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## Original Communications.

### A CLASSIFICATION OF THE COMMONER DISEASES OF THE DIGESTIVE SYSTEM OF INFANTS.

By DR. JOSEPH S. A. GRAHAM.  
Hospital for Sick Children, 1907-08.

Many classifications of the commoner diseases of the digestive system in infants have been made. Some of these classifications may seem complete at first sight, leaving little to be desired, but on reading further the definition and discussion of the different classes, there come to our minds many cases which would puzzle us as to which class they should belong. We have felt the need of a simpler classification at the hospital, and one in which each type was well defined, so that each term might call to our mind a definite disorder.

From the commencement of the last hospital year the cases were classified by me as they were discharged, but by the end of the year my own ideas had so changed, what with the result of post-mortem findings and the great increase in the number of patients admitted, that it was necessary to make a complete tabulation of all cases of digestive disturbance and attempt to re-classify them. This paper may then be taken as an interim report and purely clinical in character.

The cases were divided into four groups: entero-colitis, gastrointestinal indigestion, malnutrition and marasmus. The following were briefly the limitations of each group:

In entero-colitis the onset was always acute, the patient being taken suddenly but a few days before admission to the hospital. As a rule there was marked increase in the temperature, except in those few who had been suffering from chronic digestive dis-

turbance and in whom the vitality was low. Acute diarrhœa was present at the onset, eight or more stools being noted a day, usually containing mucus in abundance, occasionally blood, were very offensive in odor, and vomiting was almost invariably present. Some of these cases had, before the onset of the attack which brought them to the hospital, had attacks of intestinal disturbance, but nothing which resembled the present, which was more acute and associated with marked prostration. The result of treatment in the hospital was unsatisfactory. Colon irrigation and stomach lavage were useful in so far as a reduction in the number of stools a day and cessation of vomiting were concerned, but careful regulation of diet was of little service. The temperature remained elevated in spite of purgation, and diarrhœa and vomiting, or regurgitation of food (as distinguished from vomiting) continued, but in a lessened degree. The length of stay in the hospital for these cases was short. Death claimed the vast majority. Those who recovered did so in from two to three weeks.

*Gastro-intestinal Indigestion.*—The onset was more gradual, the patient being admitted after days or weeks of patient endeavor on the part of the mother. The attack differed in no way from previous attacks some of the patients had had. The temperature in some cases was elevated, but was reduced within one or two days after admission to the wards. Purgation usually accomplished this. Diarrhœa of a chronic character was present, as was regurgitation of food. The stools were offensive, containing mucus and occasionally streaks of blood. Colon or stomach irrigation had little or no effect. Careful attention to diet only produced good results after days of careful feeding and nursing. The results were good in the majority of cases. This group includes those cases of disturbed metabolism who do not respond immediately to dietetic treatment, as do the malnutrition group, and in whom there is probably cellular change, both in the digestive glands and intestinal tract.

Malnutrition, due to improper foods, or to feedings too great or too small in amount, given too frequently. The patients suffered from occasional attacks of diarrhœa and elevation of temperature. After admission to hospital, and being placed on proper foods at proper intervals, they immediately improved and gained weight. This allowed of their discharge after a few days.

*Marasmus, Chronic Wasting from Birth.*—Either in premature children, or in full term children apparently healthy, who rapidly become as little old men and women, doomed to death,

and for whom nothing can be done. Careful feeding, regulation of health, produced no good result.

There are many objections to such a classification, and especially is this the case as regards entero-colitis and gastro-intestinal indigestion. The malnutrition and marasmus groups are fairly well defined. The malnutrition group differ from the gastro-intestinal group only in degree and in ability to respond to treatment. Were we to subdivide entero-colitis into acute and chronic, those cases which recover from the acute attack and become chronic do not differ greatly, if at all, from the gastro-intestinal type. I feel certain that a number of cases, coming to us as intestinal indigestion, were due primarily to an acute entero-colitis, and that as a result of the entero-colitis they were immediately taken from a diet which had been suitable and placed on a variety of foods. The longer the duration of the attack the greater the variety of foods, so that we have the results of an inflammatory reaction to deal with, as well as those of improper feeding.

Again, were we to subdivide gastro-intestinal indigestion into acute and chronic, we should have the acute type closely resembling entero-colitis, and especially would it be difficult to decide whether the patient were suffering from an exacerbation of an illness of the gastro-intestinal type which resulted in death before we had an opportunity of regarding the effect of careful feeding, irrigation, etc.

Enterocolitis implies an inflammatory condition due either to bacterial or chemical toxic agents, or both. That it is always the result of an infection may be doubted, but it is a well-known fact that in the baby wards of hospitals where babies are being treated for chronic digestive disturbance, as well as those suffering from surgical and other medical affections, we may have epidemics of entero-colitis which sweep through the ward, causing illness and death of many, irrespective of the diseases for which they were admitted. Again, the disease during an epidemic differs in no way clinically from the cases I am endeavoring to describe. Epidemics in the Hospital for Sick Children have been unknown for the past four or five years since precautions were taken similar to those in typhoid. On the other hand it will be shown that these cases are not by any means all due to milk infection, that babies on proprietary foods are liable to it as are babies fed entirely on the breast. Avenues of infection are possible from nipples, bottles, etc., which must be taken into account. The sudden onset, with elevation of temperature, indicate a reaction on the part of the organism,

due more likely to toxins of infective origin than to toxins of chemical origin.

Of the type described as enterocolitis there were admitted during the year 41 cases. Of these 32 died, 6 were cured, and 3 were discharged unimproved, the parents wishing to remove them to their homes. These 3 cases seemed hopeless at the time of their leaving the hospital.

*Age.*—8 were under 2 months; 8 between 2 and 4 months; 4 between 4 and 6 months; 8 from 6 to 8 months; 4 between 10 months and 1 year; 6 were over 1 year.

*Breast Feeding.*—No breast, 5; breast fed under 2 weeks, 7; between 2 weeks and 1 month, 7; between 1 and 2 months, 5; between 2 and 3 months, 3; between 3 and 4 months, 1; between 4 and 5 months, 2; over 1 year, 3; altogether, breast fed, 2.

It is noticeable that breast feeding was discontinued early in the majority of cases, and worthy of note that of the 6 who recovered 3 were breast fed over 1 year, and that one was altogether breast fed.

*Type of Feeding.*—13 were fed on milk mixtures (with and without the addition of barley water); 14 on proprietary foods; 3 unknown; and, as before stated, 2 on breast alone. The disease was accounted for by the mother after sudden change from breast to milk in 2 cases; from breast to proprietary food in 1 case; from proprietary food to milk, 2 cases, and from milk to proprietary food, 1 case. Thus there were 6 cases of the 41 in whom sudden change of food seemed to play some part.

*Previous Attacks.*—28 had never had any previous evidence of intestinal indigestion other than occasional disturbance for a day or two; 11 had suffered on and off from attacks of indigestion, but not similar to the present, and 3 had never thrived.

*Onset.*—The onset was invariably sudden. The number of days of illness before entering the hospital was: Under 2 days, 2; under 3 days, 6; under 4 days, 4; under 1 week, 15; under 2 weeks, 4; under 3 weeks, 5; and over 3 weeks, 1. None of these cases showed any improvement from the time of onset to the time of admission to the hospital. Vomiting and diarrhoea were present in 22; vomiting alone in 2; diarrhoea alone in 16; no vomiting or diarrhoea, 1; constipation, 2; not mentioned in history, 4. Of those who had symptoms of diarrhoea, 3 had an average of 5 stools daily; 9 had from 8 to 9; 1 had 10; 1 had 12; not known accurately, 26; 1 suffered from convulsions; in 4 blood was noted in the stools; 1 had evidence of congenital syphilis; 1 suffered from rickets; and in 15 there was a tubercular family history.

*Length of stay in hospital.*—25 remained from 1 or 2 days to 1 week. 9 from 1 to 2 weeks. 4 from 2 to 3 weeks. 3 from 3 to 4 weeks. 1 over 4 weeks.

*Month of admission.*—March 2, April 1, June 1, July 4, August 13, September 12, October 7. It will be seen that the months of selection, if one might so term it, are August, September and October. The October referred to is that of 1907, the October of 1908 being in the next year. The number of cases admitted in October 1908, is greatly in excess of October 1907, or of August or September 1908.

*Irrigation.*—While in the hospitals the stools were reduced to from 2 to 4 a day, excepting those cases which remained in the hospital but a day or two, this by colon and stomach irrigation. In all cases the odor of the movements improved, but there remained the mucus, and blood was noted in 13 cases during their stay. In 10 cases the vomiting continued in spite of the food constituents being greatly reduced, and all resented any attempt at increasing the food by an increase in the number of movements and by regurgitation of food. Good, immediate results of careful feeding were seen in 5 babies.

*Temperature range.*—It is extremely difficult to give any clear conception of the temperature in these cases. All exhibited temperature while in the hospital with the exception of 3. Of the 6 cases which recovered there was a well-marked and sustained temperature for 10 days or more in 4. These cases were kept in the hospital for an average of 3 weeks. The range of temperature was from 102 to 103, falling gradually to 99 or normal. The cases which were discharged unimproved, or which died, showed marked evening or morning remissions, the high temperature being from 101 to 102, receding to 99 or 100. Occasionally the temperature would rise to 104 or 106, but for not longer than from 24 to 36 hours. It would either drop or death would ensue. After the patients had remained for any length of time it was noted that the temperature fell and that the morning remissions were more marked.

*Complications.*—Four developed broncho-pneumonia; 6 acute bronchitis; 1 suffered from convulsions, and there was retraction of the head in 2 cases.

*Loss of weight.*—The weight of the majority of these patients on entering the hospital approached the normal. General nutrition being markedly good in 20, fair in 10, and poor in 11. There was an average loss of 5.5 oz. in the patients remaining in the hospital less than 1 week, of 14.8 oz. of those

remaining in hospital from 1 to 2 weeks, and of 12.8 oz. in those remaining from 2 to 3 weeks. The number of cases remaining longer was so small that the average loss or gain would be of no service.

*Gastro-intestinal indigestion.*—Of this type there were admitted 97 patients; 32 died, 2 unimproved, 5 improved, 56 cured.

*Age.*—Under 2 months, 8; between 2 and 4 months, 21; between 4 and 6 months, 14; between 6 and 8 months, 16; between 8 and 10 months, 11; between 10 months and 1 year, 11; over 1 year, 15.

*Breast Feeding.*—Doubtful, 15; breast, 19; up to 2 weeks, 8; from 2 weeks to 1 month, 12; from 1 to 2 months, 17; from 2 to 3 months, 10; from 3 to 5 months, 10; over 5 months, 10; and altogether breast fed, 5.

*Type of feeding.*—Altogether breast fed, 5; milk dilutions, 18; proprietary foods, 34; proprietary foods and milk, 34; milk with variety of foods, such as potatoes, meat, fruit, etc., 18; doubtful, 6. The commencement dated from a sudden change from proprietary food to milk, 3. Breast to proprietary food, 4. Breast to milk, 1. Milk to proprietary food, 2. 10 cases showed no relation to sudden change of food.

*Previous evidence of intestinal trouble.*—58 had previous evidence of gastro-intestinal disturbance; 29 had not shown any such trouble up to the time of onset mentioned, which was always long; 9 were doubtful.

*Onset.*—The onset was gradual as a rule. The number of days before entering the hospital were: Under 1 week, 18; from 1 to 2 weeks, 14; from 2 weeks to 1 month, 16; from 1 to 2 months, 24; from 2 to 3 months, 14; over 3 months, 6; not known, 9. In most cases the patients did not pursue a steadily downward course but would for a time improve, then have a setback. Diarrhœa and what the mother described as vomiting, 44 cases. Diarrhœa alone, 8 cases. Vomiting alone, 10. Constipation in 8. Constipation and vomiting, 4. Convulsions, 1. Blood in movements of 1. Onset not accurately known, 17.

*Length of stay.*—Under 1 week, 25. From 1 to 2 weeks, 18. From 2 weeks to 1 month, 18. From 1 to 2 months, 20. Over 2 months, 16.

*Month.*—Jan., 2; Feb., 8; March, 6; April, 4; May, 10; June, 6; July, 6; Aug., 25; Sept., 9; Oct., 13; Nov., 6; Dec., 4. Note the increase in August.

*Effect of careful feeding.*—The effect of careful feeding was

such as might be expected from the chronic type of case. After great reduction of proteids and fats the diarrhoea and vomiting ceased in the majority of patients after 4 days. Marked improvement was noted in some, when, for some unknown reason the child suddenly became worse and died. In other fatal cases the diet could not be increased from a starvation one, of which the child could only assimilate a fraction, without symptoms of intestinal irritability. On the whole the effect of careful feeding was good.

*Temperature.*—The rule was for the temperature to vary from 97.5 to 99.5 or 100 with morning remissions (this after the initial temperature on admission had disappeared). At times the temperature would become elevated to 101 or 102, but this was only for one or two days, and free purgation would cause its fall. Before death the temperature was almost invariably elevated for one or two days.

*Weight.*—In the cases which were discharged there was a preliminary loss of weight in a little less than one-half. At the time of discharge there was a loss of weight in one-third. Of those who died there was a preliminary loss of weight in two-thirds. A loss in weight in all but five at the time of death.

Before attempting to tabulate these cases I was under the impression that there would be no difficulty in showing that we had to do with two distinct diseases. I can only offer them as two types of disease, and find it impossible to draw the line sharply between infection from pathogenic bacteria and toxæmia from putrefaction due to non-production on the part of the patients of such substances as HCl or such ferments as lactic acid. No doubt most of the entero-colitis cases are due to infection by pathogenic bacteria. In some it is possibly a septicæmia with local bowel manifestations as in typhoid. Although we thought of making blood cultures the condition of the majority of the patients was not such as would warrant it, and it was not done. Some of the cases of gastro-intestinal indigestion on coming to post-mortem, showed bowel changes similar to the entero-colitis type, infiltration of the wall, swelling of the lymphoid elements and ulceration. It is possible that in these cases there was an infection superadded to which the patient was unable to react. The majority of these cases showed a condition of atrophy of the bowel wall with slight swelling of the lymphoid elements. Were the patient to die early in a gastro-intestinal indigestion, we should probably have such a bowel condition present, due to toxic products.



Enterocolitis is an acute affection occurring usually during the months of August, September and October. The patients are fairly well-nourished, artificially-fed babies in whom, as often as not, there has never been any digestive disturbance. The onset is sudden; prostration great; wasting is not a prominent feature, the majority losing but little weight before death. Gastro-intestinal indigestion is a more chronic affection, gradual in development, nutrition of cases poor, in short, a wasting disease. They were admitted in every month of the year, the greatest number in August. Some of these cases must undoubtedly be due to a superadded pathogenic infection.

There were 11 cases of malnutrition, all of whom recovered, and 13 cases of marasmus, 9 of whom died, and 4 discharged unimproved.

The distinguishing of these types is of more than academic interest. Why should a baby who has thrived fairly well on some artificial food be taken from that food and be made the subject of dietetic experimentation from the time he develops an acute enterocolitis? It is granted that a reduction of any food is necessary, but surely the attention should be devoted to the inflammatory nature of the illness, remembering that the cause of the complaint is not always in the food, even though it may be proprietary. Many of this type come to the hospital after being fed on a different food every day or so from the onset. The mortality is high, but the cases are not selected, or are rather a selection of the worst, many being moribund at the time of admission.

## PRO-PERITONEAL AND OTHER INTERNAL HERNIAE.\*

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It is not my intention in this short paper to go into the whole subject of Internal Hernia in all its forms, but merely to report three cases that have come under my observation presenting symptoms of intestinal obstruction.

The first was that of a male, age 40, who was admitted to the General Hospital on December 2nd, 1905, under the care of the late Dr. George A. Peters, with the following history: In the fall of 1904, at Huntsville, the patient had his first attack. It commenced with pain, chiefly in right iliac region, persisted for three days and was very severe. He would neither eat nor drink, had no bowel movement but no vomiting. Enemata relieved the condition.

The second attack was at Waubaushene in April, 1905, quite similar to the previous attack, lasting three days, with pain, loss of appetite, but no vomiting. Again he was relieved by enemata. The condition was thought possibly to have been appendicitis. In each attack, when relief came, it came suddenly.

The third attack, almost a month before admission, lasted four days, with similar symptoms but with vomiting in addition, although this was not fecal in character. He was treated by Dr. J. A. Harvie, of Coldwater, with enemata, and recovered.

The fourth and present attack occurred while patient was working at railway construction on the C.P.R., and commenced similarly to the others, but was not relieved by similar treatment. It began on November 28th with pain in the abdomen in the right iliac region and constipation. He consulted Dr. J. A. Harvie, who gave him a purge and ordered hot applications to the abdomen. This was not effectual and next day he began to vomit. The vomited material was white and slimy, but pain was not a marked feature. On November 30th the doctor gave him an enema, which was ineffectual, and on December 1st he started to hiccough and this continued until he entered the hospital on December 2nd. The patient

\* Read at Surgical Section of the Academy of Medicine, Toronto.

had vomited every day since November 29th, and upon admission the vomited material was brown, fecal in appearance and odor. Enemas were given which brought away some fecal matter, probably from the lower bowel.

Upon examination the patient was seen to be a rugged, well-nourished laborer. There was some distention of the abdomen and the presence of a marked peristaltic wave. There was some slight rigidity of the lower part of the right rectus. There was a tympanitic note over the entire abdomen, except in the region of the bladder, where there was an alteration in the note. The heart sounds were transmitted over the abdomen but were more marked in the upper half.

The facial appearance indicated some serious intra-abdominal condition, though the pulse was 70 and the temperature normal. Hiccoughing at times was distressing, but the pain was less severe.

On December 3rd the pain returned, became worse; the vomit was very brown in color, and though the temperature remained normal the pulse became accelerated. Immediate operation was decided upon.

The abdomen was opened in the middle line between the umbilicus and the os pubis. The small bowel in its upper two-thirds was distended, while near the ileo-cæcal end it was collapsed. Between these the bowel disappeared into an opening at about the level of the internal ring and between it and the median line. About eighteen inches of ribbon-like anæmic gut were drawn out of an intraperitoneal sac, and at once became better in appearance. That part of the bowel that impinged on the rounded edge of the sac looked damaged in its serous coat, but there was no solution of continuity. Upon dissecting out the sac it was found to consist of peritoneum and was tucked between the parietal peritoneum and the fascia transversalis. The margin of the opening was rounded and thick. When dissected out the sac was about three inches long, and the opening in the parietal peritoneum thus left was closed with cat gut sutures. The entrance into the sac would appear to have been originally a peritoneal pouch internal to the internal abdominal ring, and the hernia, instead of finding its way into the inguinal canal, pushed the peritoneal pouch out between the parietal peritoneum and the transversalis fascia.

After operation the vomiting ceased and the patient had two bowel movements the following morning. He continued to improve for five days, when on the evening of December 8th

he began to complain of pain in the lower abdomen. Upon examination the abdomen was tense, tympanitic, with absence of liver dulness, and increase of pulse rate from 84 up to 120, together with the abdominal facies. Perforation of the damaged gut was diagnosed and I opened the abdomen through the former incision, wiped out a quantity of fæcal matter, and discovered a perforation the size of a split marrowfat pea in the small bowel where it had been damaged by pressure on the margin of the hernial opening. The opening was closed with two layers of continuous catgut sutures. The fæcal matter was washed out with some saline solution and four drainage tubes were inserted in different directions and the wound partly closed.

He was returned to bed in a greatly shocked condition and normal saline per rectum ordered. The pulse continued to fail and at midnight an interstitial saline was administered and these were continued every eight hours for the next thirty-two hours. On the 12th he was somewhat better and was put up in what is now called the Fowler position for better drainage. Bronchitis developed, and for the next few days he coughed up great quantities of muco-pus. On the 15th the large drainage tubes were removed and smaller ones inserted. It is unnecessary to relate the further progress of the case more than to mention that he was discharged from the hospital on February 23rd, and started for his home in Quebec.

The drawing made for me by Dr. W. E. Gallie represents the appearance of the sac looking at it from behind.

The second case was that of a boy aged 7, who, upon returning home from a party on the evening of January 4th, 1906, complained of abdominal pain, which was relieved by hot applications. The next evening he was seen by Dr. Harvie of Orillia, and though there was some indefinite abdominal pain there was no muscle rigidity, no increase in pulse or temperature and the bowels moved with an enema. The day following there was no increase of pain—more an uncomfortable sensation—but in the evening there was a sudden acceleration of pulse, from 88 to 140 in a few hours. The face took on the appearance so common in peritonitis and the abdomen became distended. When the patient was under the anæsthetic—after midnight of that day, really the early morning of January 7th—I was able to make out a large, sausage-shaped mass extending upward from the right iliac region toward the middle line, and I am free to confess that I thought we had a case of intussusception to deal with. Upon opening

the abdomen a large coil of distended, gangrenous, foul-smelling gut appeared in the wound. This had passed through a loop formed by an attachment from the summit of a Meckels' diverticulum to the margin of the mesentery. About fourteen inches of bowel had passed through and then had drawn the diverticulum with it, producing strangulation of the circulation where the diverticulum and bowel was twisted upon itself. The loop was drawn out of the abdomen until the two healthy ends appeared. These were quickly sutured together and then to the abdominal parieties; the bowel opened and irrigated, and the rest of the opening closed. The child survived only for about twelve hours.

The third case was in a girl of six years whom I saw with Dr. W. L. T. Addison on March 29th of this year. The history was, that on the evening of March 28th the child complained of not feeling well and the mother gave it a dose of castor oil. Soon after there was vomiting. Towards morning there was a slimy evacuation from the bowels and in it a large round worm. On Saturday the girl was better but towards evening began to be uncomfortable and to complain of pain. A laxative was given without result, and early in the morning of the 28th vomiting commenced. In the afternoon when the doctor saw the case there was severe vomiting, normal temperature, a pulse-rate of about 80, but there was pain and no rigidity. Stomach sedatives were administered and calomel, but when I saw the case on the following afternoon there had been no bowel movement, though mucus had passed fairly often, and the vomiting continued.

Upon examination there was no rigidity, very little tenderness in the abdomen, but a peristaltic wave could be made out. To the right of the middle line and about the level of the umbilicus there was a soft mass with an indefinite outline. It did not feel like bowel within bowel—as in an intussusception—but, as I remarked at the time, it felt like a localized bunch of gut filled with gas. The patient was in a state of marked shock with the eyes sunken and dark circles around them, the pulse rate was 156, and there was only a slight elevation of temperature. Examination per rectum revealed nothing.

Two hours later I opened the abdomen through the right rectus; some distended bowel presented at the opening, and, while it was darker in color than the other portions, there was no evidence of strangulation. Upon delivering this handful of bowel I found it had herniated through a loop on the lower margin of the omentum, and consisted of about two feet of

small bowel and a few inches of the cæcum and ascending colon. The loop was disposed of, the abdomen closed quickly and the patient returned to bed. Stimulants were administered, artificial heat applied, and the child made an uninterrupted recovery.

This case will come under the head of incarcerated hernia without strangulation. The first one related showed incarceration with beginning strangulation, while the second one was a complete strangulation.

The confusing feature in the diagnosis of these cases seems to be the gradual onset of symptoms, and yet the secret of success in their treatment is an early diagnosis and early operation.

112 College Street.

## GANGRENE OF ARM, DUE TO THROMBOSIS GUMMA OF TESTICLE.

BY CHAS. B. SHUTTLEWORTH, M.D.C.M., F.R.C.S., ENG.  
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Mary R., aged 38; English; strong and robust; admitted December 13th, 1908.

*Complaint.*—Great pain in left arm, with discoloration, coldness and numbness of hand.

*Family History.*—Unimportant, except that the mother died of diabetes.

*Personal History.*—Good habits; no history of venereal disease; has always worked hard; has had three children, one living, aged 20; two miscarriages at seven months, first three years ago and another one year ago.

*Present Illness.*—Four days ago she did her own washing, and her hands seemed perfectly well except for some rheumatic pains, which she says she has suffered from for last eighteen or twenty years. That evening she noticed the tips of her fingers of the left hand were whitish and just above the white area a bluish line. She felt a tingling sensation in the fingers. Towards morning the little finger was white up to the knuckle. Towards evening the whole hand became affected, and she suffered the most intense pain. Morphine was given, but did not control the pain. She then came into the hospital.

*Physical Examination.*—The left hand is powerless. The slightest touch on the arm causes great pain. The back of the hand is mottled and purplish in color. This extends down the fingers and for one-half inch above the wrist. The arm is somewhat swollen as far up as the elbow. The parts are cold to the touch. There is complete loss of sensation below the wrist, but above this the sensation is very acute. The pulse below the elbow cannot be felt. A dark line is seen just above the wrist, and there is a swollen, hard band present half-way up the forearm. Circulatory, respiratory, alimentary, genito-urinary and nervous system normal.

Four days after admission line of demarcation well formed above the wrist. Hand is very dark. Some odor noticeable. Pain very severe. Is restless and excited. Temp. 101 2-5. Operation arranged for next day, when amputation was per-

formed. Antero-posterior flaps were made. Very little bleeding took place. All veins and arteries filled with soft clotted blood. Wound healed by first intention.

All cases of gangrene may be classed as traumatic, infective or spontaneous. The case cited does not evidently belong to either the variety caused by injury nor to infective agents, so must come under the head of spontaneous gangrene. This is recognized by (1) well marked prodromata; (2) slow progress; (3) the imperfect vitality of the neighboring parts. Injury may play some part in its production, but is generally too trivial to cause the death of the tissues directly, and there is an absence of the grave signs of infection.

Several varieties of spontaneous gangrene are recognized:

(a) Gangrene from arterial thrombosis or embolism, met with in the convalescence of acute illnesses, especially typhoid and in the subjects of heart disease. The cause, symptoms and course exactly resemble gangrene following the ligation or rupture of a main artery. The patient suddenly experiences a severe pain, more often in the leg than in the arm. The part is found cold, anesthetic, slightly livid, loss of pulsation in the arteries, and the case goes on to dry or the mixed variety of gangrene.

(b) Senile gangrene. Generally in old subjects with weak hearts, rigid tortuous arteries and a feeble circulation.

(c) Diabetic gangrene. In those suffering from glycosuria.

(d) Obliterative or proliferative arteritis leading to gangrene. This occurs oftener in men than in women; more common in the lower than the upper limbs and in those of middle life. The limb affected has for some time been the seat of a very painful ischemia, made worse by cold and relieved by warmth. The part is cold, blue mottled and a little edematous, heavy and benumbed, and the main artery for some distance above the gangrenous area is found hard and pulseless.

(e) Raynaud's, or symmetrical gangrene.

(f) Trophic gangrene, due to paraplegia, hemiplegia, locomotor ataxia, spina bifida, syringomyelia, or diabetes leading to peripheral neuritis.

The symptoms presented in the case under consideration point to arterial thrombosis or embolus as the cause of the trouble. The general good health of the patient and the absence of heart disease would lead one to suspect some local change in the arterial wall with secondary thrombosis.



Simple chronic endarteritis resulting in atheroma, found mostly in elderly people, especially in alcoholics and those suffering from chronic Bright's disease, gout or syphilis, may here be excluded, for the other arteries of the body were normal.

Chronic syphilitic endarteritis, found in the tertiary stage and affecting the tunica intima, particularly of the smaller arteries, may lead in the end to occlusion of the vessel.

Lastly, we have the obscure lesion of the vessels, known as endarteritis obliterans or proliferans, occurring independently of gout, rheumatism, tubercle, syphilis or other constitutional disease, and independently also of embolism or injury. Under this head one would put the case presented.

It is not known whether this disease is truly syphilitic or not. In some cases an undoubted negative history is obtained. The only suspicious circumstance in this case is that the patient gave birth to two premature infants.

The disease is characterized by a patchy thickening of the tunica intima of a main vessel, which narrows and finally occludes the lumen. This new tissue becomes vascularized and organized into fibrous tissue. This disease stands in need of a distinctive name, for other forms of arteritis are equally "obliterating," "proliferating," and "hyperplastic." For this we must wait until its cause has been ascertained.

John T., aged 49; occupation, farmer; married; six children, alive and well; father died of cancer; has two brothers and two sisters, all healthy; admitted December 7th, 1908.

*Personal History.*—Has always worked hard. Uses spirits and tobacco in moderation. Denies all venereal disease.

*Present Illness.*—Eight months ago attempted to lift a cow out of the snow. Three days afterward he felt pain in the testicle of the left side, but not very severe. The scrotum became much distended, but not as hard as now. This swelling was poulticed for a couple of weeks, without producing any change. It has become much harder lately.

The tumor is due to a vaginal hydrocele and an enlarged testicle. Operation was performed and a radical operation was done for the hydrocele. The testicle was represented by a flattened mass, 4 in. long and 2½ in. wide. A portion of this was removed for examination, as the consent of the patient could not then be obtained for castration. Prof. McKenzie reported that the specimen showed caseation, but no positive evidence of tubercle; most likely tuberculous. After this the

man consented to have the testicle removed, which was done two days later. The specimen is here presented.

Tertiary syphilitic orchitis pathologically resembles the majority of tertiary manifestations in consisting of diffuse infiltration accompanied by overgrowth of connective tissue. If the whole organ is uniformly affected, the ordinary syphilitic sarcocele or sclerosis of the testis results. If more localized the gummatous variety is present, which is not so common as the diffuse form.

The specimen shown belongs to the gummatous type. On section the masses appear yellowish white, fairly well defined, undergoing the usual degenerative changes in the centre, due to lack of blood supply. The remains of the testicle may be seen to form a flattened-out spurious capsule around the gummatous growths.

## TWO CASES OF STEEL IN THE INTERIOR OF THE EYE, AND THEIR SUCCESSFUL TREATMENT.

BY G. HERBERT BURNHAM, M.D. TOR., F.R.C.S. EDIN.

Many, perhaps all of us, can recollect how hopeless we used to be in the presence of a piece of steel in the interior of the eye. Such an accident was generally looked upon as synonymous with the enucleation of the eye, or, if not, a long season of suspense and the constant fear of sympathetic ophthalmia. However, I can say regarding this latter disease, sympathetic inflammation, that of this justly dreaded affection I have not the same fear as oculists in general seem to have: for I have succeeded in saving eyes which have suffered from the milder, and also from the worst, forms of sympathetic disease.

Judging from the literature of this affection I am alone, apparently, in expressing such full confidence in an ability successfully to treat sympathetic inflammation.

Regarding, however, the subject of this paper, I can safely say that this feeling of inability to do anything regarding eyes injured by pieces of steel is now done away with, owing to the X-rays and Haab's magnet; for through them we can be sure of their presence and locality and of the means of their removal. My remarks will be founded upon two of my cases.

In one, which occurred several years ago, most opportunely the Haab's magnet had just been received. The late Dr. McMaster and myself tested it a few days after its arrival. The next day, almost, a man with a piece of steel in the interior of his eye presented himself.

Dr. McMaster, by the X-rays, accurately located it in the vitreous. It had in its passage wounded the inner third of the cornea, iris and lens. The magnet, mounted on a movable stand, was applied to the cornea a little to the inner side of the centre. It acted, and the piece of steel presented itself through the outer iris. There it lodged, and the magnet, though placed between the lips of the wound in the cornea, could not budge it. I now elongated the wound to the opposite corneal margin, just in front of the piece of steel. Now the magnet quickly removed it. This last elongation of the corneal wound allowed me to draw upon it in a straight line and thus successfully to take it out, whereas before doing so I failed on account of pulling at an angle.

This exemplifies the necessity of being patient and trying different lines of traction. Like a flash does the steel, when it comes out, appear on the tip of the magnet. In this case there was necessarily much disturbance of the various structures, and though granting an aseptic foreign body, still there was a natural fear of losing the eye. Owing to an unavoidable delay, several days elapsed before the magnet was used. It is sometimes advocated to make, in this form of case, an incision in the sclerotic back of the ciliary processes and through this opening to remove the piece of steel by the magnet.

I did have difficulty in saving the eye, but finally, after two months, it recovered, being perfectly quiet. There was bright perception of light with a good field. I gave iodide of potassium and mercury, internally, and kept upon the eye without cessation a large piece of ice. This was always put in a sling of cheesecloth and laid upon the closed eyelids with a thin pad intervening.

The use of ice in a rubber bag is a much inferior method. The cheesecloth enables the eye always to have the effect of the full chill of the ice, whereas using the bag, the latter is often only filled with cold water, the ice having melted. The water, as the ice in the cheesecloth melts, runs away, and hence the ice is always in contact with the eye; and also it can be noticed when the bulk of ice is much lessened, and thus put on a fresh piece without any delay. In this way the eye was kept thoroughly chilled for at least six weeks. This condition was a great check to the subsequent inflammatory changes, and so limited them as to enable the eye to recover therefrom. My last information was that the eye was quite quiet and the vision impaired by the corneal scar and opaque capsule.

The second case was about one year ago and was that of a man whose eye was wounded by a piece of steel, which penetrated the outer cornea and iris, and lodged midway between the lens and ciliary body without apparently affecting either of them. A delay in getting the magnet caused an exudate to surround the steel and pain began. However, warned by previous experience, I made an opening in the cornea opposite to it and finally landed the piece of steel. In this case, though I knew its position and the condition of the surrounding tissues, still one hour and a quarter elapsed before the steel sprang out and attached itself to the tip of the magnet. My first case took in all two hours. The magnet was fully acting upon the steel as evidenced by the jolting movements of the eyeball and head. Hence the necessity of perseverance if you wish to

succeed. This case when last heard from had good vision with the eye quite quiet. I am informed that I was the first in the city to use Haab's magnet. As I used it such a short time after its arrival, it seems to be a correctly made statement. The shorter the time after the lodgment of a piece of steel in the interior of the eye the magnet is used, the better the hope of recovery is allowed by all of us.

Alloys of iron may be wholly or nearly non-magnetic. The alloy of iron with manganese and the effect it produces in the destruction and alteration of its susceptibility to magnetism is interesting and surprising. Without going any further into the magnetism of alloys of iron, it is stated as a fact that special steels differ widely in their behavior when placed in the magnetic field. This ought to be borne in mind, although it is again stated, that all of them affect only slightly the question of removal from the eye.

## OCULAR CONDITIONS IN A CASE OF JUVENILE TABES, WITH PRESENTATION OF THE PATIENT.

BY J. T. DUNCAN, M.D.

The patient I present to the Section was referred to me by Dr. Stewart for examination. Her mother gave the following history. Seven years ago the girl was attending school in Owen Sound, apparently perfectly well. Her age was then thirteen. The first symptom which attracted attention was a swelling of the right side of the neck, but this disappeared in about a month. She then went to school again but had several attacks of vomiting. No cause was ascertained at the time for the vomiting. There were no gastric pains. She attended school for about a month, but began to suffer occasionally from severe pains in the head. These became so violent at times as almost to drive her crazy. She would scream with the pain, get out of bed, throw herself on the floor, go off in a swoon or trance and wake up screaming again. She often vomited during these violent paroxysms.

As there was no improvement and she was getting steadily worse, her medical advisers had her placed in the hospital.

At this time she was able to walk and could see perfectly, so far as her mother observed. She was in the hospital three months, but got gradually worse. At this time the symptoms were of cranial tumor, and a request was made to the mother for permission to operate. Little hope of recovery being held out, the mother would not consent to an operation. She took her daughter home, not expecting her to live. When the girl was taken from the hospital she was quite blind and unable to walk. The pains and vomiting continued for about a month after leaving the hospital. Then they suddenly ceased. This cessation was ascribed by the mother to a certain medicine.

She gradually gained strength, and in two years was able to stand, and gradually became strong enough to walk. When fully recovered she was sent to the Brantford School for the Blind, where she remained three years.

Two years ago she had diphtheria.

*Present Condition.*—She is a healthy looking, well nourished girl of twenty. There is no pain or headache. The functions of the body are carried on normally. No history of specific disease can be obtained.

*Eyes.*—The lids are normal, and descend normally. There is no history of diplopia, but the right superior rectus muscle shows paresis, as the eye cannot be carried upward fully. The other muscles act normally.

*Pupils.*—The pupils are large, and unequal, the left being the larger. The pupillary edges are not jagged or angular. The right pupil reacts slightly to light, the left is fixed, but they act in convergence. They are in fact typical Argyll Robertson pupils.

*Ophthalmoscopic Examination.*—The media are clear. The fundi easily seen. No abnormalities are present excepting that the discs show grey atrophy.

The vessels are normal, as Mott describes.

*Sensory and Motor Systems.*—There is no anesthesia and no loss of motor power.

*Knee Jerks.*—These are present, the right more pronounced than the left.

Co-ordination is perfect in legs and arms.

*Family History.*—The patient is the seventh child in a family of eight, five of whom are living. Besides the eight children there have been two miscarriages. Taken in order the first miscarriage took place a few months after marriage, the second took place between the births of the present patient and the last child in the family.

1. The first living child was a girl, apparently healthy in every way, and who attended school till the age of thirteen. She then was taken ill—vomiting being the earliest symptom. In a day or two acute pains in the head began, the pains were terrible, but not constant. The vomiting and pains continued for a week, and then ceased. Troublesome diplopia was complained of. During the following week paralysis of the right side supervened. She died at the end of the second week. She is said to have been studying very hard.

2. The next was a son, who is living and healthy, aged thirty.

3. The third is a daughter, who married and has two healthy children. She is now aged twenty-seven.

4. The fourth was a son, who left home years ago. He is supposed to be living.

5. The fifth was a daughter, who died at fifteen years of age, supposedly from cold contracted after a heavy washing.

6. The sixth was a daughter, who died last winter, supposedly from catarrh of the stomach.

7. The seventh is the present patient.

A miscarriage took place before the next child was born.

8. The eighth is a boy now aged sixteen, who is healthy and vigorous.

The father died of cancer, with no obtainable history of specific trouble. His chief complaint before his fatal illness occurred was neuralgia of the head.

The mother is living and gives a history of general good health.

*Morbid Anatomy.*—Here I shall only speak of the changes in connection with the ocular symptoms or conditions.

Taking them in their order we may first speak of the external muscles, second of the pupils, third of the optic atrophy.

First, then, the eye muscles. In many cases of tabes there is strabismus caused by the paralysis or paresis of one or other of the recti muscles, producing diplopia. These paralysees are due to degeneration of one or other of the nuclei of the nerves presiding over the motions of the eye, *i.e.*, the 3rd, 4th and 6th. The position of these nuclei may be seen by this diagram.

*Pupils.*—What is the morbid anatomy of the tabetic pupil? It is degeneration of the ciliary ganglion, and not, as formerly thought to be, disease of the cilio-spinal centres in the cervical region. This disease of the ciliary ganglion has been discovered by the careful investigations of Marina. This discovery clears up many difficulties. In this very case it enables us to understand the presence of the tabetic pupil when there is no sclerosis of the posterior columns. This case, then, goes to prove that Marina's conclusions are correct.

*Optic Nerve.*—The blindness of tabetic patients is due to degeneration of the nerve. The appearance has been well described by Mott as being grey, like a sheet of white paper lightly pencilled over. This degeneration or wasting begins usually in the ganglion cells of the retina, and the atrophy spreads centripetally, toward the primary optic centres.

Why should the optic nerve be so often attacked by the poison of tabes? The answer is that this poison attacks the centripetal nerve fibres in whatever region it is found. Take for instance, the posterior columns of the cord—these are formed by a number of neurons. Each neuron consists of a cell body, a peripheral process, and an axone. The peripheral processes are found distal to the ganglia, the cell bodies form the ganglia found on the dorsal roots, the axones form the posterior columns of the cord. The different portions of these neurons are attacked by the tabetic poison, and sclerosis results.

The retina and optic nerve are formed similarly. The separate neurons possess a cell body, a peripheral process and an



axone. The ganglionic cells of the retina answer to the cells of the spinal ganglion.

The axone of each cell passes to the optic nerve and these form the bulk of that structure. When the tabetic poison attacks the brain or organ of vision it destroys the neurons spoken of and we have optic atrophy (sclerosis). The poison, wherever it is, attacks the centripetal nerve fibres, hence we find the optic nerve so vulnerable.

Now as Mott remarks, we have various manifestations of tabes; it may begin in the brain, in parts connected with vision, in the spinal cord, or in nervous structures connected with the viscera, etc. But all of these are *one* tabes, and these may all be spoken of as para-syphilitic affections.

Are there any other cranial nerves with ganglia resembling the spinal? Yes, the auditory nerve, and the 5th in its Gasserian ganglion, in both is a similar arrangement, and both are more or less attacked and degenerated by the tabetic poison.

*Juvenile Tabes.*—One question remains for discussion. Do children suffer from tabes? Osler says they do not, but that the tabes of children is essentially different from that of adults.

But Cantonnet says we have a juvenile tabes exactly like that of the adult form.

The difference is more apparent than real. Osler is speaking of Freiderichs' ataxia (often called hereditary ataxia). This is seen in very young children, as young as two years of age, although it may also be seen as late as twenty to twenty-five. Friederichs' ataxia is characterized by much inco-ordination, nystagmus, but not usually by optic atrophy, and not by the Argyll Robertson pupil.

We have, however, juvenile tabes, of which this patient is an example, but it is very rare. Cantonnet had one case and has analyzed eighty-eight cases from the literature. He positively states that it is the same disease as is seen in adults.

The mean age of the beginning of juvenile tabes is fifteen years. (In this patient it began at thirteen years). Specific disease is as important a cause as in the adult form. Optic atrophy is common, but ataxia comparatively rare. Out of his cases seventy-six per cent. had no ataxia. Out of the eighty-nine, sixty-two per cent. were girls, while in adults by far the greater number are men, namely, 350 men to 19 women. Cantonnet finds that in juvenile tabes the cases of optic atrophy seldom develop ataxia, for a number of the cases (twelve out of eighty-nine) were followed from ten to twenty years and none of them died.

## THE PLASMA SOLUTION IN AFFECTIONS OF THE EYE, NOSE AND THROAT.

BY MURRAY McFARLANE, M.D.

In addition to the many surgical and medical measures directed to the treatment of diseases of the eye, nose, and throat, we are frequently confronted by the necessity of cleansing or irrigating these organs, and the question arising is "How may this be accomplished with the minimum amount of irritation to the diseased structures?"

Fifteen years since, becoming dissatisfied with the existing formulæ commonly employed as sprays or douches in nose and throat work, I considered what would best meet the indications which were for a non-irritating solution, which must be of an alkaline reaction and which could be used for an indefinite period, if necessary, as a means of removing crusts or secretion from these organs and their accessory cavities.

The mucous membrane, of the nose particularly, is very intolerant of even the slightest irritant, and I found the combination of crude alkalis and antiseptics in common use very unsatisfactory and meeting no scientific indication, being in fact, a survival of the days when so-called "Catarrh" was treated by germicides of various natures. The solutions were not of sufficient strength to destroy the micro-organisms in any case, but were quite able to cause irritation and engorgement of the tissues if used for any length of time. Then we are also aware that when once a disease due to these organisms, attacks a mucous membrane and becomes manifest by increased secretion and swelling of the parts, as seen in acute rhinitis and influenzal attacks, they have penetrated to the basement membrane and live out their life history undisturbed by surface applications which cannot penetrate and destroy them, without injury to the tissues. I am here speaking of solutions containing antiseptics, used in the form and quantity of sprays and douches, not of local treatment of ulcers, etc., where drugs of sufficient strength can be employed without danger and under control of the surgeon. In ordinary chronic simple rhinitis very few organisms are to be found in the nasal cavities; the researches of St. Clare Thomson and others clearly establishing this fact so well recognized at the present time. In acute conditions of a catarrhal nature sprays are in the

majority of cases contraindicated owing to the possible danger of causing extension of the disease to the Eustachian tube and thence to the middle ear and mastoid.

After many trials of different salts, the alkalinity of the blood plasma was considered to promise the best results, the blood being of such an alkalinity as kept the balance between exosmosis and endosmosis, and certainly was a typically non-irritating medium, and incapable in a normal state of inducing any pathological cellular change.

“Castaigne and Rothery (1)” have demonstrated that a saline solution must be of a certain cryoscopic index, about 0.78C. If higher or lower it brings about histological changes in the tissues, and they believe that under normal physiological conditions, the osmotic tension is maintained by the sodium chloride, and other salts, being in proper proportion in the blood plasma.

“Achard and Paiseau (2)” by intravenous injections of hypotonic and hypertonic saline injections, .20 to 1.50C were able to set up Epithelial changes in the kidney. Experiments by “Roth-Schulz, and deKarosy (3),” are of interest as regards endosmosis and exosmosis. With blood upon one side of an animal membrane, diffusion is much slower than when water is used, owing to the different diffusibility of some of the blood salts, the chlorides passing more readily than the others contained in the plasma.

All this shows us that any solution of the same cryoscopic index, the same osmotic index, having the same salines, and the same specific gravity as the blood plasma, must of a necessity, be the most scientifically adapted to the purpose of a cleansing spray; or where it is desirable to use a non-irritating injection into the tissues of the body.

Any solution stronger or weaker is capable of bringing about cellular change, and upsetting the normal osmotic balance so necessary to a healthy condition of the parts. In consideration of these facts, I had a tablet made by Parke, Davis & Co. containing the osmotically active salts of the blood, which added to 1000 drops of water made a solution of the same alkalinity, specific gravity, and cryoscopic index, as the defibrinated plasma. For two years it was made up for my own use. Then after sending samples to Europe, and America, the firm got such encouraging reports that my permission was asked to place the tablets upon their public list. This was given and the Plasma Nasal Tablet (Dr. Murray McFarlane) for use in the nose and throat may now be obtained from the above, and several other firms of manufacturing chemists.

They are year by year increasingly used in different parts of the world; and the writer has received many very gratifying reports, from some of the most eminent men in the medical profession, telling of the satisfaction they had derived, from their use in affections of the nose and throat especially; they finding it as I have done, to furnish, where sprays are indicated, a cleansing medium which can be used for an indefinite period without the slightest irritation or engorgement of the tissues. The addition of 1-16 of a grain of menthol to each tablet renders it very pleasant and aromatic, disguising the taste of the sodium chloride.

In diseases of the eye characterised by an increased secretion, the plasma solution has been found very suitable as a means of cleansing the cul de sac. It may be used instead of distilled water in collyria containing remedies not incompatible with the sodium and potassium salts. It has also been used with good results, either alone, or containing cyanide of mercury, dionin, and other drugs in subconjunctival injections.

Prof. Darier, of Paris, in his "Ocular Therapeutics (4)," says: "Many liquids have recently been proposed for subconjunctival injection, a new physiological salt representing exactly the osmotically active salts contained in blood has been used by Poehl apparently with excellent results." (It is described in Merck's Annual, March, 1900). The same salts were introduced to the American profession in 1895 by the writer five years prior to Poehl's investigations.

The solution can be used for irrigation purposes in any part of the body, and without the menthol has been of service instead of the normal saline, after general operations with shock, and per rectum, to relieve thirst, where fluid cannot be taken into the stomach.

In conclusion the writer would say that one tablet is to be added to four tablespoonsful of luke warm sterile water, or in proper proportion if a less or greater quantity is desired, and used as a spray or irrigation whenever in the opinion of the surgeon such is desirable; for hypodermic or subconjunctival injection it is used without the menthol.

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- <sup>3</sup>Arch. Int. de Physiol, Vol. 1, 1904.
- <sup>4</sup>Ocular Therapeutics, 1903, page 30.

**PREGNANCY COMPLICATED BY PRESACRAL OR  
POSTRECTAL MYOMA, CESAREAN SECTION,  
SAVING BOTH MOTHER AND CHILD.\***

AND

**DIVERTICULITIS COMPLICATING PREGNANCY, OP-  
ERATION, RESECTION OF SIGMOID, RECOVERY.\***

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BY DR. J. F. W. ROSS,

Professor of Gynecology, University of Toronto.

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Mrs. O., age thirty. I was asked by Dr. McCormack to see a patient with him. She was taken to St. Michael's Hospital and carried directly into the anæsthesia room. The doctor had endeavored to deliver her with forceps but found this to be impossible as she had a tumor growing in the pelvis—a presacral, postrectal fibro-myoma. On examination I found the cervix well dilated and decided that as an attempt had already been made under an anæsthetic to deliver her with forceps, a cæsarean section should be performed without delay in order to save the life of the child. Foetal heart sounds were becoming feeble. As rapidly as possible the patient was prepared, and assisted by Dr. McCormack I opened the abdomen in the median line. The uterus was drawn out, the upper portion of the wound closed with temporary sutures, after placing two sterilized towels over the intestines. The uterus was now incised and the placenta was at once encountered, and when its edge was disturbed, sharp hemorrhage occurred, but the hand was passed on in and the child was rapidly delivered by the feet. The navel was then cut between two pair of forceps and the child handed to an attendant for resuscitation. The placenta was now swept off with the hand, the uterine arteries being held meanwhile by two assistants, one on either side. As this compression was not altogether satisfactory I applied a clamp on either side; this soon controlled the hemorrhage. The wound into the uterus was now carefully closed by using catgut sutures to the muscle, turning in the mucous membrane towards the uterine cavity. Fine silk was used to the peritoneum and an external layer of silk was applied by "mattress" suture to prevent any leakage into the abdominal cavity.

The operation consumed only a short period of time. The wound was closed with catgut to the peritoneum and silk worm

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\* Read before the Academy of Medicine, Toronto, February 16th, 1909.

gut to skin and fascia. The pulse was about seventy-six when all was over; the child was almost gone but was resuscitated. It was a female.

I have not examined the tumor since the operation on the second of January.

The mother and child were presented, both in excellent health.

Mrs. F., age thirty-five, married, admitted under my care in the Toronto General Hospital. A month before her admission, on October the 14th, she had been delivered of a child, and went out in ten days, contrary to orders. November the 9th, getting about actively though not feeling first rate. November 12th pain came on in the abdomen confining her to bed. She then saw Dr. Hendry, one of my junior assistants, as an out-patient and he advised her to come into the hospital. Symptoms of sepsis set in with pain. On examination a mass was to be felt at the left side of the uterus; the nature of the mass could not be definitely ascertained, but the temperature appeared to indicate the presence of pus. It was thought that perhaps the case was one of streptococcic infection of the left ovary with abscess formation. Owing to the continuation of the septic temperature it was considered advisable to operate. On the 21st of November, 1908, assisted by my senior and junior assistants, Drs. Marlow and Lynd, I opened the abdomen in the median line, then placed the patient in Trendelenburg posture and carefully packed back all intestines. A mass was found adherent to the rectum high up at the sigmoid flexure, this was gradually peeled off and the parts were isolated, and it was found that the ovaries and tubes were healthy on both sides. The case then became obscure, until at last it was seen that the chief portion of the swelling was extraperitoneal, and that as the rectum was peeled from it there was evidently a direct communication between the mass and the interior of the rectum; this portion of the sigmoid that was perforated was also thickened and felt as if it contained a new growth. It was now quite evident that it would be impossible to close the perforation of the intestine as it would not hold stitches, and it was found necessary to perform resection of the gut. Clamps were placed above and below, fecal matter stripped back, and after ligating the mesenteric vessels, about ten inches of the bowel were removed. End to end closure being completed by direct suture, the mucous membrane being first approximated, then the muscular coat and then two layers of overlapping mattress sutures were placed in

order that everything might be made water tight. As the rest of the infection was extraperitoneal nothing could be done with it, and iodoform gauze packing was placed down over the mass in the neighborhood of the round ligament. During the anæsthesia the breathing became shallow and once stopped, the pulse became uncountable, but an interstitial saline, sixteen ounces, brought the pulse down to 130. The patient was very low at the end of the operation. The abdomen was closed with through and through silk worm gut sutures. The first movement of the bowels occurred twelve days after operation. They were kept quiet with opiates up to that time. After the third and fourth days small enemata were administered but without satisfactory result.

The patient had a sharp attack of bronchitis, due to the irritation of the anæsthetic. She made an uninterrupted recovery, and was discharged from the hospital on the 26th of December.

An examination of the specimen removed showed the case to be one of diverticulitis. Perforation of the mucous membrane of the intestine had evidently taken place through the formation of an ulcer, and infection had spread up and down between the intestinal coats, and at last the peritoneal coats had been perforated and the infection was thereby further distributed out along the round ligament.

A case such as this should be kept in mind in these modern days when there is such a tendency to lay the blame for all puerperal infection on the obstetrician. The patient is now in perfect health.

## Selected Articles.

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### INDUCTION OF LABOR AT TERM AS A MATTER OF ROUTINE.\*

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By ADAM H. WRIGHT, B.A., M.D., M.R.C.S. (ENG.),  
Professor of Obstetrics, University of Toronto, Toronto, Canada.

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For the purposes of this paper it will be considered that the duration of an ordinary pregnancy is about 270 days, or nine calendar months, at the end of which time the patient has reached full term. It will also be supposed that pregnancy may be, and is frequently, prolonged three, four or five weeks after term.

The following is a brief report of a case not unusual in obstetrical practice. Mrs. A., aged thirty-five, IV-para, suffered considerably from vomiting early in pregnancy, and other effects of toxemia at a later stage. She expected labor January 1, and made arrangements accordingly. At the end of four weeks thereafter there were no signs of labor. Patient became very weary, sleepless, and depressed. Her husband became cross and angry, as he wanted to go to British Columbia, but was afraid to leave his wife before confinement on account of her serious condition. Apart from this disappointment he was not pleased about paying \$18.00 a week to the waiting nurse who was engaged for January 1. The accoucheur started for Europe January 28, leaving in his place, however, a competent man. The newcomer had rather a sorry time for five days, but was much pleased when labor commenced, February 2. The labor was prolonged and very difficult, forceps being used finally. The child, well-formed, healthy-looking, and weighing 12 1-2 pounds, died in half an hour. The mother was seriously ill for many weeks, confined to her bed for four months, and now, four years after, has not fully recovered strength.

This case illustrates very well the fact that unduly prolonged pregnancy involves serious danger to mother, and child, and great inconvenience and worry to friends, nurse, and physician.

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\* Read before the Toronto Academy of Medicine, February 18, 1909



These evils are generally recognized, and many obstetricians say we should induce labor before grave dangers arise, but the recommendations made are not sufficiently definite to be of much use, especially to general practitioners. The majority of obstetricians consider that the induction of labor is a serious interference with Nature's work, involving some danger. If, however, we can perform the operation in such a way that it causes no danger, or at least very much less danger than the prolongation of the pregnancy, to the patient, we might justly conclude that early interference after term is not only justifiable but advisable. Those who have given up the barbarous methods adopted in so-called *accouchement forcé* are now inducing premature labor by simpler means and with much less danger to patients as compared with the results of a few years ago.

During the last three years I have followed a rule which I have been reluctant to describe until I had sufficient experience to enable me to recommend it with confidence to others. Thus far I am well pleased with the results. My rule is to *commence to induce labor within three days after the patient has reached term as a matter of routine in all cases.*

The following reports will illustrate to some extent the methods employed and the results obtained.

Mrs. B., aged thirty. Second pregnancy. Expected confinement June 10. On the evening of June 10 the nurse was summoned, and on her arrival prepared the patient for labor. On the following morning a vaginal tampon was introduced, after which the patient got up and went about the house as usual suffering no inconvenience from the tampon. Next morning, June 12, the tampon was removed and another introduced. When this was removed on the following day, June 13, the cervix was softened, os softened and slightly dilated, pelvic floor and vulva softened and dilatable. A bougie was then introduced into the uterus and a tampon into the vagina. Uterine contractions commenced about midnight, fourteen hours after introduction, and the child was born four hours after. Easy labor.

Mrs. C., aged forty. Fourth pregnancy. Had one convulsion in second month and afterward serious symptoms of melancholia. When five months advanced, a consultation was held, but it was decided not to empty the uterus then. Expected confinement July 14. No sign of labor July 15. After preparation a vaginal tampon was introduced. On the next day, July 16, the tampon was removed and a second intro-

duced. Labor commenced six hours after, the parts being fully dilated in five hours. Easy forceps delivery.

Mrs. D., aged thirty-two. Third pregnancy. Expected confinement August 15. No sign of labor August 18. Introduced tampon, and the patient got up and went about as usual. Next day, August 19, removed tampon and introduced second tampon. August 20, removed this tampon and introduced bougie. There was some resistance after the bougie had been passed apparently three inches within the uterus, but with a little coaxing this was overcome, and the bougie was pushed to the fundus. The membranes were ruptured high up, and the amniotic fluid commenced to discharge while the tampon was being introduced into the vagina. The operation was finished at 11 a.m. Labor commenced at 1 p.m., and the child was born at 4 p.m. Easy labor.

It was noticed in these and other similar cases that it was easy to induce labor at term. The patient is not, as a rule, excited or alarmed. It is only necessary to say, "We will not do much, but we wish to assist Nature in bringing on labor." After the tamponade the patient can generally go about and do her ordinary work, and sometimes does not even know that the vagina is plugged. As a rule, she does not know after the introduction of the bougie that anything of the sort is in the uterus. After such introduction, however, it is not considered advisable to allow the patient to walk about. The vaginal tampon appears to have a two-fold effect: First, it softens and dilates the cervix and tends to cause uterine contractions. Second, it softens and dilates the vagina, pelvic floor, and perineal body in a way that makes expulsion or extraction through these parts much more easy than under ordinary circumstances.

#### METHODS OF PROCEDURE.

It will be noticed that the methods employed are not exactly those of Krause or Schauta, but are a combination of the two. The plan (so far as I know), first recommended by Schauta, of inducing abortion and labor by vaginal tamponade would always be admirable if it were effectual. Many who have tried it say that it is practically useless. But do such men understand Schauta's method? Certainly, many do not. In the first place, it may be stated that the vagina cannot be properly plugged while the patient is lying on her back or on her side. The patient must be put in Sim's position. The perineum and pelvic floor must be thoroughly retracted by a Sim's

speculum, and the vagina properly ballooned, so that its vault being thus distended may be completely filled by the material used for packing. It is only necessary to pack tightly about the upper two-thirds of the vagina. The mistake commonly made of packing the entrance of the vagina tightly generally causes great pain, and frequently retention of urine.

As before mentioned, after this minor operation is performed the patient may walk about with little or no inconvenience. The material used for packing is five per cent. iodoform gauze or a rather fine iodoform cheesecloth.

In introducing a gum elastic bougie (11 or 12, English size) the safest way is to place the patient on her back, introduce a weight speculum, seize the anterior lip of the cervix with a volsellum forceps, pull slightly, pass in the bougie, and push it up between the membranes and the uterine wall to the fundus if possible. Frequently, we do not use the weight speculum, but introduce two fingers of one hand, place the tips behind the os, and pass in the bougie over these fingertips. This method was adopted in the case of Mrs. D., but it will be noticed that the introduction of the bougie was followed by an outpour of amniotic fluid. It may appear to some inconvenient and awkward, when both the bougie and gauze are used, to place the patient on her back for the introduction of the bougie, and then in the semiprone position for the vaginal tamponade. This, however, is a small matter, especially if one is assisted by a skillful nurse.

It may be said that we cannot always tell when the patient has reached term. That, of course, is true, and such uncertainty may cause some perplexity. Under such circumstances we may find that the cervix is "taken up," and if so we need not delay. In any case it is better, as a rule, to deliver two weeks before term than to wait for four or five weeks after term.

In conclusion the following recommendations and explanations are made:

Induce labor in all cases within two or three days after the expected date of confinement without waiting for any signs of labor.

First plug the vagina according to the Schauta method, making a special effort to pack the vault tightly.

After packing allow the patient to get up and go about if she wishes.

Remove the tampon in twenty-four hours, introduce a new

plug, and again allow the patient to get up and go about if she chooses.

Remove the second tampon in twenty-four hours after its introduction.

If by this time labor has not commenced it is generally advisable to pass a bougie into the uterine cavity before introducing the third tampon.

In such cases we have found that labor always commences shortly after this Schauta-Krause operation.

In a fairly large proportion of cases the use of the bougie has not been found necessary, as labor comes on shortly after the first or second vaginal tamponade.

30 Gerrard Street East.

—*American Journal of Obstetrics.*

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## PUS TUBES IN THE MALE—TREATMENT BY VASOSTOMY.\*

BY WILLIAM T. BELFIELD, M.D., CHICAGO.

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The pus infections of the urinary duct have been for centuries the object of clinical study and surgical exploration; those of the less conspicuous seminal duct remained virtually unexplored until the twentieth century. Pus tubes in the male are to-day as generally unrecognized and surgically ignored, as were the pus tubes of the female thirty years ago.

*Clinical Anatomy.*—Two anatomical features of the seminal duct are clinically important:

1. The distensibility of the seminal bladder is slight, because it is enclosed in an unyielding fascial envelope. When the minute natural outlet, the ejaculatory duct, is occluded by inflammatory swelling or otherwise (and this often happens) the vesicle cannot expand indefinitely, as does the urinary bladder. When the accumulating pus or secretion exceeds the limited capacity of the vesicle, it is forced through the only other outlet, the vas deferens. Since the vas is highly muscular, the epididymis less so, the tail of the epididymis is the catch-basin for pus

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\* Synopsis of President's address before the American Urological Association, June 7, 1909.

from the vesicle—not merely in gonorrhœa, but in other urethral infections also.

An opening into the vas—vasotomy—affords not merely the means of injecting solutions into the vesicle, but also an exit for pus from the entire seminal duct, vesicle and epididymis included.

2. Ampulla and vesicle are closely bound to the neck of the bladder; infections of the former may therefore induce bladder symptoms, and may even invade the bladder wall by continuity. Hence symptoms of cystitis are sometimes relieved by draining the vesicle, when treatment directed to the bladder is futile.

*Some Symptoms Caused by Pus Tubes.*—Urinary—Frequent and painful urination, retention, pyuria, hematuria.

Genital—Frequent and painful emissions (even in married men), priapism, pyospermia, hematospermia; the chronic, infections may result in fibrous thickening of vesicle, vas and epididymis, with hydrocele, impotence, sterility.

Rectal—Pain, local proctitis, causing patients to consult rectal specialists.

Abdominal—Pain from pus tubes caused erroneous diagnosis of appendicitis in two instances, with futile operation in one, by a competent surgeon; mistaken diagnosis of ureteral calculus and renal colic have also come to my notice.

*Surgical Treatment.*—The vesicle—Incision of the suppurating vesicle from the perineum was made by Lloyd (1889); Dittel, the father of perineal prostatectomy, used this incision to reach and incise the vesicle (1894). This operation has been improved and extensively used by Fuller (in over 100 cases). It is bloody, imperils the integrity of the rectum, but seems devoid of mortality.

The distended vesicle can be safely and easily opened from the rectum, the approach preferred by most surgeons. Bleeding can be minimized by incising with the cautery. If the vesicle be empty and its outlines obscure, it can be distended by injection through a vasostomy. When both bladder and vesicle are distended, the latter becomes very accessible through the rectum. Klotz, in 1895, introduced the nozzle of a special syringe through the endoscope into the urethral end of the ejaculatory duct, and injected liquid into the vesicle. The patient promptly developed epididymitis, presumably from forcing the vesicular contents through the vas. This ingenious procedure is, for several reasons, lacking in clinical value.

The Epididymis—Early in the last century the infected epididymis was punctured by Vidal and others, not for the evacu-

ation of pus, but for the relief of tension. Incision of the non-fluctuating epididymis and tunica vaginalis for the evacuation of pus was introduced independently by Escat (1903) and Belfield (1905), the latter using the incision to inject vas and vesicle at the same time. The epididymis incision has been practised by Bazet also, and has been developed and advocated by Hagner in acute gonorrhoeal epididymitis. It is equally necessary in non-gonorrhoeal, tender indurations of the epididymis, some of which I have found to contain pus.

Since non-tuberculous infections reach the epididymis by way of the vesicle and vas, acute suppuration of the epididymis proves existing infection of the vesicle; obviously then the latter should be medicated by injections through the vas whenever the suppurating epididymis is incised—a procedure that may be designated epididymo-vasostomy.

The advantages of this procedure over medical treatment are: (1) shortening the time of pain, fever, swelling and confinement; the patient is ready to resume ordinary avocations in two to four days; (2) avoidance of the usual chronic, tender induration in the tail of the epididymis, which sometimes contains pus and gives rise to recurrent epididymitis. Whether the chance of permanent occlusion of the epididymal canal is increased or diminished by the incision, remains for larger experience to determine.

The prevention of Epididymitis—Since the invasion of the vesicle by the gonococcus or certain other bacteria renders extension to the epididymis imminent, such acute vesiculitis should logically demand immediate opening or even division of the vas; for by this harmless procedure the trail to the epididymis is interrupted, while the vesiculitis can be effectively treated by injections through the vas into the vesicle. As most of my patients have preferred to risk epididymitis rather than an "operation," my observation of this preventive measure is too limited to be convincing. Six cases were so treated; all escaped epididymitis—whether through the vasostomy or not remains undetermined. The first who gladly submitted was a young man who had lost one testicle through a previous gonorrhoea; for him an operation to preserve his sole testicular treasure had no terrors.

*Vasostomy and Epididymo-Vasostomy.*—Four years ago I published the method—original so far as I have learned—of draining and medicating vas, ampulla and vesicle through an incision into the vas—vasostomy; and extending the incision into the epididymis when necessary—epididymo-vasostomy. I have

now opened the vas 149 times in 107 patients, usually in the office under cocaine anesthesia, often without assistance, sometimes passing a wire through the vas and ejaculatory duct to the urethra.

*Value of Vasostomy.*—By this trivial operation, the entire seminal duct is relieved of abnormal tension, vas and vesicle are drained and medicated, the epididymis is protected from infection, or, if already infected, from pressure infection; it has sometimes seemed that the pus drained from the epididymis also. Medication of the vesicle is effective, because the injected solution remains in its cavity for hours or days. When preliminary cleansing is desired, a slow stream can be injected through the vas to the vesicle and milked into the urethra by the finger in the rectum (demonstrated with argyrol solution).

*Results of Vasostomy.*—These have not been uniformly brilliant; in this tentative work diagnoses have doubtless often been faulty. Yet many cases refractory to standard treatment have been promptly cured, such as frequent urination, gleet, admixture of blood with semen, recurrent epididymitis. The following are specimen cases: (1) Man 41 years old, referred by Dr. H. B. Favill; recurrent vesiculitis and epididymitis of left side, repeatedly causing fever, frequent urination, pain along seminal duct, confinement to bed. Vasostomy and repeated irrigation of vesicle with protargol solution was made. No return of symptoms during two years. (2) Man 58 years old, referred by Dr. F. B. Turck; frequent urination, oozing of blood-stained mucus from meatus, bloody emissions; duration several months. Right vesiculitis; vasostomy and irrigation, with prompt cessation of symptoms.

*Technique.*—Two features are important: (1) fixation of the vas, which otherwise may drop into the scrotum and be recaptured with difficulty; (2) pulling of vas through the skin-cut above the skin, for manipulation. Details may obviously be varied at the discretion of the operator; the following is one of several useful methods: After the usual cleansing and cocainizing, the cord is caught by a vulsellum forceps whose points do not quite meet and hence do not pierce the sub-scrotal structures; the cord is caught an inch lower by a second vulsellum. If necessary to secure space, the contracted dartos can be relaxed by a hot fomentation. The cord between the vulsella is supported by the left forefinger while a half-inch cut is made down to the sheath of the vas. This is carefully opened, the vas pulled out and its canal opened longitudinally; a thread or wire may be passed into the vas for exploration if desired. A canali-

culus or other blunt needle attached to a small syringe is introduced into the vas and the solution slowly injected; 2 or 3 drachms often distend the vesicle uncomfortably. The finger in the rectum can press some of the vesicular contents into the urethra, permitting the injection of more solution into the vas. A catgut or other thread, passed into the lumen of the vas upward for a quarter-inch and then out through its wall and tied loosely above the skin, serves, if subsequent injections are necessary, to keep the vas open, to pull the vas out of the skin-cut, and to guide the needle into its lumen. If complete transverse division of the vas be deemed necessary, the silk-worm or catgut thread is passed into the lumen and out through the wall of each cut end, and the thread ends tied loosely above the skin. When reunion of the cut ends is desired, this thread loop is tightened, the thread serving as an axis splint which secures exact apposition of the cut ends of the vas. This principle, first published by Mayo (Annals of Surgery, Jan., 1895, which publication has been ignored by certain later writers), supersedes all other methods of reuniting the divided vas. Incidentally, I have discovered that a vas, of which a half-inch has been resected, can spontaneously reunite with a patulous lumen; evidently because the two ends are kept in the same axis by the sheath of the vas, and are brought together by the shortening of the scrotum through the contractions of the dartos, which usually follow a wound of the scrotum. This is important to remember in performing vasectomy.

The vas can be opened through either anterior or posterior wall of the scrotum; though each has its advantages, the latter seems preferable, the patient lying in the semi-prone position.



## AN INSTRUCTIVE FATAL CASE OF APPENDICITIS WITH ADVOCACY OF EARLY OPERATION.

By J. S. BODEN, M.B., B.S. LOND.,

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Dr. F. J. Smith's report of an obscure and fatal case of appendicitis decided us to bring this case forward.\* Like his, it was mysterious and indecipherable, the patient dying from pyæmia after a few days' illness. In his case general peritonitis was a part of the pyæmia. Both began with indefinite abdominal symptoms and diarrhœa. Both had rigors, which denoted the generalising of the poison, and, we know now, the futility of operation. There can only be one method of treatment likely to be successful in such cases—namely, early operation. It is to urge this and to aid others, when they meet similar obscure cases, that we venture to publish this paper.

The patient, aged 15 years, a lad of markedly bilious temperament, had not been very well for some days—"lackadaisical"—to use his mother's expression. On the evening of Jan. 21st he went to a whist drive and partook during the evening of sardine sandwiches, a sausage roll, trifle, jelly, and claret cup. Next day he was very lethargic, went to lie down on his bed in the afternoon, getting up for a walk before tea. During the evening he complained of headache, sore throat, and his temperature was found to be 102° F. On the 23rd he remained in bed all day, his temperature falling from 101 in the morning to normal by the evening; during the day he had four loose actions of the bowels. On the 24th, with the exception of a continuance of the diarrhœa (three actions) he appeared quite well, taking his ordinary food at meal times. His morning temperature being normal, he remained up from after breakfast till 10 p.m., when he went to bed apparently neither over-tired nor feverish. The first phase of the illness terminated at this time, as is shown on the chart. On the 25th he got up to breakfast and appeared well till mid-day, when he was given some bovril, which he vomited about two hours later, followed by some retching and pain in the upper

\* *The Lancet*, February 13th, 1909, p. 463.

part of the abdomen. He was seen that evening and found with a temperature of  $98^{\circ}$ , a pulse-rate of 82, a furred tongue, heavy breath, and some epigastric tenderness. His bowels acted twice loosely on this day. On the morning of the 26th he expressed himself as feeling better; there had been no further sickness and he said that the pain in his stomach had gone. He was thirsty, but had no desire for food. His temperature was normal; his tongue was covered with a thick white fur; the epigastric tenderness had gone, but on examining his lower abdomen there were distinct rigidity of the right rectus and an indistinct resistance to be felt just above and internal to the right anterior superior iliac spine. Just above the crest of the ilium and at the outer border of the quadratus lumborum pressure elicited pain. Per rectum there was no fulness or resistance. A provisional diagnosis of catarrhal appendicitis was made. At 6 p.m. the same day he had had a slight rigor and his temperature rose to  $102^{\circ}$ , his pulse-rate was 100, the "on guardedness" of the right rectus had disappeared, and a fairly definite resistance in the right lumbar region could be felt, which was not markedly tender on pressure. The bowels were inactive during the 26th and 27th. On the 27th the patient passed a very fair night, rousing at intervals of two hours for a drink, not complaining of pain in the abdomen, and able to lie quite comfortably with the right thigh extended. At 8 a.m. his temperature was  $99.2^{\circ}$ . When seen at midday it was  $105^{\circ}$ , with a pulse of 114; local examination showed no change from the previous night. At 8 p.m. his temperature was  $104.6^{\circ}$ , his pulse was 120, and his appearance strongly suggested typhoid fever. During the evening, on and off, he had pain in the right side of the abdomen, which was relieved by the application of a hot-water bottle, and passed a very fair night till 5 a.m. on the 28th, when he had a second slight rigor, with a return of pain in the right side of the abdomen. His temperature after the rigor was  $103.2^{\circ}$ . At 8 a.m. it had fallen to  $99.4^{\circ}$ , but had risen again at 10 a.m. to  $105^{\circ}$  with a pulse of 105. A blood specimen was taken which gave a negative typhoid reaction. In view of the second rigor, Mr. W. H. Battle was asked to see the case and be prepared to operate. When he saw the boy at 2 p.m. the temperature was  $103^{\circ}$  and he had a good quality pulse of 98; his tongue was certainly cleaner, and it was considered that operation was not necessary on account of the lad's excellent general condition, the fact that the bowels had acted without pain twice in the night, the indefinite character of the local symp-

toms, the probability that the appendix was lying behind and to the outer side of the cæcum (the most favorable position for any active mischief remaining localised), and that it was the seventh day of the illness. The same evening (the 28th) the spleen could just be felt and the lad's condition was so like that of typhoid fever that relief was felt no operation had been done during the afternoon. His temperature remaining fairly steadily at from  $103^{\circ}$  to  $104^{\circ}$  till next morning (the 29th), with a pulse of from 98 to 104. At 10 a.m. his temperature had fallen to  $99^{\circ}$  and his pulse to 76. During the three days (28th to 30th) the bowels continued to act loosely from three to five times in the 24 hours. A third rigor occurred on the afternoon of the 29th, his temperature at 6 p.m. rising to  $105.6^{\circ}$  (the pulse was 112), reduced by sponging to  $102.6^{\circ}$  and falling to normal at 10 p.m. and to  $97^{\circ}$  at 2 a.m. (a fall of  $8.6^{\circ}$  in eight hours). Apart from the remittent (and intermittent) temperature the boy's condition appeared good and there was no marked change either generally or locally. Dr. T. W. Hicks of Finchley saw the case in consultation on the 30th. There were no indications for operative interference and nothing could be found to account for the rigors; he had had a fourth in the early morning of that day. The local condition at this time prompted the somewhat old-fashioned diagnosis of "typhlitis," a definite, only slightly tender, sausage-shaped swelling being felt with its large axis vertical rather external to the region of the cæcum. The temperature kept very remittent on the 30th and 31st, and six rigors occurred during the 48 hours. When seen by Mr. Corner on Feb. 1 the patient was bright and cheerful, the tongue was covered with white fur, the temperature was  $99.6^{\circ}$ , and the pulse 84. The abdomen was not distended, moved on respiration, could be palpated all over, and was only tender in the right loin. The right rectus was a little more tense in its middle than the left. Some cutaneous hyperæsthesia was present in the loin and at the side; there was none in front. The liver was not tender or enlarged. Considering the *pros* and *cons* of the case the appendix seemed most likely to be the cause of the trouble, and, in view of the boy's getting worse since he was seen on the Thursday before by Mr. Battle, operation was recommended, on the distinct understanding that the infection might have become too generalised for the operation to save the boy.

Mr. W. S. Rooke, anæsthetist to the Great Northern Hospital, gave the anæsthetic. The abdomen was opened through the right rectus and the cæcum found. It was fastened by

adhesions into the loin. Gauze plugs were used to pack off the peritoneal cavity, which was inflamed, and the proximal portion of the appendix was followed to the tip which was found in a small abscess cavity under the liver at the back of the abdomen and on the outer side of the ascending colon. It was removed, a gauze plug packed in the abscess cavity, and the wound closed round the gauze drain. The boy bore the operation well. On examination the distal half inch of the appendix contained a faecal concretion, was gangrenous at the tip, and perforated over the concretion. The patient rallied well from the operation and his condition on Feb. 2nd was distinctly hopeful; there were no further rigors, no sickness, and the bowels acted naturally twice during the day; he had an attack of faintness during the early morning of Feb. 3rd and slight icterus was noticed. He was dressed under an anæsthetic at midday, and at 2 p.m. his temperature rose to 103° and his pulse to 140 (at no time during his illness up to this time had his pulse exceeded 120), and on examination an area of harsh pleural friction was found over the lower left axillary region, with physical signs pointing to some underlying pneumonic consolidation. From this time he went rapidly downhill with dilatation and failure of heart, and died at 9 a.m. on Feb. 4th.

This case illustrates many clinical object-lessons in an important and common disease. 1. The great value of early operation (within 36 hours of the onset, which would have been the only chance of saving the patient). Early operation is the method of the future; far more appendices will be removed in the acute stage and far fewer in the quiet interval. When the patient is a young subject, in whom appendicitis is so common, an exploratory operation is justifiable in the early stage, even when the diagnosis is indefinite. 2. The illness began with indefinite abdominal symptoms and diarrhœa, unaccompanied by sickness. The diarrhœa is a toxic symptom, and if that symptom is present during or followed by appendicitis, that appendicitis is of a more than usually dangerous form. 3. Rigors are infrequent with appendicitis. A rigor at the beginning of the illness may mark the onset of an unusually toxic appendicitis. But should it occur later in the disease, a rigor suggests pylephlebitis, portal pyæmia, or general pyæmia, under which circumstances a fatal result may be expected. 4. The type of fever as shown in the accompanying chart is very unusual in appendicitis. It is markedly remittent. 5. But one of the most remarkable clinical features of

the case was that when the temperature was low, the pulse was quiet, and the boy not ill; yet he was probably doomed by the time of the second or third rigor. 6. Clinically, the illness was in two phases, the first without rigors subsiding before the second began. Although the illness appeared to subside, the cause of it did not, the suppurative process reawakening and rapidly killing the patient. The almost universal formation of pus in appendicitis constitutes its great danger and variations.

To sum up, this case illustrates the import in appendicitis: of an indefinite onset, of continued diarrhœa, intermittent fever, and rigors. It shows how both the local and general clinical conditions may be unreliable. And that in indefinite cases it is better to rely on probability—a young person with serious abdominal mischief very probably has appendicitis, the seriousness of the illness may show itself in the pulse, the temperature, the sickness, the diarrhœa, etc.—and act on that, than to rely on the very indefiniteness of the case and pursue ordinary domestic treatment.—*The Lancet*.

# Progress of Medical Science.

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## MEDICINE.

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IN CHARGE OF W. H. B. AIKINS, F. A. CLARKSON, AND BREFNEY  
O'REILLY.

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### **Creosote in Pulmonary Tuberculosis.**

Beverley Robinson, of New York, is of the opinion at the present time that there is only one medicinal treatment that is really valuable in pulmonary tuberculosis, and that is beechwood creosote, internally and by inhalation. In order that it may be curative it must be used with intelligence and persistently during many months. Internally the best formula is:

Beechwood creosote (Merk's), 6 drops; glycerine, 1 oz.; rye whisky, 2 ozs. Dose, 1 dessertspoonful every two, three or four hours, best diluted with a little water.

The best formula for inhalation is: Equal parts of beechwood creosote (Merk's), alcohol, and spirit of chloroform. Use 10 drops on the sponge of a perforated zinc inhaler. Repeat a few drops as required. The inhaler should be used frequently; at first for a few moments each time; later (after a week or more) it may be used half an hour or an hour at a time. Finally, it may be used almost continuously during the day and frequently all night, without interfering with sleep. Occasionally it is necessary to lessen the proportion of creosote, in the inhaling formula at least, for a while and until the patient is accustomed to the use of the inhaler.

A few patients never use the inhaler in a thoroughly satisfactory way by reason of personal idiosyncrasy or inability to understand about its proper use. Whenever the inhaler is used during many hours of the twenty-four, a smaller amount of creosote is required internally. When, on the contrary, the inhaler cannot be used frequently and for a long while, it is necessary to give more creosote internally. In but very few cases is it desirable to go beyond half a minim every two hours. Usually, when intolerance has arisen, it is because of too large or too concentrated doses. Creosote should always be given in solution.

Following out his plan of treatment carefully, the author

states, will relieve most patients of unpleasant symptoms. It will help cure a large number. It will hurt none. It is the best adjunct to fresh air, sunlight, good food, and rest.

Without this treatment many patients will die; with it, taken in time, many will recover who otherwise would not. The author's conviction is born of over twenty-five years of a large and varied experience, and he believes there is no treatment of any value, local or general, that he has not faithfully tried.—*Amer. Jour. Clin. Med.*, July, 1909.

### **Atropine Methylbromide and Atropine Sulphate in Diabetes.**

J. Rudisch, visiting physician to the Mt. Sinai Hospital, New York, in a preliminary report strongly recommends the use of atropine, especially in the form of the methylbromide, in the treatment of diabetes. He has used the drug in a series of cases and finds that the carbohydrate tolerance is decidedly increased, and that there is a reduction in the amount of sugar excreted. He administered the atropine in the form of both the methylbromide and the sulphate. The former has the advantage of being much less toxic, but its effects are not so prompt as those of the sulphate; as the initial dose of the methylbromide he gave 2-15 grn. t. i. d. to adults, gradually increasing this by 1-15 grn. until 8-15 grn. t. i. d. were being taken. In one case 3 grn. were given daily over a short period with no other toxic effect than dryness of the throat.

The initial dose of atropine sulphate should be 1-150 grn. t. i. d., which may be gradually increased to 1-20 grn. t. i. d. Children require a dosage proportionate to their age. The youngest patient, a nine-year-old boy, received an initial dose of 1-250 grn. of the sulphate three times a day, and this dose, in the course of several months, was gradually increased to 1-10 grn. per diem.

It is noteworthy that these unusually large amounts of atropine are well tolerated, provided the initial dose is small and the increase gradual. It is not necessary to attain the maximum dose in the majority of cases, however, much smaller amounts often causing the glycosuria to disappear. With the appearance of the first toxic symptom, usually a marked dryness of the throat, the atropine was either stopped entirely, or, more often, the attempt to increase the dosage was temporarily abandoned. It was always possible to resume the drug after a period of rest.

While the tolerance for atropine varies in different individ-

uals, the author has not observed a single case in which a peculiar susceptibility totally precluded the administration of one or other of the salts previously discussed. In no instance was an atropine "habit" acquired, nor were there any deleterious effects upon the general health observed from its prolonged administration.—*Med. Record, June 26, 1909.*

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## OBSTETRICS AND GYNECOLOGY.

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IN CHARGE OF ADAM H. WRIGHT, K. C. M'ILWRAITH, FRED. FENTON  
AND HELEN MACMURCHY.

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### **Problems still Unsettled, Requiring for their Solution the Combined Efforts of the Obstetrician, the Biochemist, and the Clinical Pathologist.**

Sir John Byers, of Belfast, who delivered the address in Obstetrics at the recent meeting of the British Medical Association, spoke about unsettled problems, as follows:

We have accomplished much in the last quarter of a century, but there are still many questions in obstetrics that await solution. How little we yet know as to the real nature of menstruation! Is dysmenorrhoea a disease, or is it a symptom of many underlying conditions? What is its relation to sterility? What a field the diseases of pregnancy afford to the careful scientific investigator! We speak of the toxæmias of pregnancy, but what are these toxins and how and where are they elaborated? What are the factors in the production of herpes (hydroa) gestationis? What really is eclampsia? How does tubal pregnancy occur? What is the cause of chorion-epithelioma? How do diseases of the placenta arise? Why are women at childbirth so susceptible to bacterial infection? Why do the bacteria travel at one time along lymphatics, at another in the course of blood vessels? We know that puerperal infection is caused by microorganisms, but how do these microbes become virulent and in what way do they lose their malignant influence? Has season, race, or the predisposition (lowered resistance to infection) of the individual attacked anything to do with their power? In other words, while we know a great deal about the seed, we are still largely in the dark as to the soil. No doubt operative inter-



ference has accomplished much in puerperal infection, especially in cases of localized abscess, pus tubes, and intense peritonitis limited to the pelvic organs, and occasionally in ligation or excision of thrombosed veins in puerperal pyaemia (as has been done in infected thrombi in mastoid disease); still, when severe puerperal infection is present, can we yet boast of having advanced much beyond the view of William Hunter, who said, "Treat these in what manner you will, at least three out of every four will die." Have our surgical measures accomplished much in the very severe types of puerperal infection? Speaking for myself, in the most fatal and formidable form of puerperal infection—that due to the *Streptococcus pyogenes*—I have seen little advantage so far from surgical interference. The serum treatment of puerperal infection has also been disappointing clinically and, indeed, with the exception of the antidiphtheric and the antitetanic serums, is the preparation of the various antibacterial serums based on exact scientific principles? Certainly no one should use an antibacterial serum "except where, as in the case of an antidiphtheric serum, the pathologist is prepared to give him definite information with respect to the amount of protective substances in the serum." Is the future of these severe puerperal infection cases, so far as treatment is concerned, not with that school established by one who received his early education in Belfast, Sir Alnroth Wright, and his pupils, whose work is revolutionizing every branch of medicine, and who from each case of puerperal infection may elaborate the proper vaccine-therapy?—*B. M. Jour.*

### **Saving the Perineum.**

The best safeguard for the perineum is the slow descent of a well flexed head. Passage of the head through the vulva may be compared to that of a foot and ankle through a small cylinder. The small fontanelle, the large fontanelle and the neck may be compared to the toe, heel, and instep of the foot. It will be seen that pressure with the thumb downward upon the toe, and with the fingers upward against the heel until the instep has passed the lower plane of the cylinder lessens the danger of impaction and facilitates egress. Pressure made with the thumb upon the small fontanelle and with the fingers against the large fontanelle, until the neck is well in the symphysis pubis, will minimise the danger of tearing when the head descends.—*Little: Mont. Med. Jour.*

# Editorials

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## INTER-PROVINCIAL REGISTRATION.

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We publish in this issue a communication from a physician of Toronto who recently returned from the Pacific Coast, *via* Banff and Winnipeg. The letter is interesting in many respects, but especially because it expresses the sentiments of (we think) a majority of physicians in Canada. We are more than pleased, however, to be able to tell our correspondent that he is entirely mistaken in certain respects.

The Council of the College of Physicians is not sitting "idly by" while this great, strong wave in favor of Inter-Provincial Registration is sweeping over many provinces of Canada. The matter has, in fact, been very carefully considered by that body. It has not only "considered," but has acted, and is acting probably in a way which will be quite satisfactory to all who take an intelligent interest in the subject. At the last meeting of the Council the matter was discussed, and a resolution to send representatives to the West to confer with representatives of the Western Provinces as to reciprocity in its various aspects was passed. Drs. Spankie and Ryan were asked to go to the meeting of the Canadian Medical Association in Winnipeg. After the interesting discussion there, it was deemed advisable to have the Ontario Medical Council represented at the meeting in Banff, to which our correspondent refers. Dr. Spankie was present at the Banff meeting, which was held September 25th.

Yes, the Council has heard of the Roddick Bill of 1902; but, unfortunately, under existing conditions, it is not workable. On this account a resolution was unanimously passed at the Winnipeg meeting, which was substantially as follows (we quote from the *Winnipeg Bulletin*): "That the Canadian Medical Association urge on Dr. Roddick the importance of impressing on the Dominion Government the desirability of amending the Medical Act of 1902, so that when five or

more provinces agree to the provisions, and pass the necessary legislation to make it effective, the Bill may become law, and be effective in these provinces; Further, that a committee should be appointed, with representatives from each of the provinces, to consult with Dr. Roddick as to the provisions of the Bill."

All things considered, it would seem fair to abstain from hostile criticism of the Council's attitude until the reports of its representatives who visited the West have been received and acted on. May we hope that its members will rise equal to the occasion, and do gracefully what the majority of the profession of the province wish them to do.

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### AN OFFICIAL JOURNAL.

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The writer up to the present time has kept aloof from all discussions respecting the advisability of establishing an official medical journal for the Canadian Medical Association. The position at the present time is not fully understood by a large proportion of the members of that body. A brief explanation seems now in order. The matter was placed in the hands of a standing committee, known as the Finance Committee, under the chairmanship of Dr. John T. Fotheringham, of Toronto, formerly one of the editors of the *Canada Lancet*, with instructions to establish a journal as soon as financial conditions warranted such an undertaking.

With this end in view it was deemed advisable to seek incorporation. A committee, with Dr. Shillington, of Ottawa, as chairman, was appointed to look after the matter; and, as a result of its work, the association was incorporated by Act of Parliament last session. The next step was the somewhat important one of increasing the annual fee from two to five dollars. Under such circumstances the fact that the attendance this year was the largest in the history of the association was very satisfactory to the Finance Committee. It was clearly evident

that nearly, if not quite all the members at the meeting in Winnipeg wanted to see a journal established as soon as possible.

There can be no doubt at the present time as to the duties of the officers of the association. They should do all in their power to help the committee in its arduous task. There was at all times a feeling of optimism at the Winnipeg meeting. Canada is growing in many ways and in various directions. The members want the association to become bigger and broader in every sense. They wish to discuss from year to year subjects of national importance, and they want an official organ.

We are told that the official publication will be quite different from the present medical journals, and will not enter into competition with them. Such being the case it is hoped the existing journals will support the association as loyally in the future as they have in the past.

A. H. W.

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### DR. COOK AND THE NORTH POLE.

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People have been looking for the North Pole for a long time, and now a member of our profession claims that he has been the first to reach it. We learn from the Journal of the American Medical Association that Dr. Frederick Cook, of Brooklyn, was born in Sullivan County, New York, June 10, 1865. After taking an arts course in the University of the City of New York he took a medical course in the College of Physicians and Surgeons of Columbia University, New York, and practised in Brooklyn for a short time. He soon became interested in scientific exploration, and became surgeon of the Peary expedition in 1891. He was also surgeon of the Belgian Antarctic Expedition, and, on account of his good work in it, received medals from the Royal Geographical Society of Belgium. He was also decorated with the Order of Leopold by the King. We are told that another of his exploits was

the ascent of Mount McKinley in Alaska, which he was the first, if not the only one, to accomplish, in 1906. His writings are very interesting. "Through the First Antarctic Night," described his trip with the Belgian expedition. "To the Top of Mount McKinley," described his ascent of that mountain. There seems to be some doubt as to the truth of Dr. Cook's statements. Some people say he never reached either the top of Mount McKinley or the North Pole.

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### CANADIAN MEDICAL ASSOCIATION.

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In the opinion of many the 42nd annual meeting of the Canadian Medical Association, held in Winnipeg from the 23rd to 25th of August, was the best meeting held in many years. The attendance was the largest, 338 registering; the organization was about perfect and reflected great credit upon the Committee of Arrangements in Winnipeg; the social entertainments were first-class, and the addresses and papers of a high order of excellence. It was noteworthy that two Canadians were selected to deliver the two most important addresses, those in medicine and surgery, which were delivered by Professor Adami and Professor James Bell, respectively. Canadians also delivered the addresses before the sections on obstetrics and ophthalmology, namely, Drs. Adam H. Wright and R. A. Reeve, Toronto. These all brought out good audiences, as did the symposium on the kidney and the discussion on inter-provincial registration. It was to be regretted that the Milk Commission did not receive as good a hearing as it should have, but this was altogether due to the fact of an excursion crowding too closely upon the time allotted to the discussion on milk. We are of the opinion that this discussion would have been one of the features of the meeting if it had not been for the accident referred to, as Mr. McGill, chief analyst for the Dominion, Mr. Rutherford, chief veterinary for the Dominion, and Dr. Westbrook, of Minneapolis, were present to take part in this discussion. Those who, however, did remain had the pleasure of listening to the report of the work done by

Dr. C. J. Hastings, of Toronto, and speeches from Mr. McGill and Mr. Rutherford. Two items stand out prominently in connection with this meeting, namely, the desire for an official journal for the Association, and Dominion registration. The former was left in the hands of the Finance Committee to go on with; the latter will be taken up by a special committee which will join hands with Dr. Roddick and the presidents or representatives of the various medical councils.

The resolution *re* Dominion Registration, which was unanimously adopted, reads as follows: "Therefore I (Dr. R. W. Powell) move that this Canadian Medical Association, now in session, urge upon Dr. Roddick the great importance of impressing upon the Government and Parliament of Canada the desirability of so amending the Canada Medical Act of 1902 that when five or more provinces agree to the provisions and pass the necessary legislation to make it effective, the bill may become law, and apply to those provinces which have so legislated. That in order to strengthen Dr. Roddick's hands a committee be formed of representatives from each of the provinces to consult with him on the provisions of the bill and as to the amendments necessary or desirable, and finally that the various colleges of physicians and surgeons or Provincial Licensing Boards in the Dominion be respectfully invited to nominate at least one of their own numbers to serve on such committee."

Annual Report of General Secretary.—There were two hundred and twenty-eight registered at the 41st annual meeting at Ottawa last year.

When last the Association met in Winnipeg in 1901 you were pleased to elect me your General Secretary. The number in attendance then was 178.

During the succeeding years the attendance was as follows:

Montreal, 1902 .....	330
London, 1903 .....	302
Vancouver, 1904 .....	267
Halifax, 1905 .....	222
Toronto, 1906 (B. M. A. Meeting) .....	79
Montreal, 1907 .....	235
Ottawa, 1908 .....	228

The total attendance for these seven years 1,463

An average of 209 a year. The previous seven meetings had a total attendance of 1,076, an average of 152 a year.

The total membership at the beginning of the Winnipeg meeting in 1901 was 900. Now the total membership is about 1,500.

Let us review, however, the work of the Association in other respects.

Besides the numerous addresses and scientific papers the Association has produced during the past seven years, which have gone to enrich Canadian, other British and United States medical literature, we have dealt with several questions of practical medical politics.

Established in 1901 in Winnipeg, the Canadian Medical Protective Association has perfected its administration, and has demonstrated to the medical profession of Canada and to others that it is an organization of the first importance in the medical life of the Dominion.

Dominion registration has not come under our attention these seven years, as about that time it had been placed in the hands of Dr. Roddick, who finally succeeded in having passed The Canada Medical Act, now standing as Chapter 137, Revised Statutes of the Dominion, 1906. Again this question comes before us. May we hope that it will be pushed to a final and successful conclusion.

The question of a Bureau of Health for Canada has year after year engaged the attention and consideration of this Association. Time and again the Federal Government has been requested to consolidate its various medical services, at present administered under four separate Departments of the Crown, into one Bureau of Health, under one of the existing Ministers—and then extension and expansion thereof. So far the Association has gotten the assurance from the head of the Government, the Prime Minister: "It is only by knocking at the door that the door will be eventually opened."

Reorganization of the Association has been successfully accomplished, which reorganization looks for the affiliation of all the provincial medical associations and the establishment of a journal to be the official journal of the Association.

A Milk Commission was appointed last year at Ottawa, which has been doing a great amount of work, the results of which will be brought before this meeting.

By Act of the Federal Parliament, assented to May 19, 1909, the Canadian Medical Association is now an incorporated body. The several projects before the Association at the present time call for good financial support. In the past the Association has endeavored to do a certain amount of use-

ful work, but year after year it becomes manifest that the work of the Association cannot be carried along as successfully as it should be, and as it could be were its financial position assured. Now that the Association is an incorporated body, it may be permissible to suggest that there may be some members thereof who, either of themselves or through others, could voluntarily contribute to the financial support of the Association, and thus the more effectively ensure the carrying out of those projects the Association has set out to accomplish.

All of which is respectfully submitted.

GEORGE ELLIOTT,  
*General Secretary.*

Toronto has been selected as the place of meeting of the Canadian Medical Association in 1910, with the following officers: President, Dr. Adam H. Wright, Toronto; General Secretary, Dr. George Elliott, Toronto; Treasurer, Dr. H. B. Small, Ottawa; Vice-Presidents and Local Secretaries, the presidents and secretaries of the provincial medical societies *ex officio*; Vice-President for the Province of Quebec, Dr. Normand, Three Rivers; Local Secretary for Quebec, Dr. R. P. Campbell, Montreal; Finance Committee, Dr. J. T. Fotheringham, Toronto (Chairman), Dr. F. N. G. Starr, Toronto, Dr. S. J. Tunstall, Vancouver, Dr. Murray MacLaren, St. John, N.B., Dr. James Bell, Montreal, and the President and General Secretary; Chairman of Committee on Medical Legislation, Dr. A. T. Shillington, Ottawa; Chairman of Committee on Medical Education, Dr. R. A. Reeve, Toronto; Chairman of Committee on Hygiene and Public Health, Dr. A. T. Shillington, Ottawa; Chairman of Committee on Amendments to Constitution and By-Laws, Dr. H. B. Small, Ottawa; Chairman of Committee on Reports of Officers, Dr. E. Ryan, Kingston; Chairman of Committee on Necrology, Dr. J. H. Elliott, Toronto; Chairman of Milk Commission, Dr. C. J. Hastings, Toronto.

Dr. R. A. Reeves, Toronto, was elected chairman of the Executive Council, and the following members thereof were in attendance: Elected by the Association—Dr. R. W. Powell, Ottawa; Dr. A. T. Shillington, Ottawa; Dr. Murray MacLaren, St. John, N.B.; Dr. R. A. Reeve, Toronto; Dr. John T. Fotheringham, Toronto; Dr. J. H. Elliott, Toronto; Dr. Chas. J. Hastings, Toronto; Dr. J. C. Mitchell, Brockville, Ont.; Dr. Ingersoll Olmsted, Hamilton; Dr. J. George Adami, Montreal; Dr. Edward Ryan, Kingston; Dr. H. A. MacCallum, London, Ont.; Dr. H. G. McKid, Calgary; Dr.



James Bell, Montreal; Dr. R. A. Kennedy, McLeod, Alberta. Representing Nova Scotia Medical Society—Dr. John Stewart and Dr. George M. Campbell, Halifax. Representing the Ontario Medical Association—Dr. D. J. Gibb Wishart and Dr. F. N. G. Starr, Toronto. Representing Manitoba Medical Association, Dr. Harvey Smith (President), Dr. R. S. Thornton, Deloraine, and Dr. S. W. Prowse, Winnipeg. Representing British Columbia Medical Association—Dr. S. J. Tunstall, Vancouver. Special Committee on Medical Education of School Children: Dr. John Stewart, Halifax; Dr. Murray MacLaren, St. John, N.B.; Dr. S. J. Tunstall, Vancouver; Dr. R. W. Powell, Ottawa, and Dr. R. J. Blanchard, Winnipeg.

Dr. W. J. Mayo, Rochester, Minn., was elected an honorary member of the Canadian Medical Association at Winnipeg.

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**ABSTRACT OF ADDRESS OF THE PRESIDENT,  
DR. R. J. BLANCHARD, AT THE  
WINNIPEG MEETING.**

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Dr. Blanchard opened his presidential address in a humorous vein, with a few touches of prophecy, merely to point out what could be done in the way of developing the knowledge of medical science and the advancement of the profession. There were at present approximately 6,000 medical men in Canada, and this was the only inter-provincial organization. There was great need of a closer organization, not for the purpose of advancing their monetary remuneration or to draft laws to make the study of medicine a closed corporation for the few, but rather to broaden their efficiency and by an interchange of idea and a centralization of efforts, to develop all lines of investigation. Some persons were of opinion that medicine was a realm of mystery, while on the contrary it should be the effort of the profession to give all possible information which was for the benefit of the human race. There was a great opening in medicine for men with money who could afford to give their whole time to research without having to depend upon private practice for funds. It was the duty of every doctor to defend medicine from the inroads of quack-

ery. And there was one thing which the association should seek, and that was the power to discipline members of the profession more severely than is possible under existing laws.

#### AS TO EXPERT TESTIMONY.

Recently attention has been repeatedly drawn to the unreliable nature of expert testimony in the law courts. The matter had come to such a pass that it was a subject for ridicule and jurists should try to find some way to remedy the evil. It seems difficult to understand why the provincial barriers should not be removed and the whole medical profession of Canada placed upon a single standard. Federal authorities, he felt, would be much better suited to handle a subject of such magnitude. The laxity of provincial and municipal authorities in taking steps for the prevention of the spread of disease was almost criminal in some respects. They should be induced, if possible, to take a more active and intelligent interest in this matter, for proper precautionary measures were of inestimably greater benefit than any amount of treatment. Then, too, everything possible should be done to raise the standard of the medical men, not so much by extending the term of study and making it more expensive, but rather by making the examinations more difficult, giving better facilities for study, and by gradually weeding out the undesirable.

#### THEORY AND PRACTICE.

Touching on the question of hospitals, Dr. Blanchard said that the difference between state-owned and charity-supported hospitals was just the difference between theory and practice. While the state-owned hospital was undoubtedly the more desirable in theory, there were so many derogative influences at work that it had never proved a success. It seemed impossible to lift it entirely above the realm of politics and in addition it lost the sympathetic support of the whole community. Federal control of infectious diseases was to be desired, with properly qualified officials to look after everything of this sort. It would be a measure of protection to the people of Canada as a whole. The handling of insane patients was one which needed great improvement, the existing methods being like a page from the dark ages. In the earlier stages the handling of insane persons should be a department of the hospital work, where physicians could have an opportunity of studying the patient. As matters stood now patients did not come under the attention of the medical profession till they were

so far advanced as to have to be sent to the asylum, so that outside of the alienists the medical profession knew little of these diseases of the mind. The practice of confining insane persons in jails and police stations was brutal and inhuman. There was one question which the people of Canada should take up more actively and that was the training of the body as well as the minds of the children.

The medical profession could not but recognize the fact that physical as well as mental training were essential to national development. When Greece was at the height of its glory this was one of the first laws of the country, and to-day in Sweden the matter was being taken up actively and intelligently. In the opinion of the speaker, boys between the ages of 14 and 18 years of age could not do better for themselves than to spend three months of the summer in the country under military discipline. Now they loaf about the theatres or in the parks where they get a low ideal of sports as they are now carried on. A sound, healthy constitution and a willingness to obey orders were learned by boys under military training, and these were matters which a nation could not afford to ignore. At the present time Canada is far behind the nations of the world in social and other development. An excuse was made that the country was young, but that excuse should not have to be made. For instance, in the study of the handling of tuberculosis, Canada ranks very low and has made but little real progress. As a starter school teachers should be paid better than starvation wages when better teachers would be induced to stay in the ranks. The country must afford it. People should give up a few of their luxuries if necessary, and there were huge sums spent on public work which was not nearly so important. It means the development and growth of the children of the nation. Advanced education is all well enough but it is not so essential. And then this advanced education is the reason for a great many failures and social misfits. There should be an awakening of public interest in the public health. At the present time hundreds of thousands of dollars would be subscribed for the treatment of a disease, but it was impossible to raise anything for the prevention of a disease. This could not be better evidenced than in the hiring of cheap, inefficient men to fill the posts of city engineer or medical health officer. The men in these positions should be the best available. The children in the public schools should be medically examined by competent men either at the expense of the parents or if necessary, of the state.

## Personals.

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Dr. A. Primrose returned to Toronto from Budapest September 24.

Dr. Alex. McPhedran returned to Toronto from Budapest September 18.

Dr. William H. Lowry, of Toronto, has removed from 2 College Street to 102 College Street.

Dr. H. A. Bruce returned from Budapest by way of Naples, and reached Toronto September 20.

Dr. E. B. Hardy, Bloor St. and Euclid Ave., has been appointed an associate coroner for Toronto.

Drs. Stanley Ryerson, W. E. Gallie, and George S. Strathy, of Toronto, have removed to 143 College Street.

Dr. Charles Trow, of Toronto, was married to Miss Helen Gertrude Matthews, also of Toronto, September 22.

Dr. Ernest Jones, 407 Brunswick Ave., Toronto, after spending two months in Europe, returned last month.

Dr. Edmund E. King has returned from Atlantic City, where he attended the meeting of the Roentgen Ray Association.

Dr. W. H. B. Aikins has returned from Europe, where he attended the meeting of the International Congress at Budapest, Hungary.

Dr. G. Sterling Ryerson has returned from Europe, where he attended the meeting of the International Congress at Budapest, Hungary.

Hon. Dr. J. O. Reaume, Minister of Public Works, returned to Toronto September 18, after having spent more than three months in Europe.

Dr. J. Orlando Orr, of Toronto, sails for Ireland October 14. Before his return, he will visit Scotland, England, and some countries on the Continent.

Dr. Moffitt Forster (Vic. '65), of 200 Ossington Avenue, who met with a serious accident last March fracturing the left femur is now convalescent and able to be about.

Dr. Murray MacLaren, of St. John, N.B., went out to the Pacific coast after the Winnipeg meeting. On his return journey, he stopped in Toronto, and remained for a few days, from September 22 to September 28.

Drs. T. J. Johnston, R. S. Richardson, and J. Robert, of Toronto, after doing post-graduate work in London, England, passed the examinations for the "double qualifications," M.R.C.S., Eng., and L.R.C.P., Lond.

Dr. Oswald T. Dinnick, who left Toronto last spring to do post-graduate work, has requested leave of absence for one year from the University of Toronto. If his request is granted, he will probably remain in England until next October.

Dr. C. A. Langmaid, '06 graduate of Toronto, has returned from the old country, after spending three years abroad, attending the hospitals in London, Edinburgh, Glasgow, Dublin and Paris. He has settled at 23 Brunswick Ave., and will practise general medicine.

Dr. Frederick A. Cleland, who graduated from the University of Toronto in 1901, and practised for some years in New York, has removed to Toronto, and opened an office at 134 Bloor West, and announces to the medical profession that he will devote his attention to gynecology.

## Obituary.

C. E. 1904

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### JAMES FULTON, M.B.

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Dr. James Fulton, of St. Thomas, one of the most prominent physicians in Western Ontario, died in the Victoria Hospital, London, Ont., September 15, aged 58. Dr. Fulton attended the Winnipeg meeting, and on his return he went into the hospital for treatment. The cause of death was shock following an operation. He received his medical education in Trinity Medical College and graduated in 1876. After graduating he did post-graduate work in London, Dublin and Edinburgh, receiving diplomas in all three cities—Surgeons, London; King's and Queen's Colleges, Dublin; College of Physicians, Edinburgh. In addition to a large general practice he was at the time of his death surgeon of the Michigan Central R.R., President of the Amasa Wood Hospital, and Chairman of the Board of Health of St. Thomas.

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### GEORGE EDMUND HUSBAND, M.D.

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Dr. G. E. Husband, of Hamilton, died suddenly of apoplexy, October 1st, aged 70. He graduated in 1861, and after practising in Galt for a few years removed to Hamilton about thirty-five years ago.

# Correspondence.

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## DO SOMETHING.

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*Editor of CANADIAN PRACTITIONER,—*

Immediate action is urgently required in regard to the now pressing question of Inter-Provincial Registration. The Council of the College of Physicians and Surgeons of Ontario has sat idly by, and to-day (September 25th) representatives of the four Western Provinces of Canada meet in Banff to arrange the preliminaries of a Central Examining Board for the medical profession in Manitoba, Saskatchewan, Alberta, and British Columbia. The profession in general have approved of inter-provincial action. They desire reciprocity, not only in Canada, but with Great Britain. The Council must know this. And yet they have continued their policy of masterly inactivity until they have lost their leadership of the profession even in our own province (if, indeed, they ever had it), and have placed us well in the rear of this most important movement. Did they ever hear of the Roddick Bill for 1902? Do they know that at this moment they ought to be actively engaged in arranging with the Ontario Cabinet to bring in at next session legislation to enable us to avail ourselves in Ontario of Dr. Roddick's Bill, the Canada Medical Act of 1902? And the Council cannot too soon take steps to identify themselves with the movement to secure a Central Examining Board in medicine, with jurisdiction from the Ottawa River to the Pacific Ocean. This would answer the question, "What is the good of the Council, anyway?"

M.D.

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## OPEN LETTER.

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The following open letter is published with the sincere hope that the objective point may be attained, and the Clinical aspect of Medicine and Surgery receive the serious consideration that it deserves.

*Editor of CANADIAN PRACTITIONER,—*

A meeting of physicians and surgeons interested in Scientific Clinical Research is called for Wednesday, October 27,

1909, at John Ware Hall, Boston Medical Library, No. 8 Fenway, Boston, Massachusetts. The meeting will come to order at 10 a.m., and carry its sessions through Wednesday, and, if necessary, through Thursday and Friday.

The object of the meeting is: First, to establish an American Association of Clinical Research. Second, to establish clinical research on an incontrovertible scientific basis in hospitals. Third, to institute an American Journal of Clinical Research, in which the work of members of the American Association and of others doing clinical research work in a scientific manner shall be published.

You and your friends are herewith cordially invited to participate in this meeting and in the proposed movement of scientific clinical research.

This invitation is extended to all physicians and surgeons whose interest goes beyond the immediate case work of ordinary clinical societies; and it is hoped that the invitation will be accepted by all medical practitioners, irrespective of their present medical affiliations, who can appreciate the necessity for establishing on an incontrovertible scientific basis the certainties and limitations of the present practice of medicine and surgery before attempting to add to the already large and cumbersome field of medicine.

The American Association of Clinical Research is not intended to disturb the present medical affiliations of its members nor to interfere in the very least with the duties they owe and the privileges they enjoy by virtue of their affiliation with any existing national medical body.

The American Association of Clinical Research is to take cognizance of the fact that the clinic requires cold facts and conclusive methods, and upon these fundamental requirements the structure and the work of the American Association of Clinical Research are to be built.

It is of the utmost scientific importance to establish conclusively all that is at present true in medicine and surgery, and only upon such proved knowledge, to base any further advancement. The clinic deals with clinical entities and not, like the laboratories, with parts as entities. Therefore, clinical research differs, and must differ, from experimental laboratory researches. Clinical research must consider clinical entities, and when considering parts, it must consider them only as parts and not as wholes. All that subserves the object of obtaining and investigating clinical facts and principles



belongs to clinical research and the laboratory is a part of the means of clinical research, but only a part.

The crux of the matter appears to be that experimental laboratory proof is not sufficient clinical proof. In order to advance in an irresistible line, clinical research must be based on a conclusive form or method of clinical proof. In experimental proof, we dislocate a part from a whole and attempt to prove the whole from the part, as though a dislocated part could always prove the whole. Or, we attempt to prove facts in one species by facts in another species, as though the two species were identical. For instance, the experiments made on animals to elucidate certain elements of fever bring out a fact of almost insurmountable difference between man and the lower animals, the fact that man has associated with the nakedness of his body a highly perfected power for regulating his temperature, a highly developed vasomotor system and a vast array of sweat glands, a characteristic complex of things which apparently no other species of animal life presents. Experiments made on animals to prove febrile or other clinical phenomena in man, may be suggestive, but for obvious reasons cannot be conclusive. To prove observations in man, the observations must be made on man and not on animals. But observations on man even are not necessarily conclusive. Individual observations on man cannot be conclusive, because the same experience cannot be repeated, and when we prove by numbers, we compare similar but not identical experiences. Analogy is not conclusive proof. Identity alone is conclusive proof; but since, in medicine, identical experiences cannot be repeated, we must provide simultaneous identical experiences in order to have proof by identity. Clinical proof is conclusively established when all observations and experiments are made conjointly by at least two competent men, preferably of opposite ideas, at the same time. Conjoined critical observation and experiment, at the bedside and in the laboratory, as may be required, furnish simultaneous identical experiences, the proof proceeding on the principle that a whole can be proved only by the whole and not by dislocated parts.

These and other weighty questions await your assistance for a necessary solution. The benefit that will accrue, both to medicine in particular and to the medical profession and humanity at large in general, from a satisfactory establishment of scientific clinical research, can be easily surmised. Come prepared, yourself and your friends, to give to this matter your mature convictions and your personal assistance.

Only from a critical interchange of critically acquired opinions, can we hope for clearness and for the clarification of the medical atmosphere now charged with confusion and indifference.

Your communication, indicating your interest and your expectation of being present at the meeting in Boston on October 27, next, is eagerly awaited, and on receipt of the expression of your interest, further developments will be communicated to you personally in due time.

Please address your communications at the earliest possible date directly to JAMES KRAUSS, M.D., 419 Boylston Street, Boston, Massachusetts.

Yours fraternally,

(Signed) JAMES KRAUSS, M.D.,

Chairman Committee American Association Clinical Research.  
419 Boylston Street, Boston. August 18, 1909.

## Book Reviews.

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PROGRESSIVE MEDICINE. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences, edited by Hobart Amory Hare, M.D., assisted by H. R. M. Landis, M.D. Vol. III. Sept., 1909. Lea & Febiger, Philadelphia and New York, 1909. The contents of this volume are: Diseases of the thorax and its viscera, including the heart, lungs and blood vessels, by W. Ewart; dermatology and syphilis, by Wm. S. Gottheil; obstetrics, by Edw. P. Davis, and diseases of the nervous system by Wm. G. Spiller.

As practical as ever, and as full of meat, we welcome this useful quarterly to our desk. All the articles are excellent, but we would especially commend the section by Dr. Ewart, where the progress for the year is put most concisely. There is nothing else like Progressive Medicine in the English language.

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INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, surgery, medicine, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene and other topics of interest to students and practitioners by leading members of the medical profession throughout the world. Edited by W. T. Longcope, M.D., Philadelphia. Vol. III., nineteenth series, 1909. Philadelphia and London: J. B. Lippincott Company. 1909.

This collection of masterly articles improves each year, and this particular volume is, we think, exceptionally good. Written clearly and concisely, they are always helpful and interesting. Nearly every number contains an article, not entirely scientific and practicable, but on a subject of interest, and, perhaps, of importance to medical men. Such a one appears this time by Dr. Dairner Waterson, on "Mesmer, and Perkins' Tractors," well written and entertaining. We might also mention to commend the selection on "Exophthalmic Goitre," by Dr. Ochsner.

THE CAMPAIGN AGAINST MICROBES. By Etienne Burnet, M.D., of the Pasteur Institute, head of the Vaccination Service of the City of Paris. Translated from the French by E. E. Ansten, F.Z.S. John Bale, Sons & Danillsson, Oxford House, London, W. 1909.

In a semi-popular way, the author has clearly told practically all we know about the fight against infectious diseases. A long chapter is devoted to cancer, with a capital summary of our present knowledge to date. Tuberculosis is also taken up very thoroughly. We can heartily recommend this monograph to anyone desiring to study the subject by means of a summary.

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IMMUNITY AND SPECIFIC THERAPY. By W. Deste Emery, M.D., B.S.C., Lond. Clinical pathologist to King's College Hospital, and pathologist to Children's Hospital, Paddington Green. With illustrations. London. H. K. Lewis, 136 Gower Street, W.C. 1909.

When every journal has articles which pre-suppose the knowledge of vaccines, it behooves the up-to-date practitioner to keep posted. These 400 pages have all the information he desires, besides having quite sufficient to teach him the technique should he desire to become proficient in that branch of the science. This work is original and not a translation, and so does not suffer for a lack of clearness.

## Selections.

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**Some Notes on Puerperal Infection.\*** By KENNEDY C. McILWRAITH, M.B., Toronto.

Anyone who speaks or writes on the subject of puerperal infection finds himself at once confronted with the necessity for defining his terms. Without entering into the merits of the classifications in use, permit me to lay before you one which seems to me to possess some clinical merits.

There may be separated, then,

1. A group of cases in which there is more or less fever and other constitutional disturbance, accompanied by foul-smelling lochia. The germ is a saprophytic organism, and the whole affair clears up when the dead tissue upon which it thrives is removed. I propose to speak of this as *saprophytic toxemia*.

2. A group of cases in which the symptoms are often, but by no means always, much more severe. There is not, unless the infection be a mixed one, any putrid odor to the lochia. The germ is found to be one of the pyogenic organisms, *e.g.*, streptococcus or staphylococcus, but there is no evidence that it has penetrated beyond the original site of infection. This covers septic infection of the endometrium and wounds of the genital tract. I shall call this *septic toxemia*.

3. In the third group I should place those cases in which there is obvious germ invasion of the maternal organism. Here we have parametritis, peritonitis, pelvic abscess, phlebitis in veins extending from the uterus, etc. This I shall call *septic invasion*.

4. Lastly come the cases in which a pyogenic organism can be recovered from the blood during life, or is found to be growing in some secondary site, which it must necessarily have reached by the blood stream. This covers septic endocarditis or pericarditis, pyemia, lung invasion, etc. These cases are, of course, but instances of further invasion, yet the symptoms are so much more severe and the prognosis so much graver, that one seems warranted in placing them in a separate class under the name of *bacteriemia*.

Take we now the first two classes mentioned, saprophytic toxemia and septic toxemia. An overwhelming majority of all cases of puerperal infection commence in one or other of these ways. After a somewhat extended observation, I can say that I

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\*Read at Ontario Medical Association, June, 1909.