICAL AND SURGICAL.

I have been led to the consideration of this subject because toward the close of my recent service in the Long Island Hospital, there came into my wards a case of abdominal aneurism, either of the celiac axis or of the aorta itself, which had been subjected to medical treatment in the New York Hospital some months before, but without much benefit. The tumor seems to be just beneath the

peritoneum, and appeared to be of a nature to warrant operative interference, provided appropriate medical treatment proved after a fair trial ineffectual. Before venturing on any operation, I thought it but just to my patient to take a thorough survey of the field, making careful inquiry into the methods of the present day, in order to determine whether the results of surgical interference were sufficiently promising to induce me to make an attempt to cure the aneurism by operative procedure. I desire to lay the results of my investigation before the Society this evening, because I deem the subject of much importance. Sufferers from aortic aneurism are common enough unhappily. Not a year passes in our large city hospitals without the admission into the wards of one or more of these cases, which, as a rule, leave the hospital by way of the dead house. I have been astonished at the frequency with which cases of this sort have been reported in the journals. Every number of the *Index Medicus* for five years past has contained at least half a page of references to this subject, so that the cases which have been reported in that time must number several hundred, to which must be added the very numerous class which never reach the journals at all. All ages are the subjects of this affection. I have found a case recorded in the St. Petersburg *Medicinische Wochenschrift* in which an aneurism of the aorta appeared in a child of twelve years, and there has been another case published in which the age of the patient was 72. Four-fifths of all the cases, however, occur between the ages of 30 and 50. I was under the impression that the duration of life in patients suffering from aortic aneurism was much longer than it is, for I find on investigation that 75 per cent. of the cases die within two years, and that out of a series of 40 cases observed by Garland, but three survived for five years. Without interference, practically all these cases walk in that path which leads by a short cut to the grave. To this fact must be added another very important consideration, namely, that there is scarcely any disease which is the cause of greater physical pain, which is accompanied by so many crises of mortal agony. A patient with thoracic aneurism suffers all the pangs of dissolution a hundred times before death actually comes to his relief. The grim spectre is ever at his elbow. In the full possession of all his faculties he knows not what moment may be his last. Often he cannot lie down at all, but must seek his rest in a reclining chair. His breath comes in gasps. His body is racked with pain from the pressure of the tumor on sensory nerves. All his vital functions are compromised by the interference of the tumor with the phrenics and pneumogastrics. Even his voice is taken away. If any condition of prolonged and hopeless physical distress ever is a justification for suicide, then

such a condition we have depicted. At present it seems that the attitude of many of our hospital men is such as to discourage any attempt on the part of the surgeons to bring relief, if even but temporary, to these unhappy victims. If medicine does not relieve them, they are abandoned as hopeless cases. Perhaps they are, yet their condition is so pitiable, their fate so certain and so speedy, that it does seem to me to be one of those emergencies in medicine, where we are justified in taking exceptional risks for our patient. These are not of those cases, where with non-interference the patient may live a long time. Their lease of life, as has been shown, is but short, and in the event of the failure of medical treatment, which should always receive a fair trial, it does not seem to be an unjustifiable risk to resort to operative measures which promise even a remote prospect of relief, if not of eventual cure. I have said that I believe in preliminary medical treatment, that is, of all cases in which the duration of the disease has been but short and where there are no symptoms which point to early rupture.

The methods of medical treatment may be divided into two classes: first, that method by rest, diet and medication, which is a modification of the treatment of Valsalva. Second, that by medication alone with the iodide of potassium, the patient being left to follow his ordinary vocation. With regard to the methods of Bellingham and Tufnell, it may be remarked, that they depend for their success first, on the diminution in the number of pulsations, which the contractile force of the heart communicates to the sac. Tufnell's rule is that the pulse be reduced to sixty per minute. Let us consider to what extent this reduction must affect the hydraulic action of the blood on the aneurism. It is to be remembered that a sacculated aneurism communicating with the aorta by a comparatively narrow orifice, presents the physical characteristics of a hydraulic press. We have a large chamber communicating by a small orifice with the aorta, the heart being the source of the power. We know the immense multiplication of the initial force which is secured in this manner in the press. This explains the enormous destructive power of the sac on surrounding tissues. Now if we slow down our pump 20 strokes a minute, it is evident that we diminish the number of blows which the blood, a totally incompressible fluid, delivers on the walls of the sac 28,800 a day. I have assumed that a person engaged in the ordinary avocations of life will average about 80 pulse beats a minute. This includes the acceleration which is occasioned by extra muscular effect, and if from this estimate we deduct the 3,840 beats required by the average pulse of 72 during eight hours of sleep, we shall still have a reduction of over 25,000 beats per day, or to reduce this to percentage, we have the aggre-

gate daily strain from hydrostatic pressure lessened by 25 per cent. But in the Valsalva-Tufnell treatment it is not alone the number of the heart blows which are lessened but also their force. Rest alone will reduce the number of the beats considerably, and the volume of the pulse is lessened as well, perhaps to an equal extent, by the regimen which includes not only the reduction of the amount of solids to the smallest extent that is consistent with the preservation of life, but also in the withdrawal of all fluids to a similar extent. These two factors, the reduction of the number of the heartbeats to the minimum, and the simultaneous reduction of their volume constitute the whole philosophy of this method. Certain details of the older methods of attaining this result are now known to be unnecessary, such as the frequent bleedings of Valsalva, but the rationale of the method is sound. We know that the laminated white clot which forms the protective barrier against the hydrostatic pressure within the sac, does not form a layer of equal thickness throughout the interior. It is thickest in those portions of the sac which are out of the general current, so that the blood forms there a sort of eddy with very slow motion. It is evident that any unusual force of circulation arising from occupation, unusual exertion, or peculiarity of posture must have a disquieting influence on the blood at these points of rest within the sac, the maintenance of which during a long interval is essential to the uninterrupted deposit of fibrin within the aneurism. The more complete and absolute the rest, the more rigidly the recumbent posture is maintained, the less the disturbance of these eddies within and the greater the chance of cure. Another element in this process of cure not to be overlooked is the fact, that as the volume of the blood is decreased its coagulability is increased. I have seen patients that have been subjected to this rest cure, if you please to call it so, in whom I am sure that the essential principle of absolute rest was not carried out as rigidly as possible. All avoidable muscular movement should be absolutely prohibited. The most that should be permitted to the comfort of the patient is the occasional assumption of the semi-recumbent position. He should never be allowed to assume this posture with the aid of his own muscles, but should be assisted by others. He should not feed himself, but should be fed by a nurse. His arms should be used as little as possible, never to hold a book or to assist himself. Every movement, however slight, increases the force and number of the pulsations of the heart, and the resultant is a force multiplied as many times as the area of the sac exceeds the area of communication of the aneurism with the artery.* It is this fact that, as I have before suggested, make these affections so formidable. We are dealing with a hydraulic press

whose walls are not of iron but of yielding tissues, and the power is exerted not to lift a weight as in the mechanical appliance with which we are all so familiar, but in stretching the tissues which enclose the power. Therefore, every unnecessary heartbeat is an additional blow against the patient's life, and diminishes his chances of recovery. Therefore rest in this method of treatment should be as absolute as circumstances permit, and the necessity of complete muscular inaction should be impressed on the patient so that when not watched, he may not engage in the slightest exercise. Such a patient should not raise his hand to his head. Drugs have been administered to diminish the force of the circulation, notably aconite, veratrum viride, and hydrocyanic acid. If the pulse cannot be brought down to sixty, the use of aconite seems to be desirable. Hydrocyanic acid has the reputation of alleviating pain as well as reducing the rate of the pulse. In cases accompanied by much suffering this drug may thus accomplish a double purpose. I am somewhat at a loss to understand the reason for the administration of the iodide of potassium in connection with this mode of treatment. Certain it is that iodide has the power of *diminishing* the coagulability of the blood, the very factor of safety on which we must depend and which it is our object to increase to the uttermost. The treatment of aneurisms by the administrations of this drug, I have classified as the second method of attempting cure by medical measures. It was first used by Dr. Chuckerbutty, of Calcutta, its most prominent advocate in recent times being Balfour. When we come to an investigation of the cases reported in which the iodide has been of benefit, I confess that I am unable to be as enthusiastic in its praise as are some of my friends and colleagues. Balfour, up to 1872 had published an account of 12 cases, in which amelioration had been effected by the administration of the drug. In not one of these cases was the aneurism reported as cured. The statement is simply that the pulsations became less vigorous, and that there was a diminution in the volume of the tumor, in one case leading to its almost complete disappearance. This, be it remembered, is the report of the most enthusiastic supporter of the iodide treatment. A number of other writers have also reported cases in which considerable improvement has followed the administration of this drug. The authentic cures are, however, few and far between. Barwell Holmes and Sir Wm. Gull all report somewhat emphatically against the drug; Dujardin Beaumetz says: "For my part, the more I examine into the cases in which I have obtained amelioration and even cures by iodide of potassium, the more I am convinced that this medicine acts not on the sacculated aneurism with a pouch . . . but on such cases as are simply

cases of aortitis with dilatation of the vessel." Such cases as these, it seems, are exactly the conditions which we should expect in a large vessel the subject of a primary endarteritis which in a small vessel leads to obliteration, but in a trunk of the size of the aortic is followed by dilatation, from a weakening of the muscular and fibrous coats. Such a lesion may well be syphilitic, and is one which we should expect to be benefited by a course of the iodide. Nor is it at all strange, that the succulated aneurisms should pulsate less vigorously during the administration of the iodide. All the potassium salts are depressors of the heart's action, and when we take into consideration that the initial dose recommended by the promoters of this treatment is from 5 to 10 grains, to be increased until the patient is taking 90 to 400 grains a day, it is not at all surprising that the pulsation of the tumor should diminish, and as its nutrition is impaired with all the other tissues of the body, its size also.

Notwithstanding the adverse criticisms which have been made on the use of the iodide, as it can do no immediate harm, it ought still to be tried, if not in all cases, at least in those where there is even but a suspicion of syphilitic taint.

I pass on now to a consideration of the surgical treatment of those cases of aneurism, which, having resisted all medical treatment, are yet evidently rapidly advancing to that point where it is evident that they will carry the patient off from overwhelming hæmorrhage due to rupture of the sac. The first question, which it is fair to ask ourselves, with regard to such a case, may well be, whether we shall abandon the patient to his inevitable fate without making any effort to evert it? The final decision of such a question must, no doubt, rest with the patient himself. If we can only say to him, to assist his decision, that he is absolutely beyond our skill, and that any effort on our part, to give him relief by surgical means, will result only in a speedier death than that threatened by the disease, even though the patient asks for operation, we must refrain, for we have no right to assist him to commit suicide. Intense though the sufferings of the patient may be, to us has never yet been given the right to produce euthanasia. It may be a question in casuistry to decide just when it is ethical for us to advise such a sufferer to take a great immediate risk for the very remote hope of benefiting an otherwise irremediable condition. I myself think that if there is any hope whatever, however remote, under the conditions stated, it is right for the surgeon to make the statement clearly and fully to the patient, and then if he is willing, knowing all the risks of the procedure, to give him the benefit of a chance which may be but one-tenth of one per cent. His risk otherwise is total.

There is only one way by which we can expect

to benefit aortic aneurisms, and that is by inducing in some manner the formation of the hard, white clot, the so-called active clot, which alone can present an effective barrier to the hydrostatic pressure on the walls of the tumor. Some of the methods, which I shall briefly mention, have been deficient in just this particular, namely, that instead of favoring the deposition of the active clot, they have instead promoted the formation of the soft and soluble passive or red clot, which has soon been re-absorbed, or, breaking down, made its appearance elsewhere as an embolism. The method of injecting a coagulating fluid into the sac, was one of the first means that surgeons adopted against these tumors. I have already stated the objections to the method, which, in aneurisms of the arch, would be insuperable, because of the danger of embolism of the great blood vessels of the brain. Although the production of embolisms in the blood vessels of the extremities might be prevented for a time by compression of the abdominal aorta, the soft nature of the clot absolutely forbids us to expect anything but harm as a result of these injections. I believe that they are totally unjustifiable. The introduction of foreign bodies into the sac is a method which is comparatively recent, originating with the late Dr. Moore, of Middlesex, England. In 1864, he introduced into a thoracic aneurism twenty-six yards of fine silver wire through a fine canula. The patient died on the fifth day thereafter from inflammation of the sac, the surrounding parts and embolic infarcts in the kidneys. I can find no record of the findings as far as the condition of the sac is concerned, and the character of the clot, induced by so large a quantity of wire. The occurrence of an inflammation in the sac so intense as to extend to the surrounding parts certainly suggests that sepsis had more to do with the unfortunate result of this case than the mere introduction of the wire, and the infarctions in the kidneys increase this probability. This case cannot fairly be cited as unfavorable to the method. Many other similar cases are cited in the journals, in which this procedure was resorted to before the days of antiseptic surgery, and certainly no one can conceive of a more dangerous procedure than the introduction into an aneurismal sac of material of whatever nature, which was not itself entirely sterile; the most recent cases reported in this vicinity, in which this method was adopted, I find in the *Medical News* of April 9, 1887, both reported by Dr. Abbe, of New York. In the first case, seventy-five yards of No. 00 piano wire was used, and subsequently a current of electricity passed through the coil, as the reporter says. Result, death on the twenty-second day. In this case no autopsy was allowed, therefore it is impossible to say what was the condition of the clot within the sac, which is perhaps the most important question to be settled, if we are to come

to any decision as to the desirability of continuing these attempts with wire. Two comments may be made on this particular case. The first is with regard to the material used. If I were asked to select the most unsuitable form of wire for this purpose, I should choose piano wire, which possesses the highest degree of elasticity and spring, and introduced into a thin or even a thick sac, is certain to exert dangerous and constant pressure on the interior of the sac wall. It must, as far as I can see, become the reverse of the elastic ligature, exerting a constant pressure from within outward. I confess I should have expected a fatal termination much sooner. The utility of introducing such an enormous quantity of wire may also be doubted. It must take a long time, and the larger the amount of wire which we are obliged to handle, the greater is its liability to become infected, no matter how carefully it has previously been sterilized. In the second case, which Dr. Abbe reports, he first introduced 100 feet of No. 1 catgut. This procedure was followed by a rise in temperature to 102° F., which subsequently subsided. The effect on the tumor was not permanent, and nine days thereafter the reporter introduced 150 feet of fine steel wire, and passed a current through the wire, the other electrode being a copper plate placed on the patient's back, thirty-six cells of battery used, kind not mentioned. The current was continued for an hour, at the end of which time the patient was reported to have suffered not at all from the operation, either from shock or pain. He died on the second day thereafter from rupture of the sac into the trachea. The same criticisms seem to me to apply to this case as to the previous one. Steel wire in such a quantity must have exerted considerable pressure outward on the walls of a very thin sac, and it does not seem to me to make much difference that the tumor is said to have ruptured at a point not in contact with wire. As a matter of fact, so large a quantity of springy wire within this sac must have exerted considerable outward pressure, and naturally the sac would burst at its weakest point, as it did. In speaking of the use of electricity in connection with this coil of wire, I infer that the reporter expects the current to pass through the entire coil, as he speaks of three cases in which electricity was passed through an extensive wire coil, in his résumé of the subject. It is possible that he overlooked the fact that electricity takes the shortest path and that of least resistance between the two electrodes, and that as his coil is not insulated, the current must pass in a straight line across the contiguous coils instead of around the entire coil, and as these points are points of contact there can be no electrolytic action at all. If in the ordinary operation of electrolysis, the poles are made to touch, the current passes from one pole to the other without any influence on the

fluid whatever, and this is what must have happened in both of Dr. Abbe's cases. This is almost absolutely certain in the first, for who can imagine a current from thirty-six cells passing through a fluid medium for one hour without the production of gas within the sac, provided there had been any electrolytic action whatever. Yet Dr. Abbe expressly states that there was nothing of the sort. It seems to me that catgut is not a material which ought to be used in this connection, as however sure we may be that its exterior is sterile, as it is not possible to boil it, we can never be sure of its sterilization within. Moreover, as it is soon absorbed, and as the firm, white clot upon which we rely is deposited slowly, it cannot be depended upon as a basis for this formation.

(To be continued.)

ON THE TREATMENT OF FLATULENCE.

There are probably few disorders of common occurrence which, without being of a serious nature, give rise to so much discomfort as flatulence. The malady is the constant companion of a large number of persons, which takes away from them the full enjoyment of life. I exclude from consideration in the remarks I am about to make, cases of gastrectasis and organic disease of the stomach and intestines; and it is therefore of flatulence in association with functional diseases of the digestive organs, or as the sole or chief complaint, of which I shall speak.

In the class of cases with which we are concerned, flatulence occurs under a variety of conditions. It is most frequently met with in connection with slight degrees of chronic gastritis; it sometimes is one of the symptoms of acid dyspepsia; whilst in many cases neither of these conditions is present, but the patients are sufferers from atonic dyspepsia. The flatulence may be of the stomach, or of the intestines, or of the two combined. The usual story we hear from the patient is as follows:—Soon after a meal, but sometimes quite independent of the ingestion of food, a feeling of fulness at the epigastrium is experienced. The sufferer feels he or she would like, and sometimes is compelled, to loosen all constricting garments round the waist. A horrid sense of oppression is felt, a difficulty of breathing, with sighing respiration, is experienced, and often there is palpitation of the heart. Not infrequently flushing of the face occurs, and sometimes the hands and feet are cold. In extreme cases the patients have a distressing feeling, as if they were about to lose themselves; or actual vertigo occurs. In many cases the symptoms persist for an hour or two, and gradually subside. Or, happier, the cardia relaxes, some upward escape of gas takes

place; after which, if sufficient, rapid relief occurs, the oppression is removed, the breathing becomes easy, the palpitation disappears, and the other symptoms subside. The above description applies to cases which are mainly gastric. When the flatulence is intestinal, great tightness of the abdomen is experienced, it is distended and tight as a drum, pain is felt usually in the left hypochondrium, and loud rumbling noises are heard in the bowels. If downward escape of gas occurs, the relief may be rapid, otherwise the discomfort may continue for hours.

What is the explanation of flatulence? What causes the distension of the stomach and bowels? Various theories have been advanced to explain the phenomena:

(1) *Swallowed air*.—A certain amount of air is swallowed by all persons in the processes of mastication and deglutition, the air being incorporated with the bolus of food; but there is no reason to believe that more air is swallowed by sufferers from flatulence than by healthy persons. It is a physiological process.

(2) *Fermentation*.—It is thought to be due to fermentation processes occurring in the food in the stomach. This is a view very commonly held, and which apparently receives some support from the effects of antizymotic drugs in the treatment of flatulence. The subject, however, is one of much complexity and difficulty. The remedies most used, such as creosote and carbolic acid, are weak antizymotics, and are given in such small doses that it is scarcely credible their action is so simple as to arrest fermentation and decomposition. Dr. Maguire has made some very sensible and valuable remarks on this subject, showing that, in quantities in which these remedies are used in treating disorders of the stomach, they must be practically inert as antiseptics, though he fully admits their efficacy. Moreover, Sir William Roberts has pointed out that fermentative processes are too slow to account for the rapid development of flatulence in dyspepsia; and he believes that fermentative processes, whether toruloid or bacterial, can only take place when food is retained in the stomach for a very long time; twenty-four or forty-eight hours, or longer. We must therefore dismiss fermentation of the contents of the stomach as the source of the gas in the stomach in cases of ordinary flatulence.

(3) *The evolution of carbonic acid gas in the stomach* due to the action of residual acid mucus in the alkaline saliva swallowed with the food. This, as pointed out by Sir William Roberts, is a possible cause of flatulence in acid dyspepsia. In many cases of flatulence, however, there is no evidence of acidity, and it will not, therefore, account for all cases.

(4) *Regurgitation of carbonic acid from the duodenum*.—This, again, is a possible source of the

gas that distends the stomach; but it can occur, probably, only when the gastric juice is hyperacid, or otherwise it would be of much more common occurrence in the healthy.

(5) *Want of gastric tonicity*.—Most of the sufferers from flatulence are the subjects of atonic dyspepsia, in whom there is no evidence of excess in quantity or altered character of the gastric juice, but in whom the muscularity of the stomach, often in association with a general flabbiness of the whole muscular system, is at fault. Thus it happens that when food is taken into the stomach this organ, instead of bracing itself to its work of muscular activity, so as to move its contents about by vigorous peristaltic contractions, *relaxes*, and the gas always present in the stomach, without undergoing any augmentation in *quantity*, undergoes an augmentation in *volume*, occupies a greater space, distends the viscus, impedes the descent of the diaphragm, causing an impediment to breathing, pushes up the heart, causing palpitation, and by a reflex process, gives rise to the other symptoms which are so frequently associated with flatulence.

The proofs that tonicity of the stomach is at fault are numerous. The great majority of sufferers from this complaint present, if sought for, evidence of nervous exhaustion or nervous instability produced by a multitude of causes. This view that flatulence in general is caused by a want of tone of the stomach, is also confirmed by the effects of treatment. In most cases relief is obtained, not by dieting, which, apart from correcting gross errors of management, is of little avail; not by correcting acidity, which is frequently absent; but by measures which, by improving the general health, increases the nervous vigor of the body and the tonicity of the gastric muscularis.

That nervous influences are capable alone of bringing about flatulence there is abundant evidence to show. All are familiar with hysterical flatulence—how suddenly it appears, quite independently of food. Again, it has fallen to the lot of many to witness the sudden and intense flatulence, gastric and intestinal, which occasionally supervenes on some severe nervous shock. Or, again, many have witnessed the intense tympanites which occasionally occurs in the moribund when the *vis nervosa* is exhausted. One of the most striking instances of this sudden distension of the stomach by gas I have known occurred in the person of a late and, at one time, very popular poet. His account of his sufferings was very instructive. He told me that when he commenced walking he could feel his stomach swelling, his breathing became difficult, and the oppression was so great he was compelled to stand still. He would remain for some minutes, often in front of a house, and told me he was sometimes afraid of being arrested

for "loitering with felonious intentions"—a charge from which his portly frame, venerable appearance, and benevolent expression sufficiently protected him. As he stood still he would gradually feel the stomach become smaller and smaller, his breathing was relieved, and he would be able to resume his peregrinations. The same thing would occur sometimes two or three times in the course of his morning walk. There was no disease of the heart, no marked emphysema, but the patient had a feeble digestion. I believe that what occurred was that, with a feeble muscular and nervous system due to his sedentary habits, in the muscular efforts of walking he used up his little store of nervous energy, and his stomach, yielding to the pressure of the contained gas, became distended. When he rested, the nervous energy previously expended on the exercise returned, and the stomach regained its natural size by increased tonicity.

The great majority of cases of flatulent dyspepsia are patients who have got into a condition of impaired nervous vigour. As we all know, the causes of such a state are legion. Excessive mental application, with its attendant sedentary habits, or the latter alone without the former, are frequent causes. The want of attention to maintaining the full vigor of the body is alone sufficient. The excessive use of tea and coffee or the abuse of tobacco, too great strain on the sexual powers, and all other causes that bring about a debilitated or unstable condition of the nervous system, are capable of inducing an enfeebled condition of the digestive organs, constituting what is often described as "nervous dyspepsia." Indeed, whether we approve or adopt this term for the complaint or not, I believe it expresses the general truth that in the class of cases I am discussing the flatuency is essentially due to a lack of power in the nervous system, inducing a deficient tonicity of the muscular coat of the stomach. As already said, it is frequently associated with gastric catarrh, which contributes to its causation when present. In such cases the tongue is coated and often indented by the teeth, there is pain after food, and tenderness in the epigastrium; it is often—indeed, generally—accompanied by constipation. In some cases there is pain in the left hypochondrium and borborygmi, relieved or removed by downward discharges of gas. But in many cases the functions of the stomach and bowels are in other respects well performed, the tongue is clean, there is no pain after food, no acidity or heartburn. It sometimes occurs independently of food.

Having explained what I hold to be the essential nature of the complaint, I pass on to deal with its treatment. The first thing is to correct what is wrong in the life and habits of the patients. It is usually found they are, consciously or uncon-

sciously, overtaxing their nervous powers rather than overloading their stomachs. Hence it is usually of greater importance to prescribe longer hours of rest in the recumbent position than to order a rigid or restricted dietary. Of course, obviously indigestible food—such as uncooked vegetables—and dietetic articles found by experience to disagree should be avoided, but a varied diet should be encouraged. The morning bath, and outdoor exercise short of fatigue, and everything that makes for health should be encouraged.

We come now to the drug treatment. The chief thing is to aim at increasing the nervous vigor, and hence tonics, especially nerve tonics, are of the greatest importance. Pre-eminently stand nux vomica and its alkaloid, strychnine. If one were restricted to a single remedy, the choice would certainly be strychnine. When flatulence is associated with pain after food, and a coated tongue indicating gastritis, the following prescription should be given:—

R—Potassii bicarb. vel sodii bicarb. ʒ ij.
Sp. ammon. arom., ʒ jss.
Liq. strychninæ, ℥ xxx.
Sp. armoraciæ co. vel sp. cajuputi, ʒ jss. ʒ ij.
Sp. chloroformi, ʒ j.
Infus. calumbæ vel gentianæ co.,* ad. ʒ vj.
M. ft. mist. A sixth part three times a day
between meals.

The alkali and bitter clean the tongue and correct the disordered state of the gastric mucous membrane. The strychnine braces up the muscularis, whilst the carminatives, horseradish or cajeput, and chloroform excite reflex contractions of the stomach. If the pain in the stomach is great, one drachm of Schacht's liquor bismuthi should be added to the mixture. In addition to the above, the following pill should be prescribed:—

R—Acid. carbolic, gr. xij.
Zinci valerianat., gr. xx.
Aloinæ, gr. vj.
Ext. nucis vom. gr. ʒ, vel strychn., gr. ʒ iʒ.
Oleo-resin. capsici, gtt. j.
M. ft. pil. xij. One pill night and morning.

The aloes to be omitted when the bowels act sufficiently; but in the great majority of cases constipation is present, due to torpor or want of tonicity of the colon, producing intestinal flatulence. Of the value of carbolic acid in such cases

* In prescribing vegetable infusions as stomachics, it is of the utmost importance that they should be recently prepared. Concentrated infusions are an abomination. We all know the difference between a cup of coffee made from so-called "essence of coffee," and a cup of coffee prepared from the recently roasted and ground berry. The one is a very nasty compound, the other a very grateful and refreshing stomachic beverage.

I have not the smallest doubt, in spite of the difficulty, as already stated, of explaining its action. Menthol or creosote may be used to replace the carbolic acid, although the latter is, in my experience, by far the best. *Pil. assafetidæ* co. is also of much service, and may be used instead of the valerianate of zinc. When there is much tendency to spasm, $\frac{1}{4}$ or $\frac{1}{3}$ of a grain of extract of belladonna is a useful adjunct. In many cases where there is habitual constipation with frequent flatulence, this pill should be taken, with any of the modifications suggested, for months together; and patients whom I have watched for years, go back to such a prescription from time to time with invariable relief. When acidity is present, the same mixture and pill are frequently efficient, the alkali given between meals correcting the acidity in the residual mucus. In obstinate cases the bismuth lozenge of the *Pharmacopœia*, or, better still, the modification of it suggested by Sir William Roberts, sucked slowly between meals, is sometimes of service. When, as not infrequently happens, there is no evidence of gastritis or acidity, tonics should be given between the meals. Quinine and strychnine are the most important. They may be combined with iron, often with advantage; and Easton's syrup, or the compound syrup of the hypophosphites, are convenient forms of administration. When, apart from gastritis, there is marked pain—gastralgia—which occurs independently of food and is often relieved by a meal, arsenic is often of great service. It may be added to either the mixture or the pill. In enteralgia, Indian hemp often answers better than any other remedy, and may be given with the pill, in doses of $\frac{1}{3}$ of a grain, twice or three times a day. For the violent spasmodic attacks with great distension of the stomach and intestines, to which some sufferers from flatulence are liable, and which cause so much distress and often excite severe anxiety in both patients and their relatives, a powerful carminative and antispasmodic mixture should be in the hands of the patient; to be used whenever the attacks occur. The following is nearly always efficacious:—

R—*Sp. cajuputi*,
Sp. ammon. arom.,
Sp. chloroformi, āā ʒ ss.

M. ft. mist. "The antispasmodic mixture."
 One teaspoonful in a wineglassful of water every half-hour or every quarter of an hour, until relief is obtained.

A mixture such as the above relaxes spasm of the cardia pylorus, and intestine; causes reflex contractions of the muscular coats of the stomach and bowels; and, by permitting and promoting the escape of gas, affords prompt relief in nearly every case. After considerable experience of

the use of charcoal, I am of opinion that it is of little service in ordinary cases of flatulence. Permeated as it must be with saliva when taken in the form of biscuits, mixed with the fluid contents of the stomach, its powers of absorbing gas must be extremely small; and, as we have seen, putrefactive changes, over which it might have some action, are not in operation in such cases. The cases in which charcoal biscuits are useful in flatulence appear to me to be those with acid dyspepsia, where, like the bismuth lozenges, it causes an extra amount of alkaline saliva to be swallowed, which may lessen the acidity of the mucus in the stomach. The gist of my paper, however, is to urge the importance of tonics and antispasmodics as the rational and effective treatment of flatulence, by improving the muscular tone of the stomach.—Stephen Mackenzie, M.D., F.R.C.P., in *Pract.*

DUST.

Of the agencies which affect the well-being of mankind, there is probably no other so potent as that of the minute particles—organic and inorganic or mineral—floating unnoticed in the air we breathe, and, until recently, unknown.

The grosser dust which so unpleasantly affects us in dry and windy weather is undoubtedly annoying, but its influence is insignificant when compared with the effects produced by the minute particles invariably present even in the clearest and purest air. These particles may be divided into two great classes, living organisms, generally known as micro-organisms, microbes or germs, and dead and inert organic matters and inorganic particles. These latter may be termed cosmic dust and extend into the highest strata of the atmosphere which have been examined, but those bodies which are endowed with life are fortunately rapidly destroyed by fresh air, and probably also by light, so that their presence is most noticeable in the populous districts.

The medical action of these minute denizens of the air has been so frequently described in our journals that their pathological significance is well known to most of us, and it is fully recognized that we may attribute to them many, if not most, of the epidemics from which we suffer.

Unlike the inorganic particles, whose minuteness renders them capable of almost indefinite suspension in the air, the organisms are of such a size that they soon subside in still air, and it is due to this fact that the admirable methods now adopted for ascertaining their number and nature have been possible. Most of our knowledge of the subject has been obtained by modifications of a process devised by Hesse and elaborated by Professor P. F. Frankland and many others.

Hesse drew a known volume of the air to be tested into a long glass tube coated internally with "nutrient gelatin," a soft jelly which feeds the organisms and enables them to rapidly multiply. The jelly and tube were "sterilized" by heat before the experiment, and the tube was carefully closed with sterilized cotton wool after the air had been drawn in, so that the organisms found must have been contained in the volume of air examined.

The air in the tube being perfectly tranquil, the micro-organisms, which are so various that it is impossible to call them by a more specific name, soon settle, and rapidly multiply with the production of a small whitish patch known as a "colony," and plainly visible. As each colony is derived from a single parent we can ascertain the number of the organisms by merely counting them. It is to various modifications of this simple and ingenious device that much of our knowledge relating to such organisms is due. At first, most of the experiments were directed merely to ascertaining their number, but considerable progress has been made of late in the branches of biology dealing with their proportions as individuals. The subject is, however, of such extent that it cannot be dealt with here, and reference must be made by those interested, to the numerous published accounts in scientific journals on the subject.

Professor Franklin has published some interesting experiments showing the relative prevalence of micro-organisms at varying altitudes. In two gallons of air in the churchyard of St. Paul's, he found 70 microbes; in the same volume outside the Stone Gallery 34, and in that outside the Golden Gallery only 11. These remarkable differences are partly due to mere dilution of the impure by pure air, and partly to the germicidal power which pure air is found to possess. In two gallons of air in a street in South Kensington 554 organisms were found on a dusty day, while that volume of air on the Surrey Hills on a fine day contained only 2.

When we realize that not only disease but all putrefaction and fermentation, and perhaps all the changes which naturally occur in dead organized bodies, are due to these microbes, and when we read of the extraordinary precautions necessary to isolate the air under examination in order to prevent other organisms from entering and affecting the results, it is easy to understand how tenaciously the older experimentalists adhered to the theory that life could be generated spontaneously.

It is exceedingly surprising to learn that the air in our sewers when the liquid contained in them has not recently been disturbed, actually contains fewer microbes than the outside air, but it has been conclusively proved by the late Dr. Carnelly and others that this is the case, and the singular immunity from contagion enjoyed by

those who work in our sewers is by it to some extent explained.

It must not, of course, be imagined that all microbes are injurious to mankind. Many are actually extremely beneficial, and it is certain of them that the mellowing of cheese, the not unpleasant change which occurs in butter on keeping under proper conditions, the natural fermentation and souring liquids, and even the mellowing of some fruits must be attributed.

So much for the living. Let us now turn our attention to the inorganic particles whose influence—mainly for good—is of such importance to us. These particles vary in size from the coarse dust which, literally, "meets the eye," to the invisible particles before called comic dust. Only the latter require treatment here, and it is perfectly correct to say that but for them, life as we know it could not exist.

The blueness of the sky is due to innumerable reflections from myriads of dust particles, and it is to them also that light is transmitted from all parts of the heavens instead of only appearing from the part in which the sun happens to be located. Professors Langley and Pickering have calculated that the loss of light by a ray of light entering our atmosphere at the zenith, under which condition it traverses the shortest possible length of air, is about half, the remainder being mainly reflected and diffused by comic dust. It would probably be no exaggeration to say that but for this dust, the sky would always be intensely black except where the light from the sun, moon and stars passed through, and that the sun's rays would possess sufficient intensity to destroy every living thing.

One of the earliest investigators on the subject was the late Professor Tyndall, who showed that when a beam of light from a powerful electric arc lamp was passed through air apparently free from dust, the numberless reflections from the surfaces of the particles makes the air appear white and almost solid. Similar experiments made in air which had been allowed to remain quiescent for a long period failed to show such an appearance, and were taken as indicating that such air was dust-free; but more delicate methods of testing, which will directly be described, have shown that this is not entirely the case.

Professor Tyndall found that the electric beam failed to show the existence of dust in air which had been passed through a red-hot tube or through a flame, and he came to the conclusion that the dust was mainly of organic origin, and that its disappearance was due to its destruction by heat. There can, of course, be no doubt that such is partly the case, but it is probable that the inorganic particles which escape the action of the heat are too minute to be found by his test, and this is practically proved by the fact that the air

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collected from a non-luminous gas-flame, in which the most perfect attainable combustion takes place, has since been found to contain more dust particles than that from any other source.

The method of testing by which our most recent knowledge has been obtained, is due to the genius of Mr. Aitkin, and is characterized not only by the most remarkable accuracy but by the greatest simplicity. It is well known that mists and fogs are produced by the condensation of moisture on minute dust particles, and it was known at least a century ago that a fog is produced by saturating air with moisture and then partially exhausting it under the receiver of an air pump. This exhaustion cools and also supersaturates the air, and the separated moisture, instead of appearing as dampness on the sides of the receiver, condenses on the dust particles as a fog or mist.

Under ordinary conditions a fog is produced, the individual particles of which are so small as to remain suspended for a considerable time; but when the number of dust particles is small, and the moisture is, therefore, deposited in larger amount on each individual, a kind of "Scotch mist" is formed, which settles as a fine rain on the bottom of the receiver. By counting the number of the rain drops which fall, the number of dust particles may be ascertained—in fact, this method of operating bears some resemblance to that of Hesse, already described.

Mr. Aitkin arranged a graduated plate of polished silver at a known distance from the top of the receiver, so that the number of drops falling upon a given area, as ascertained by means of a magnifier, would indicate the number of dust particles in the column of air above it.

As the particles are usually so numerous as to produce a true fog whose settlement in drops would take an indefinite time, it is usual to mix the air to be tested with a large proportion—often two hundred times its bulk—of air which has been freed from dust by filtration through cotton wool. By proper "dilution" with pure air a mist may be produced whose individual particles rapidly settle and are not too numerous to be counted.

In one series of experiments Mr. Aitkin found in the open air 2,119,000 particles per cubic inch in fine weather, and 521,000 after much rain. In air collected at random in a room where gas was burning, 30,318,000 particles were found, while in air drawn from near the ceiling, over 80,000,000 were found. Air collected from a non-luminous gas-flame, in which combustion is more perfect than in a luminous flame, contained no less than 489,000,000 particles per cubic inch! These cubic inches of such air may be said to contain roughly as many particles as there are inhabitants on the earth.

On the other hand, the air on Ben Nevis, the purest air examined, contained only an average of

113,000 particles, the maximum in the summer and autumn.

So far as the writer is aware, no analysis has been made of the particles deposited from the air in these tests, but an examination of the dust which formed the nuclei of snow crystals and deposited itself upon the surface of snow on the great St. Bernard (over 8,000 feet high) has shown the presence of silica and magnetic particles containing iron. This and other evidence points to the probability that atmospheric dust is largely of volcanic and meteoric origin, and when we remember the extraordinary effect which the Krakatoa eruption produced on the sunsets even at enormous distances, there appears to be considerable evidence in support of that view.—*Phar. Jour.*

STERILITY.

This patient brings to your notice a complaint for which your advice will be often sought in private practice. She is twenty-four years old, has been married four years, and has never been pregnant. The reason for this has been differently explained to her, she informs us, at the two hospitals at which she previously attended. There can, however, be little doubt, when we examine her, that the condition which is at fault is that which is one of the most common causes of congenital, as opposed to acquired, sterility. You find that the cervix is long and conical in shape; it appears to be just within the vaginal orifice, and there can be no doubt that this condition, which in this case is also accompanied by an equally important obstruction of the cervical canal, is the cause of her complaint. The condition is, of course, congenital, and is due to the abnormal development of the cervical part of the uterus to the detriment of the proper development of the body of the organ. It is most commonly associated with some thickening or constriction of the cervical canal, and in this instance, you observe that when I draw the cervix outside the vaginal orifice—as you see I can easily do by means of this blunt hook—it is impossible to pass through the cervical opening even the smallest metal sound. Indeed, you observe that I can only pass this ordinary probe through the cervix with some difficulty, and the stenosis of the canal which therefore exists is in itself a simple mechanical explanation, as I will hereafter point out to you, for the occurrence of the sterility. But, in this instance, now that the cervix is in view, you observe that the tissue is congested and granular—a condition which probably has been caused by the unfulfilled function of conception, and the consequently unsuccessful irritation to which the cervix has been exposed. Now we will allow the cervix to retract itself to its normal

position and introduce this duck-bill speculum to draw back the perineum. Then it becomes evident that the swollen elongated cervix occupies a considerable part of the vagina. The only treatment that will give this patient, or any woman suffering from a like condition, any prospect of cure is by adopting the common sense treatment and removing the mechanical obstruction to conception. The operation is one which requires care both in its execution and in subsequent treatment, but otherwise it is by no means difficult. Formerly it was usual to remove the cervix *en bloc* by the *écraseur*. And then you will understand the possibility of the accident which occasionally occurred—to the danger of the patient and to the considerable discredit of the operator. The wire was passed round the cervix as high up as possible, and as it was tightened up by the screw, it not only crushed through and separated the tissues which it constricted, but, as you will easily understand, it drew down the mucous membrane above it to a very considerable extent. The consequence was that sometimes when the tissue which had been severed by the wire came away, it was found that the peritoneal cavity had been opened either in front or behind by the dragging down of tissues into the loop. On the other hand, well-skilled operators who desired to avoid this danger and who, therefore, used the wire at a lower level on the cervix, when they had cut through the tissue, sometimes found that there was still left a considerable length of the elongated cervix. Again, in many of these cases the result of the crushing of the tissue by the wire caused subsequent sloughing and a condition resembling that of septicæmia. Or again, in some instances, a contraction of the tissues was caused which really repeated the previously existing condition, and the last state of that patient was sometimes even worse than the first. Finally, we have to remember that we are, in these cases, not only dealing with an elongated cervix, but with a congenital contraction and obstruction in the cervical canal as well. So that it is not sufficient merely to remove the hypertrophied portion of the cervix, but we must also take measures to render more patent the canal which is left. I have, therefore, myself, for some years adopted what I believe to be a more rational and scientific method, and one, at any rate, which has proved to be, in its results, more uniformly successful than that which I have described. The patient, being under an anæsthetic and in the lithotomy position, the perineum is drawn well back by a duck-bill speculum, and the cervix fixed and drawn down by a double hook. Then, an ordinary sound having been passed to define the length of the cervical and uterine canal, and, therefore, the approximate position of the external os, the mucous membrane covering the cervix is cut circularly through with a sharp-

pointed bistoury an inch below this level. The cervix at this denuded circle is grasped by catch forceps, and then, slightly below it, the cervix is removed by one or two cuts of broad-bladed scissors. Any arteries are caught up and tied. Then the sides of the cervical canal are slightly incised, and the edges of the mucous membrane are brought together with one or two stitches, so as to retract the lips. A glass stem is placed in the canal of the cervix, and the wound, as a rule, heals rapidly, and the stitches can be removed about the fourth day; there is no raw surface left for the absorption of septic material, and it is very rare, in my experience, for any rise of temperature to occur. The glass stem, after a few days, may be replaced by a galvanic wire stem, and the patency of the canal is maintained until convalescence is complete, when the patient is permitted to rise and follow her ordinary occupation. The results of this treatment are not only that recovery from the operation is rapid and complete, but in a considerable number of cases the sterility has been completely cured.

This patient illustrates, in a minor degree, the same cause of sterility. She has been married for six years, but has never been pregnant; the cervix is of normal length and size, but the os is markedly small, and, to the finger, feels the size of a pin's head. On inspection, you observe that it is impossible to insert, through the orifice, even this fine-pointed probe—the case, in fact, is one of extreme cervical stenosis. She suffers from the dysmenorrhœa which is almost invariably associated with this anatomical condition, and the mechanical reason for the sterility is as plain as in the previous case which we have just seen. The treatment, therefore, must be directed towards removing the obstruction. Formerly there were many who advised—and there are, even now, some who practise—the treatment of this condition by gradual or rapid dilation of the canal by the passage of metal sounds in graduated sizes. As a matter of practical fact, however, the results are most unsatisfactory, seeing that the contraction is a congenital condition and inevitably returns immediately the dilating sounds are removed. The common-sense treatment, therefore, is to remove the constriction altogether by widely incising the sides of the canal, and this is usually effected in some such manner as the following: The patient being under an anæsthetic and in the lithotomy position, the perineum is drawn back by a duck-billed speculum and the cervix drawn down and fixed by a double hook. Graduated sounds are then passed of increasing calibre until the canal is rendered sufficiently patulous to admit the blade of a strong pair of scissors, and then first one side of the cervix is cut through close up to the internal os, and then the other side is similarly incised. The method of treating the lips of the wound

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varies according to the fancy of the operator; the object to be secured, of course, being the prevention of the healing process so that each lip shall separately glaze over and heal by granulation without effecting the union with the opposite side which would restore the original contraction of the canal. Sometimes this result is obtained with considerable difficulty, and many advocate the simple course of separating the lips by the examining finger once each day, so as to prevent the uniting together of the raw surfaces. The results of the treatment are often satisfactory, and the operation, properly performed and under ordinary antiseptic conditions, is a perfectly safe and harmless one. Occasionally indeed some hæmorrhage occurs, but this is easily controlled by plugs of cotton wool soaked in matico or some similar astringent.—Dr. Fenwick, in *Hosp. Gaz.*

CURETTING THE UTERUS IN CASES OF PUERPERAL SEPTICÆMIA.

Having been present during the very interesting discussion on the preventative treatment of "Puerperal Fever" (improperly so-called) at the last meeting of the British Medical Association (Obstetric branch) I was surprised that no allusion whatever was made to the treatment (by curetting with blunt wire) the cavity of the uterus in such cases. I am under the impression I was the first to suggest this treatment in the *Brit. Med. Jour.*, 1889, and my name appears in this connection in Neal's valuable "Digest" (section 1,595, third ed.) This suggestion, which I have on several occasions put into practice with satisfactory results, and which I still recommend in suitable cases, was commented on in a pamphlet published by Mr. E. Tennison Collins, Cardiff, viz., "Pathological Objections to Curetting the Uterus in Puerperal Fever," in which he condemns this proceeding.

His arguments, however, are not convincing to me, as he evidently supposes I use an instrument so sharp as to produce a breach of surface, which I am most particular to avoid by using only a *blunt wire loop* which I can attach to irrigating tube if required. A French gynæcologist (M. Rapin, Lausanne) who has adopted this treatment says, *Med. Press and Cir.*, Aug. 28th, 1895; "Everyone admits the utility in cases of retention of practising curettage as soon as symptoms of endometritis set in (fever fetid lochia) in order to relieve the womb of the tissues which would form a favorable field for the development of microbes. The curettage is superior to cauterization or intra-uterine injections."

I certainly consider that curetting with *blunt wire* (followed by drainage if necessary) much less dangerous than intra-uterine injections alone, and

for this reason: that the micro-organisms which exist in these cases are found in far greater number near the outlet of vagina, and consequently would be much more likely to be carried upwards into the uterus by syringing than by the use of curette. I cannot, therefore, agree with the last sentence of Mr. Collin's pamphlet, "It is unjustifiable to curette the uterus in puerperal fever."

For my own part, I much prefer to have recourse to curetting rather than rely on the old treatment by drugs, which may be very useful in conjunction, but too often proves useless alone. I cannot help thinking that *the antiseptic treatment in midwifery would be seldom required if the aseptic were more attended to*, one of the most important plans being *thorough flushing of the entire genital tract directly after labor*.

M. Rapin states, "After each delivery there remains a more or less large quantity of tissue in the uterus destined to undergo fatty degeneration and mortification, this is the decidua vera, and furnishes the greater part of the materials constituting the lochia."

Is it not common sense, I ask, to remove by flushing this debris? and so get rid of the primary source of mischief, which if left later on (more especially by contact with a broken surface, such as a lacerated cervix or perineum) innoculates the patient and sets up puerperal septicæmia.

Those who have not taken the trouble on themselves to *thoroughly wash out the uterine cavity directly after labor* (the time it can be best and easiest accomplished) can have little idea of the amount of debris which, if left behind, must take a considerable time to be expelled, and is certainly likely (to say the least) to prove a source of danger to the lying-in patient.

In washing out the uterus I place patient on the back and use either syringe or douche, plain hot water 110° previously boiled (a little tinct. iodine may be added if preferred), and keep left hand over uterus while fluid enters the cavity. The cervical canal being patulous it offers no resistance to introduction of tube; plenty of room for return currents, comforting to patient, stimulating, cleansing, and hæmostatic; in fact, everything to recommend the proceeding, and nothing (that I know of) to forbid its general adoption in all cases of labor and miscarriage.—Alexander Duke, in *Med. Press*.

THE REFORM OF MEDICAL STUDY.—The various boards are just now deliberating on the reform of medical study. The present system is due to the late Professor Langer, who was medical adviser to the Ministry for the Home Department. According to these regulations a five years' course is necessary for obtaining a diploma, and during this time the student has to attend classes in anatomy

and physiology (one half-year each), medicine and surgery (four half-years), obstetrics and ophthalmology (one half-year). With respect to the examinations, those in zoology, mineralogy, and botany may be passed at any time. After the close of the second year the student is admitted to the so-called first Rigorosum, consisting of practical examinations in anatomy and physiology, and theoretical examinations in anatomy, physiology, physics, and chemistry. The second and third examinations must not be passed before the close of the fifth year, after which time the student, on producing evidence of class attendance, is admitted to the final examinations. The second Rigorosum consists of a practical and a theoretical part, the former comprising the subjects of pathological anatomy and medicine, and the latter those of pathological anatomy, medicine, *materia medica*, and experimental pathology; there are also included two additional examiners in diseases of children and laryngology, who alternate. The third Rigorosum consists of practical and theoretical examinations in obstetrics, ophthalmology, and surgery, and a theoretical examination in forensic medicine. The lecturers on ology and syphilis alternate as additional examiners. After having passed these examinations, the Faculty grants to the student the degree of M.D. These regulations are obviously antiquated, their principal defect being that no attention is directed to matters of such great importance as public health and bacteriology, examinations in these subjects being open only to men who have already graduated and aspire to the position of a public official. It is now proposed that the examinations in zoology, mineralogy, and botany should be discontinued, but that a thorough knowledge of practical chemistry should be required, an innovation upon which much stress is laid by the boards, for chemistry daily produces new remedies (as many as 282 in the past year), and the practitioner ought to have an idea of their composition. The principal point, however, has reference to clinical instruction, because for a number of years complaints have been made of the imperfect practical knowledge of the students, an evil which is due to the spirit of centralisation prevalent in this country. According to this system, clinical teaching in medicine is limited to three clinics, and in surgery to two clinics. No wonder that the old amphitheatres of the General Hospital are overcrowded, and that a space hardly sufficient for 250 persons is occupied by 600 or 700. The boards, therefore, advocate that clinical instruction should be decentralised, that the chief physicians, extraordinary professors, and *docenten* should be allowed to read lectures, and that the students should have more frequent opportunities of seeing clinical cases. It is also recommended that slight operations should be entrusted to surgical students, a system which

has already been adopted in the clinic of Professor Wölfler in Prague. An examination in bacteriology ought also to be combined with that in pathological anatomy, and the study of syphilis should be obligatory.—*Vienna Correspondence, Lancet.*

HYSTERIC SIMULATION.—Dr. Mikuliez recently communicated to the Breslau Medical Society an interesting case of hysteric simulation in a woman of fifty one years. After a slight trauma in 1891 she was seized with pain and vomiting of blood and later, with faecal vomiting. These ceased but reappeared during the summer of 1892 in a more violent manner. The attending physician diagnosed a stricture high up in the rectum and applied gradual dilatation, with bougies. After transient improvement faecal vomiting again set in and a trial explorative laparotomy was done but nothing abnormal was found in the intestine. As later there developed an abscess in the vicinity of the sacrum the coccyx was resected. This was followed by a free interval of several months. In the beginning of 1893 vomiting again appeared when a preternatural anus was formed, and though it functionated well, the vomiting did not cease. Later, during the same year, she visited another physician, who amputated her right breast. The vomiting then left her. She came to Mikuliez to be freed from her intestinal fistula, to which the anus preternaturalis had dwindled. This was operated on, the intestine loosened from the abdominal wall and the gut sutured. Healing took place uneventfully, but all of a sudden she was taken with violent abdominal pains and faecal vomiting, and she demanded that another preternatural anus be made. In the meantime there was a great misrelation between the vomiting and the necessary meteorism and peristalsis, while the good condition of her general nutrition contrasted with her frequent vomiting seizures—often twenty a day. In her vomit there were found scybala, such as would be formed in the large intestine, while the faecal vomiting of obstruction is generally liquid. He, therefore, was no longer in doubt that she was hysterical and had her carefully watched, without result. As she was presented at a clinical lecture, she vomited up some faecal lumps covered with mucus. A stomach-tube was immediately introduced, and the gastric contents found to consist of innocent, sour smelling and half-digested food, without the slightest trace of a faeculent odor, while that which she had just thrown up had a pronounced odor of faeces and a neutral reaction. The patient had undoubtedly extracted the faeces from the rectum, and secretly put them into her mouth. In this manner she had succeeded in deceiving physicians for years, and led them to do one capital operation after another.—*Hospitals-Tidende.*

PROPRIETARY OR PATENT MEDICINES.—American medical, pharmaceutical and trade journals, usually keen to detect a hidden advertisement in communications recommending new drugs and preparations when the same emanate from home sources, throw caution and ordinary business sense to the winds when it comes to recommending and puffing the very same class of merchandise, bearing a foreign name and recommended by foreign authority. The success of one or two German chemicals, the products of synthesis, opened the doors for a flood of antiseptins, antifebrins, antipyrins, and other "antis" ending in "ol" or "in." They come to us covered all over with patents—patents covering the names, the process of manufacture, the ingredients (save those that are kept absolutely secret), the modes of dispensing, the package, the label—in short, everything that a patent can be made to cover. In a word, they are patent medicines in the very widest and strictest sense of the word; and yet they are received with enthusiastic welcome by press and practitioner, and are given, gratis and gladly, advertisements that money could not purchase for a home product, even though ten times more valuable and not one-tenth so much patented.

One of the proprietors of a drug of this sort recently established in America, on being approached by the solicitor of advertising for an American medical journal, answered very curtly that "they didn't have to advertise their article. They got all the advertising they wanted for nothing, in the shape of laudatory communications in the reading matter of the medical journals." Which was true, every word of it, and that in spite of the fact that it was a patent medicine. *The very journal for which the agent was soliciting, and in the very copy which he carried as a specimen, contained no less than six laudatory notices of the drug in question—one of them a communication covering several pages and heralding its virtues in almost every known form of disease.*

Per contra, the same journal had enjoyed for years a handsome revenue from the advertisement of a reputable proprietary medicine house of this city, but had persistently refused to admit within its reading matter a little notice commendatory of one of its specialties, the formula for which was printed on every bottle.

It is useless to plead that these imported patents are so valuable that the profession must have them and must use them, secret nostrums though they be. This is not true, nor is it true that the manufacturers over there are any more honest and frank as to the nature and origin of their wares than are American manufacturers of similar drugs. In proof of this assertion we call the attention of our readers to Gwalowski's merciless exposure of a new compound which is getting ready in Germany to make a descent on Europe and America

in the style of its predecessors—the antiseptic kreolin, of the wondrous value of which the advance guard of certificates have already commenced to appear in our journals. Will the latter be warned in time, or will they swindle themselves out of thousands of dollars by giving it the usual American welcome and gratis advertising?—*National Druggist*.

The present so-called ethical views held by our medical men really constitute a barrier to our scientific progress. They continue to act against our American chemists, and in the meantime prescribe freely German patented articles, why should they object to prescribing a really meritorious article if discovered and patented by an American chemist?—*Pharmaceutical Era*.

DOCTORS' WIVES AND PROFESSIONAL CONFIDENCES. — A London journal lectures medical men on their "leakiness" as regards the personal affairs of their patients. The editor says (we quote from the *British Medical Journal*) that the great sinner is the country doctor. It is, however, adds the *Journal*, only a matter of size. "Let the victim be but big enough, and urbans can babble as incontinently as any pagan of them all." The *Journal* is ungallant enough to hint the error often begins by the doctor telling his wife. The partner of his bosom too often makes it a test of the loyalty of her husband, that he tells her everything. "It is an old saying that a secret can be kept by three men if two of them are dead, but a woman conceals—what she does not know. A wise man will make it a rule never to speak to his wife of professional matters, never even to tell her the names of those who consult him."

A man may be wise enough to make such a rule, but will he be strong enough to keep it? Experience seems to indicate that he will not. The doctor is human and feels the need of a confidant; the wife is very human and likes nothing so much as domestic details.

We must deplore the "leakiness" of which the profession is accused. It is wrong; but there are imperfections in our social fabric which must exist for a long time—until, for example, woman ceases to be curious and man—to be her slave.—Ed. *Med. Rec.*

AN EASY AND READY METHOD OF CIRCUMCISION. —John W. Ross, Surgeon, United States Navy (Retired), says in the *Medical Record*. Retract the foreskin; insert the glans penis up to the corona into the open mouth of a glass test tube; draw the foreskin well forward over the end of the tube; tie a strong, small silk cord very tightly around the foreskin immediately in front of the flange of the tube; amputate the foreskin one-eighth of an inch in front of the constricting cord by a circular

sweep of the knife; unite the mucous and cutaneous edge of the stump of the prepuce by eight or ten fine interrupted sutures; cut the constricting cord; remove the tube; cover the cut edges well with powdered iodoform; encircle the anterior half of the penis with a roller bandage of iodoform gauze, allowing the meatus to project slightly for facility of urination without soiling or removal of the dressing; and keep the patient in bed, with the penis elevated, for from twenty-four to forty-eight hours.—*Maryland Med. Jour.*

URTICARIA.—Dr. Brocq (*Revue Internationale de Médecine et de Chirurgie Pratiques*) recommends, in the management of urticaria, the following measures:—

Apply locally the following salve:

R—Carbolic acid,
Ess. peppermint, āā grs. xv.
Oxide zinc,
Lanolin, āā ʒ v.
Pure vaseline, ʒ ij.

At the same time, prescribe each day from two to six of the following pills:—

R—Muriate quinine,
Ergotone, āā gr. iss.
Extr. belladonna, gr. ʒ-ʒ.

Before applying the ointment, one may apply locally a lotion with vinegar, coogne water or chloral as a base.—*Ex.*

IN BLEEDING HÆMORRHOIDS.—Complete rest in horizontal position. Bathe the region with cold boracic lotion. If the pain is acute, apply this ointment:—

R—Cocain. hydrochlor., grs. iv.
Extr. belladonnæ, grs. x.
Extr. krameriaë, grs. xv.
Vaselin, ʒij.

If the hæmorrhage is severe, apply a solution of perchloride of iron on cotton wool.

Reduce the hæmorrhoids with a sponge soaked in cold water. In the evening introduce this suppository:—

R—Extr. belladonnæ, gr. ʒ.
Extr. opii, gr. ʒ.
Extr. krameriaë, grs. xv.
Cacao butter, ʒj.

If the hæmorrhoids continue to cause annoyance, surgical intervention, either by forced dilatation of the sphincter, or by extirpation.—*Pract.*

"WATERLOGGING FROM ANÆSTHETICS.—"Dr. Joseph Price says that in his own work at present shock is simply unknown. What is sometimes called shock, is simply waterlogging with an anæsthetic." Commenting on this, the *Denver Med.*

Times makes the rather surprising assertion that "men and women graduate from the best medical schools in the country and practise surgery, and yet never know how to give an anæsthetic. A great deal of fuss is made about histology, microscopy, etc., and yet a student may attend three years in any one of the best medical colleges in the United States, and never receive one hour's practical experience in the giving of ether or chloroform. Even the internes in the hospitals are not instructed; they are simply allowed to suffocate, overpower and fight their way as best they can.

"The fact is, the operator dare hardly to offer a suggestion, the anæsthetiser is so extremely sensitive. As long as this condition of affairs continues, there will be 'waterlogged patients dying from so-called shock.'"

And we add: There will be an immeasurable amount of suffering endured by the most innocent and interesting of our fellow-beings, merely because the great majority of their medical attendants have never learned practically how to employ anæsthetics in labor; and because this class of patients, and this alone, think it their duty to be martyred!—*N. Y. Med. Times.*

"I must confess that I feel duty bound to say something good about your Wine of Cod Liver Oil with Peptonate of Iron. In all honesty I say that it is the best thing that I have used for the past 15 years, where cod liver oil is indicated. I have never been in favor of oil, although I have used it in emulsified form of different makes and have emulsified it myself, but never fully satisfactory. But in your above-named preparation I think I have found my ideal. In marasmus of a child I combined it with syrup of wild cherry. In lung trouble I combined it with syrup of wild cherry and syrup of tar."—Dr. Van den Berge, Grand Rapids, Mich.

A REMARKABLE CASE OF INCONTINENCE OF URINE IN A CHILD.—Four months ago I treated a remarkable case of incontinence of urine in a child. It was seven months old, and had urinated from fifteen to twenty times every night since it was born, requiring its wrappers to be changed that often. I gave it one-third of a teaspoonful of Sanmetto four times a day, and before one bottle was used the babe was well, and it still remains so. In the last two years I have used several dozen bottles of Sanmetto in the treatment of various affections of the genito-urinary organs, and with the most gratifying results in every case.—E. S. Athearn, M.D., North English, Iowa.

PERMANGANATE STAINS.—The stains produced by a permanganate solution are removed by a twenty-per-cent. solution of soda-bisulphide.

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TORONTO, NOVEMBER, 1895.

MATRICULATION IN MEDICINE IN ONTARIO.

There is a good deal of heart-burning among intending students of medicine who had not registered with the Medical Council previous to the last meeting of that body in June. We have been made acquainted with a goodly number of cases which seem downright hardships to gentlemen wishing to register, and who have been denied that privilege by Dr. Pyne, of course under instructions from the Council. The fact seems to be that a *specific certificate* is required; that equivalents are totally ignored, and that no matter how well a man may be educated, nor what proof he may present of a good training, evidenced by his having passed certain examinations, he cannot enter the sacred fold of the active medical profession without presenting to the registrar one, and one only, specific Departmental certificate. The single exception made is in favor of graduates in arts, who are entitled to register by statute.

This arrangement seems grievous to many well educated young men who, though not possessing the specific certificate from Educational Department, are, and have evidence to show that they are, equally well mentally equipped with those who do possess it.

Our standard is now high, higher even than that demanded by the General Medical Council of the United Kingdom. In their last printed regulations, *British Medical Journal*, No. 1810, pp. 577, *et seq.*, are set forth the various examinations which entitle a student to register before the British body.

It will no doubt surprise our readers to learn that there are no less than EIGHTY-SEVEN examinations, held in all parts of the civilized world, which are accepted in Britain*, as entitling a student to register in medicine; while in old, wealthy, cultured Ontario, the poor student must indeed present one of two certificates, viz., a B.A. degree, or that awful one—the Departmental.

The question of registration is of so vital importance to medical education in Ontario, that a short *résumé* of how matters stand, and have stood, should be of interest to our readers. Here it is boiled down to its practical, working, everyday basis.

We had years ago as the requisite for registration, the Third class certificate with Latin.

Next, Second class with Latin. Next, Departmental Arts; which was a gradual, but well-marked increase in difficulty.

When this last was adopted, students who had the first qualification were received up to a certain date.

Up to the present year, all students who have taken their Second class without Latin, have been allowed to register on presenting a certificate showing they had passed the Latin, and no Second class man was ever refused if he took the Departmental Latin.

Again, so recently as in June last, a large number of students who had taken the Departmental examination and failed in a few branches, say, one, two, or three, at the July examination,

*REGULATIONS OF THE GENERAL MEDICAL COUNCIL OF THE UNITED KINGDOM, 1895.

The Preliminary Examinations in General Education required to be passed previous to Registration as a Medical Student, shall be as follows:—(a) English Language, including Grammar and Composition. (b) Latin, including Grammar, Translation from specified authors, Translation of easy passages not taken from such authors (c) Mathematics, comprising (a) Arithmetic; (b) Algebra, as far as Simple Equations, inclusive; (c) Geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions. (d) One of the following optional subjects:—(a) Greek, (1) French, (2) German, (3) Italian, (4) any other Modern Language, (5) Logic.

A Certificate of having passed a University Examination required for Graduation in Arts, or a Senior or Higher Local University Examination, or a Senior Grade Examination of the Intermediate Education Board of Ireland, or the Leaving Certificate Examination (Honours and Higher Grade) of the Scottish Education Department wherein the specified subjects of General Education are included, may be recognized for the purpose of registration.

petitioned the Council to be allowed, as heretofore, to complete their examination in the following July; this was refused in every case, and the privilege of being registered on producing evidence of having passed all the branches required by the Council was now denied them for the first time, and without any notice having been given of this change of policy. None of them could possibly have the certificate of the Department, which up to the present year is only issued to students making a complete pass, thus virtually excluding them all. A small measure of relief has since, happily, been given by the Department.

Since the last meeting of the Council in June, the Registrar has been given strict orders to admit no one to registration who does not present the official certificate of the Department and *that only*, with the exception, as before stated, of graduates in Arts, who have the right under statute.

We also note, that the privilege heretofore enjoyed by holders of second-class certificates, which, by the way, is a much higher examination than many which would entitle to registration in Britain, of presenting themselves for the Departmental Latin, the Council has cut off without an hour's warning. Furthermore, the privilege heretofore uniformly allowed, and still allowed in all university examinations of which we have cognizance, to students taking the Departmental examination, and who partially failed, but who completed the examination the following July, of registering, as we have stated above, was denied them, until the Department gave the slight relief just mentioned; also without any warning, on the ground stated, that they have not presented the special certificate before spoken of, and which no one under the circumstances could possibly obtain.

Again, students who have finished their second year in Arts, and some indeed within a few months of taking their B.A. degree, have been refused registration as before, on the sole ground of their not possessing the specific certificate.

These men have evidently done more than is required for the specific examination. The refusal to register them is therefore an anomaly, to say the least of it. Equivalentents seem to be

entirely ignored in the present registration regulations of our Council, a matter of grave importance to the country and profession, and certainly of great hardship to young gentlemen wishing to enter medicine in their own province; and no warning whatever has been given of the sudden stringency in the regulations which has been sprung upon them.

In our next issue we shall give specific cases of what appears to us grievances to intending students of medicine. Space will not permit us to do so in this number.

LODGE PRACTICE.

Among the many ills that the medical profession has to contend against, one of the worst is lodge practice; where the physician contracts for a sum, not usually more than one dollar a year for each member, to treat all members of the lodge or club, no matter how long he may be ill or how many visits may be necessary.

The theory is that the physician gets the *entrée* into family practice in this manner, and that makes up for any loss he may sustain in treating the male members of the lodge. The practical fact is, that he only succeeds in cheapening the value of his services, to find that should any illness overtake the wife or children, his brother members will call in the services of some other doctor. This is true in a great many cases, and there can be no doubt that nearly one million dollars is lost to the profession in Ontario on account of lodge practice each year.

We also find that the women and children are forming lodges, for social purposes ostensibly, but for the real purpose of getting medical services, practically gratis.

If medical men cannot get practice without lowering the standing of the profession they should leave for some mercantile pursuit. It is a common saying that doctors are poor business men, and lodge work shows it, for from a business standpoint they are cutting their own throats, benefiting only a lot of working men, and others who on an average make as good incomes as their doctor.

Where do you find any other class of men eager to give their services for nothing? Do lawyers, clergymen, plumbers, or mechanics do so? Cer-

tainly not. Why then should our profession be the only one so blind, and unbusinesslike as to degrade themselves, and lose money by so doing? The members of the profession in London, Ont., have made an attempt to put a stop to the contract practice and every man in that city with the exception of six or seven has signed an agreement to do no more lodge practice after the expiration of the year, under a penalty of \$60 for each offence, provided every physician in the city signs the document. A similar effort is being made in Toronto, and will take effect, provided 95% of the physicians will sign. Many are afraid that men will be brought in to take up the work, but the ostracism which will be theirs, should deter any self-respecting men from entering into injurious competition with their professional brethren.

If there was a great *esprit de corps* among medical men this question could easily be settled, but it is an unfortunate fact that there is scarcely any cohesion among the doctors; keen competition and a lowered status of the profession render it difficult to solve any questions relating to the general welfare of the faculty.

LOUIS PASTEUR.

By the death of M. Louis Pasteur, Sept. 27th, the scientific world suffers a loss, not irreparable, but great. The medical world owes, perhaps more to him than to any man who ever lived. He was not a physician, but was educated as a chemist and spent the earlier portion of his life in that field of work. As every one knows, the later years of his valuable life have been devoted to pathology. He was the father of bacteriology.

It was Pasteur who first conclusively proved that fermentation and putrefaction were impossible, except in the presence of living germs; and that the microbes found in certain organic liquids, after exposure to the air, were in every instance derived from living organisms, thus giving final quietus to the old doctrine of spontaneous generation, and preparing the way for Lister's introduction of antiseptics and asepsis into surgery.

His greatest practical discoveries were, a method to prevent the grape vine pest, and inoculation against rabies. Every one knows the vast importance attributed to germs in the ætiology of disease.

To Pasteur, through his investigations in anthrax his discovery of the possibility of immunizing animals to that disease and others equally virulent, may be given the credit of laying the foundation of the great recent developments in prophylaxis. The idea of serum therapy may justly be accredited to him.

Born in 1822, his early life was one of severe struggle, but his indomitable will and his real love of science earned for him in turn, every distinction that the French Government could give him. By a decree of Napoleon III., not promulgated, he was made a Senator, and in 1885 became a member of the Legion of Honor, in which he was steadily promoted to the highest rank.

TORONTO CLINICAL SOCIETY.

The opening meeting of the Toronto Clinical Society, for the season, was held in St. George's Hall, Elm St., Oct. 9th. President Dr. J. E. Graham in the chair, Dr. J. N. E. Brown acting as secretary.

After the opening business Dr. Graham delivered the inaugural address. He referred to the great importance of clinical study, which he maintained should not be neglected, notwithstanding the demands made by pathology and bacteriology. The essayist then reviewed the study of medicine during the past century. There were three eras, that of the clinician, represented by Bright, Addison and Laennec; that of the morbid anatomist, represented by Rokitsansky and Virchow, pre-eminently; and that of the bacteriologist, to which the late Pasteur and Koch belonged. During the past ten years he said the attention of medical men was directed to the importance of clinical study; in this they were wonderfully aided by instruments of precision which were unknown to observers before. He attached great importance to the examination of body fluids. The subject of the great strides in the matter of scientific treatment was touched upon and bright prospects pointed out as possible in the near future.

Dr. A. A. Macdonald gave the report of a case in practice. The patient was a man aged fifty in whom the most prominent symptoms were: A history of strain, the appearance of a tumor in the

region of the pylorus, the occurrence of vomiting and diarrhoea, followed by ascites. He did not suspect aneurism. Dr. Baines, to whom the case was referred, said that he considered it a case possibly of cirrhosis of the liver, although few of the classical signs of such were present. To relieve the patient he aspirated the peritoneal cavity twice. Oedema of the glottis was the immediate cause of death.

Dr. H. B. Anderson gave the *post mortem* report. An aneurism about the size of a goose egg was found at the origin of the superior mesenteric artery, which vessel was completely occluded. The aorta was almost filled with organized laminated clots. The tumor had shoved the head of the pancreas up into the portal fissure and blocked the portal circulation. He then described how the collateral circulation was established. There were atheromatous changes in the arterial system, interstitial sclerosis of the kidneys, congestion of the liver and spleen, an emphysematous condition of the lungs and a very much hypertrophied heart.

Drs. MacFarlane, Grasett, Graham and Cook discussed the paper. Dr. D. Campbell Meyers gave an interesting description of a visit to Lourdes.

Dr. G. A. Bingham related the history of a very severe case of menorrhagia which had lasted fifteen years and reduced the patient to a most exhausted condition. Currettage, tamponage, electricity and all the ordinary means recommended for such cases had been tried. She finally consented to the radical operation of ovariectomy, which he performed. All symptoms disappeared, a complete recovery ensuing. One of the ovaries showed a cystic condition.

Drs. Baines and MacDonald discussed the value of electricity in these cases.

TRINITY MEDICAL SOCIETY.

On Tuesday evening, 22nd October, the first meeting of the Medical Society for the session of 1895-6, was held in the College building, Spruce Street. The meeting was opened with an eloquent address from the President for the ensuing year, in which he ably put forth the objects and aims of the Society, exhorting each member to do

all in his power for its advancement and welfare. He also spoke in glowing terms of the work done by the Society in its past and inaugural year. Following was a symposium on Typhoid, which was taken up under the following heads:—The ætiology, by Mr. McRae; pathology, by Mr. Clare; diagnosis, by Mr. V. A. Hart, and the treatment, by Dr. A. C. Lambert, of the Toronto General Hospital Resident Staff. These interesting papers were greatly enjoyed by the large assemblage of members present, and evoked considerable discussion, in which the following gentlemen took part: Drs. Rose, and Shuttleworth; Messrs. Oliver, Taylor, Nyblett and McRae. The reading and passing of the Constitution of the Society brought to a close a very instructive and enjoyable evening. The officers for the ensuing year are: Hon. President, Dr. H. B. Anderson; President, Mr. J. H. Allin; Vice-President, Mr. J. Donald; and Secretary and Treasurer, Dr. H. S. Roberts. Committee, Messrs. Shoemaker and Stanton; representative from the General Hospital Resident Staff, Dr. J. G. Lamont.

MORNING DIARRHOEA:—This distressing complaint must have been so often troublesome to our readers that we append the methods of treatment of Dr. Delafield, *Med. Rec.* If the disease occurs in women, before beginning any medical treatment, it is important to have cured any lacerations of the perineum or the cervix, displacements of the uterus, or disease of the Fallopian tubes which may exist. The methods of treatment which are ordinarily employed are:

1. *Change of Climate.*—The effects of this are often very satisfactory and in the milder cases very prompt. A person who has a morning diarrhoea for months may leave New York in the afternoon and the next morning begin to have formed passages. Unfortunately, a return to the city may be followed by a return of the diarrhoea. In the more severe cases a prolonged residence in a dry inland climate may effect a cure.

2. *Diet.*—The plans of diet usually followed are: (a) an exclusive diet of milk; (b) an exclusive diet of beef and hot water; (c) a diet composed of milk and meat alone; (d) a diet from which only the sugar and starches are excluded.

As regards the effects of treatment by diet, we

find that some patients are cured, some are benefited for a time, in some there is no effect at all, some get worse.

3. In a small number of cases the diarrhœa can be cured by daily lavage of the stomach.

4. *Drugs*.—As a rule, the number of the passages can be checked for a moderate length of time by the preparation of opium. The improvement only lasts while the opium is taken, and it is evident that the use of this drug ought not to be continued for any length of time. The subnitrate of bismuth, the subgallate of bismuth, and B-naphtol bismuth are said to give good results. The writer has not been very fortunate with them. Salol and naphtalin answers well in some cases, but have absolutely no effect in others. Arsenic, quinine, ipecac, belladonna, and cannabis are all very useful drugs. The drug which has given him the best results is castor oil, in doses from 5 to 10 drops.

TREATMENT OF DIABETES.—Robin (*Bulletin de l'Académie de Médecin; Univ. Med. Mag.*) employs what he terms an "alternating treatment" in diabetes. He believes that in this disease there is an increased activity of the chemical changes of general nutrition, and of the hepatic cells in particular, which is the result of increased activity of the nervous system. Hence he recommends drugs which diminish the activity of these general changes by acting primarily on the nervous system. The treatment is divided into three stages: (1) For four days a powder, containing about fifteen grains of antipyrin and eight grains of sodium bicarbonate, is given twice a day. In addition cod-liver oil is taken twice a day, and Seignette salt as a morning purgative. (2) At the end of four or five days the antipyrin is discontinued, sulphate of quinine prescribed,—six grains in a cachet at the mid-day meal. This is taken for six days, then discontinued for four days, and afterwards taken again for six days. Before the morning and evening meals a cachet is recommended containing arseniate of soda, carbonate of lithium, and codeia. (3) After fifteen days these drugs are discontinued, and the author prescribes, for ten days, a pill containing opium, belladonna, and valerian. The cod-liver oil is discontinued and the patient is allowed to drink a weak solution of bicarbonate of soda (1 in 125). In the case

of nervous women, or if there should be intolerance of the opium and belladonna pills, fifteen grains of potassium bromide are given two or three times a day for eight days. In addition to the medical treatment the diet is regulated. On account of the loss of inorganic salts in diabetes the author recommends the food to be well salted; to supply potassium salts he advises green vegetables, especially cabbage and endive, and also a weak solution of potassium tartrate to dilute the wine taken at meals; and to counteract the loss of phosphates of magnesium and calcium he prescribes glycerophosphates of lime and magnesia. He also recommends bouillon on account of the inorganic salts which it contains. If sugar is still present in the urine after the third stage of the medical treatment above mentioned the course is recommenced. After a second course, whether sugar has disappeared or not, the drugs are discontinued for one month. Robin has treated by this alternating method 100 cases of diabetes, in each of which the daily quantity of sugar excreted was 100 grammes or more. In twenty-four of these recovery has occurred; in twenty-five recovery is still doubtful; in thirty-three there has been considerable and permanent improvement; in eighteen the results have been negative.

DR. ROSWELL PARK in his speech before the recent meeting of Harvard Alumni Association, opened out in this way: A few weeks ago I attended a convention in one of the Canadian universities; and although I sat within ten feet of the chancellor on the stage, I was unable to hear anything that he said. They had that good old English custom of making a noise, and the students at the other end of the hall made such a commotion that it was impossible to hear anything that was said on the stage. Of course, you are aware of the Oxford and Cambridge customs, and it seems that they are still imitated on this side of the water. They also had a dinner afterwards, and I was asked to say something. In fact, our Canadian friends have a habit of calling to his feet every man who is still able to get there after a dinner. And I took occasion to allude, as gently and pleasantly as I could, to the commotion which I had witnessed and the scenes that had come under my observation; and I thought I would try them with a little anecdote about a

friend of mine, as I put it, who was making a Fourth of July speech in this country. During the progress of it he was annoyed a great many times by a man who persisted in asking him questions or making remarks, and the gentlemen finally called him down something after this fashion: He stopped abruptly in the midst of his speech, and said, "My friend, I want to speak to you. Are you a Christian?"—"Yes, sir."—"And do you go to church regularly!"—"I do." said he, "And do you believe in the efficacy of prayer?"—"I do; I say my prayers every night."—"Good. Do you believe in the doctrine of regeneration?"—"I do; I believe in it literally." He said, "Better yet. Now, my friend, I want to give you a piece of advice; when you go home to-night and retire to the privacy of your bedroom, get down on your knees and pray very earnestly and faithfully, pray as you never prayed before that you may be born again, and still-born." Now, they saw it, if they were English.

MESSAGE IN SPRAINS, BRUISES AND DISLOCATIONS.

—We have for some years looked upon absolute rest—as nearly absolute as possible—as being the best treatment for dislocations and sprains. Common sense points that way; much experience points that way; a knowledge of the process involved in the recovery of the damage points that way; and yet we see from time to time good authorities taking the opposite view as, for instance, Dr. Graham of Boston, who in the *Ed. Med. Jour.* states his belief in massage. He says that in beginning the rubbing, in a recent case, the injured parts should be approached gradually, after first rubbing at some distance on the healthy tissues. The first step consists of gentle stroking or effleurage. The second step consists in kneading the part. At the end of fifteen or twenty minutes' rubbing, gentle, firm pressure can be made over the swollen and recently tender parts, when the rubbing may be given a circular motion, with the greatest push upward. If this be done with sufficient tact, it will probably be agreeable to the patient rather than painful. At the conclusion of the rubbing a well-fitting bandage is applied. This should be repeated twice daily. It is claimed that such injuries treated in this way get well in one-third of the time that similar cases do under the usual method of rest and fix-

tion, and with less tendency to subsequent weakness, pain and stiffness. The author says, "Experience teaches that the sooner after a sprain massage is begun the quicker is the recovery."

STRYCHNINE IN NERVOUS COUGH.—Dr. L. Lichtwitz *Sem. Med; Med. and Surg. Rep.*, according to author, the best treatment of nervous cough of central origin (in choreic, tabetic and hysteric patients)—which differs from ordinary cough by the nearly complete absence of expectoration and by habitually disappearing at night—consists in the administration of strychnine in large doses. He begins with .6 milligrammes of strychnine sulphate per day, increasing by 1 milligramme every second day, until a daily dose of 8 to 9 milligrammes has been reached. The medication is suspended at the end of two weeks, to be resumed a week later. If no result is obtained after the second week of treatment, Dr. L. resorts to electricity, massage, or hydrotherapy; or prescribes a change of climate (sojourn in the mountains.)

A TREATMENT FOR ACNE OF THE FACE.—In an abstract from the *Bul. Gen. Therap.*, which appears in *Lyon Med.*, the writer gives the following formula, which, he says, has often been employed at St. Louis with success: Fresh lard, 750 grains; betanaphthol and styrax ointment, each, 30 grains. Application of this mixture should be made by strong friction every night for a week, then interrupted for six days, when they may be repeated if necessary, although it is often useless to do so. If there is an appearance of small acute clusters, which generally show themselves toward the second day, the acne is ordinarily cured or very much ameliorated at the end of a week.

THE LAY PRESS AS ADVERTISING MEDIUMS.—From a sister city we have received a newspaper containing details as to the *raison d'être* of a wonderful (*sic*) operation performed by a surgeon of that city. The paragraph is rendered more conspicuous by a woodcut representing a beautiful young lady in bed. This is awful, and we hope the surgeon has ere this publicly set forth how his name happens to appear in such wise. We note that his assistants were not of the city where the operation was performed, but of a neighboring

village, a fact which may be perfectly easy of explanation, or may be significant.

COMMENCEMENT 'DAYS. — Letters of father to son. *Nat. Med. Rev.* No. 1. "My Dear Son, —I am so glad to learn that you are starting in your noble profession with the idea that there is something higher and grander than the simple procuring of a livelihood. I am glad to see that you appreciate the opportunity which opens before you for doing good, without thought of the sordid gold which so often defiles those who handle it. Let this be your motto: 'He went about doing good.'"

No. 2. (One year later.) *My Dear Son,*— You cannot expect me to give you a thorough education and then supply you with means afterward. You should now be able to earn your living, it seems to me. Have you tried hard to collect some of your bills? I will not see you suffer, you know, but do not let the people get the idea you are going to do their work for nothing. Enclosed you will find a portion of what you request. 'The laborer is worthy of his hire.'

SALICYLIC ACID OINTMENT. — Bourget recommends its use for gonorrhœal and other forms of articular rheumatism, *Therap. Gaz.* :—


R—Acidi salicylici, }
Lanolin, } āā 3 ijss.
Oleij terebinth., }
Adipis, 3 ij.

It is reported of this application that the acid is so thoroughly absorbed that it is afterwards found in the urine in large quantities, also that local and general effects are most satisfactory.

A TEST FOR INCIPIENT DIABETES. — Professor V. Noorden says, *Med. Rec.*, he has discovered a new means of diagnosing diabetes in its very earliest stage, or even a hereditary tendency thereto. He gives the patient 100 grains of grape sugar, which in the normal subject has no effect, but in the incipient diabetic produces glycosuria. If this prove correct, it will be most useful in gaining for the diabetic the earliest treatment.

PERSONAL.—On September 25th, at the residence of Mrs. A. Frazer, Shakespeare, Ont., her

daughter, Miss Jean Frazer, was united in marriage to Dr. S. J. Rutherford, of Listowel (Tor. '89). Miss Watson, of Toronto, a college friend of the bride, performed the services of bridesmaid, while the groom was supported by his old college chum, Dr. J. L. Turnbull, of Clinton, Ont. The newly wedded couple left in the evening for an extended trip *via* Buffalo, Albany, down the Hudson to New York, and other eastern points.

AN OLD FRIEND IN A NEW GUISE.—The New York Pharmacal Association is now putting up LACTOPEPTINE IN TABLET FORM, which will, no doubt, give a fresh  impetus to the sale of this favorite agent. Every tablet has N. Y. P. A. stamped upon it, and weighs exactly five grains. It will be necessary, therefore, in prescribing Lactopeptine in future, to specify "Powder," or "Tablets."

THE QUININE TREE.—It is said, *Lancet-Clinic*, that the famous tree from the bark of which quinine is obtained furnishes no quinine except in malarial regions. If a tree is planted in a malarial district it will produce quinine; if it is planted in a non-malarial district it will not produce quinine. It is therefore claimed that quinine is a malarial poison, drawn from the soil and stored up by this wonderful tree.

SEAT WORMS—Will generally be removed by giving 3 to 6 or 10 drops of turpentine on a little sugar three times daily for two or three days, *Med. Sum.*, then follow with a full dose of castor oil and an enema of salt and water just before it operates.

LINES

TO A DELINQUENT SUBSCRIBER.

If I should die to-night—
And you should come to my old corpse and say,
Weeping and heart-sick, o'er my lifeless clay,
If I should die to night—
And you should come in deepest grief and woe,
And say, "Here's that two dollars that I owe,"
I might rise up in my great white cravat,
And say, "What's that!"

If I should die to-night—
And you should come to my old corpse and kneel,
Clasping my bier to show the grief you feel—
I say, if I should die to-night,
And you should hear, and there and then should come
And even *hint* about paying me that sum,
I might rise, galvanized—and then drop dead and dumb.

—Ex.

Books and Pamphlets.

PHYSIOLOGICAL FACTORS OF THE NEUROSES OF CHILDHOOD. By B. K. Rachford, M.D., Professor of Physiology, and Clinician to Children's Clinic, Medical College of Ohio. 12mo., 130 pp. Cloth, net, \$1. Cincinnati: The Robert Clarke Co. Toronto: Carveth & Co.

This little book is for the most part a republication of a series of papers which appeared in the *Archives of Pediatrics*. The August number of the *Archives*, in which the last of this series appeared, contained a four-page editorial on these papers, of which the following is the opening paragraph:

"The chapter which appears in the present issue of the *Archives* brings to a close the admirable series of papers by Dr. Rachford, on 'Certain Physiological Factors of the Neuroses of Childhood.' The series has been one of great interest, and has presented the result of much original research."

In their republication in book form these papers have been revised and many additions have been made. The chapter on Auto-intoxication has been entirely re-written, so as to include the extensive research work of the author on this subject. The book is an etiological study of a group of diseases which are the most common of childhood. It stands alone in the field it attempts to occupy.

PATHOLOGY AND TREATMENT OF DISEASES OF THE SKIN, for Practitioners and Students. By Dr. Moriz Kuposi, Professor of Dermatology and Syphilis, and Chief of the Clinic and Division for Skin Diseases in the Vienna University. With eighty-four illustrations. Translation of the last German edition, under the supervision of James C. Johnston, M.D. New York: William Wood & Co. Toronto: Carveth & Co. 1895.

The name of the author is a sufficient guarantee of the excellence of the work in the original. The translator has made an extremely interesting and lucid work in English out of it.

It is in the form of lectures, which contain the views of Hebra, modified as far as has become necessary by the advancement of modern science, amplified by the original researches of the author and presented to the reader in a most concise and attractive form. To all English-speaking physicians and especially to those who read only their own language, this excellent translation of a great and practical work opens up a mine of surpassing wealth.

Students will find it invaluable as a book of reference.

A TREATISE ON THE NERVOUS DISEASES OF CHILDREN, for Physicians and Students. By B. Sachs, M.D., Professor of Mental and Nervous Diseases in the New York Polyclinic; Consulting Neurologist to the Mt. Sinai Hospital; Neurologist to the Montefiore Home for Chronic Invalids; Ex-President of the American Neurological Association. One volume, 688 pp., 8vo., illustrated by 169 engravings in black and color, and a colored plate. Muslin, \$5.00. New York: William Wood & Co. Toronto: Carveth & Co. 1895.

The author has chosen a very fertile, and to a great extent virgin, field for his work. To speak candidly we would not, before the appearance of the present volume, have believed it possible to produce such a work on the nervous diseases of children alone. There was room for such a book, as the physician often feels a need of wider information regarding these diseases than is found in text-books on pediatrics.

The work includes all those diseases which either occur frequently in early life, or which, when occurring at the period, have some distinctive features.

The introductory chapter on methods of examination, including examination schemes, cranial measurements, Preyer's observations, visual tests, action of muscles, sensory distribution, gait, reflexes and electrical examination, is one which is worth the price of the whole book to any practitioner — not a specialist, who will take the trouble to assimilate it.

It reduces the examination of a child, often so very unsatisfactory, to as nearly a scientific basis, as can be done with our present knowledge and methods.

While the reader is referred to the larger text-books on nervous diseases for detailed descriptions, yet the author has considered it expedient to give a short, but sufficient, account of the anatomy, physiology, and pathology of the chief divisions of the nervous system, a feature which will be found very useful.

Functional diseases such as convulsions, epilepsy, hysteria, chorea, headaches, disorders of sleep, etc., are first discussed; then the organic diseases of the nervous system are taken in the sequence indicated by their natural relationship.

It is a practical and useful book and should find a place in the library of every physician who has to do with children. The illustrations, for the most part original, are excellent, as is also the letter-press and binding.