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VISIBLE CONTRACTILE TUMOUR OF THE PYLORUS FOLLOWING ULCER OF THE STOMACH.

By WILLIAM OSLER, M.D., LL.D., F.R.C.P.,
Professor of Medicine, Johns Hopkins University, Baltimore.

In stricture of the orifice one can not infrequently feel the contractions in the enormously hypertrophied pyloric region of the stomach. In such cases a wave of peristalsis may be felt, during which the anterior wall of the organ hardens, and then, as the wave approaches the pylorus, a firm, hard mass may be grasped, which gradually relaxes, sometimes with a gurgling of gas. In very thin patients with much dilatation of the stomach the peristalsis is readily to be seen and the pyloric tumour may also become visible. In the following case the tumour at the pylorus was remarkably distinct and as it hardened in contraction lifted the skin in the epigastric region, so that a prominent mass could be seen even at a distance. The large size of the tumour suggested the possibility of carcinoma, but the history, and the evident muscular character of the mass, made me feel sure that it was chiefly due to the hypertrophied muscularis.

The subsequent history of the case, too, is of interest. Successful gastro-enterostomy was performed by Dr. Bressler, and three weeks subsequently the Murphy button which had been used perforated the colon, causing fatal peritonitis.

Attacks of gastralgia—Hæmatemesis—Prominent tumour at pylorus, which relaxes and contracts and appears and disappears beneath the skin—Dilatation of the stomach—Gastro-enterostomy; perforation of the colon by the Murphy button.

B. S., aged 28, admitted to the Johns Hopkins Hospital December 1st, 1893, complaining of pains in the stomach. His family history is good.

He has been healthy, with the exception of attacks of dyspepsia He uses alcohol in moderation.

In May, 1892, after an indiscretion in diet, he had cramp-like pains in the left side of the abdomen. The attack did not last very long, but the pains recurred in a few days and continued for about a month at varying intervals. They had no relation to meals, and although he was often nauseated, he only occasionally vomited. He was confined to bed in this illness and lost considerably in weight. From his description it was evident that the pain was of very great severity. After getting up he felt fairly well, except for an occasional dull, aching pain in the abdomen. He kept at work and was very well all through the summer and autumn.

In December, 1892, he again began to have attacks of pain, cramp-like in character and of great severity, coming on as a rule three or four hours after meals and lasting for an hour or two. Throughout the winter of 1892–93 he was in the house and in bed a great part of the time, not able to work. Towards the spring he vomited at intervals large quantities of food, a quart at a time. In May he vomited blood in large amounts. He said it looked like finely minced liver; for several days afterwards the stools were dark and tarry. After this he got quite well, the appetite returned, he gained in weight, and went back to work. Towards the latter part of the summer he noticed a lump in the left side of the abdomen, which has increased in size. A week ago the patient had a return of the severe cramp-like spasms, and he has since vomited blood four times, not, however, in very large amounts.

On admission the patient looked a little emaciated, but the lips and mucous membranes were of fairly good colour; no fever; weight 128 pounds. Examination of the thoracic organs is negative. The abdomen looks natural; the left epigastric region is perhaps a little fuller than the right. The stomach occupies a small area almost completely covered by the ribs. It does not extend lower than the seventh space on the left side. On deep inspiration an elongated mass is felt to descend from beneath the costal margin. After dilatation with bicarbonate of soda and tartaric acid the left epigastric region becomes much fuller. The mass is now to the right of the middle line, feels firm and hard, and gas can be felt bubbling through it. The area of stomach tympany is greatly increased, extending almost to the umbilicus and passes the median line. Above it extends nearly to the nipple. On inspection waves of contraction are seen to pass from left to right, and there is a distinct hour-glass contraction. Liver and spleen are not enlarged. At 9.45 a.m. the patient's stomach was emptied and washed, and the milk he had taken at 7 a.m. came out

curdled, and but little diminished in amount. At 12.30 the patient took 250 cc. of clear broth, from 50 to 100 grammes of meat cut small, about the same amount of bread and 250 cc. of water. At 5.30 p.m. about 250 cc. of fluid mucus with finely divided food, yellowish brown in colour and with a rancid odour, were removed. This reacted with phloroglucin-vanillin for HCl, and with Uffleman's test for lactic acid. Peptones were present; 10 cc. were neutralized by 13.5 cc. of deci-normal sodium hydrate solution, and 10 cc. of the juice shaken thoroughly with ether were neutralized by 10.2 cc. of deci-normal sodium hydrate.

The patient was ordered five grains of bicarbonate of soda every two hours in milk. He improved rapidly, gained in weight, took small quantities of food at short intervals, and seemed to be doing well. The test meals always gave a marked increase in the total acidity.

Special attention was directed to the condition of the tumour. It was extremely variable in position, depending entirely upon the degree of distension of the stomach. Shortly after admission it was noticed that the tumour mass was visible beneath the skin, appearing and disappearing. On watching the epigastric region an elevation of the skin took place, usually midway between the navel and the ensiform cartilage, and a definite tumour projected, which could be seen plainly at some distance away. After remaining for from half a minute to a minute it gradually disappeared. On palpation, when visible, there is to be felt an extremely firm, hard, somewhat sausage-shaped mass, which, as it disappears, relaxes and gets soft. There is no visible peristalsis, except when the stomach is inflated.

The patient remained in the hospital throughout December, gained somewhat in weight, and took his food well. He was discharged January 7th, 1894.

On January 15th he was re-admitted, complaining of a severe burning pain in the epigastrium, only relieved by eating. While at home he took from five to ten grains of bicarbonate of soda every two hours. Shortly after admission I made the following note: "The tumour mass in the abdomen appears and disappears as formerly noted. It occupies a position to the left of the median line. The variations in it are very striking. As it contracts and becomes hard it lifts the skin and can be then plainly seen. As the contraction relaxes it disappears, often with a sizzling sound, which can be heard, and then becomes much softer to the touch. But even in this state the tubular induration can be felt. There are now, without inflation, slight waves of peristalsis seen to the left of the tumour mass below the costal margin."

January 26th. After having had no food since 10 p.m., the tube was passed at 8 a.m, and 266 cc. of a yellowish brown fluid of the consistency of thin gruel were withdrawn ; odor rancid. It reacted strongly to litmus paper, and the phloroglucin-vanillin for acid ; no reaction for the lactic acid test. The total acidity was neutralised by 6.5 cc. deci-normal sodium hydrate solution. During the latter part of January the patient did not do so well. There was evidently more dilatation of the stomach, and the waves of peristalsis were plainly seen without artificial inflation. The pyloric tumour was no longer visible, and was felt much further to the right, midway between the navel and the costal border. From three to five hours after the taking of food there was usually found about a litre of yellowish-brown, rancid, frothy fluid.

On February 15th the following note was made : " This morning the outlines of the stomach are very distinct, and the peristalsis active, the pyloric outlines reaching nearly to the right mammillary line. The mass at the pylorus is not nearly so distinct, and is no longer to be felt near the middle line, but can be made out in the right parasternal line, evidently covered by the distended pyloric portion of the stomach. Palpation increases the peristalsis."

On the 26th of February the patient vomited 200 cc. of bright blood. The peristalsis was very active. The greater curvature of the stomach extends two fingers breadth below the level of the navel. The tumour mass to-day is far over in the right hypogastrium. The patient was ordered enemata of peptonized milk and egg, and given only albumen water by the mouth, with bicarbonate of soda every two hours.

28th. The stomach is much reduced ; the pyloric tumour is in the median line ; there is no peristalsis.

March 2nd. The patient has had no more vomiting, and is much better. The abdomen looks natural ; there is no peristalsis. The pyloric tumour is to-day just above and to the right of the umbilicus. The contraction and relaxation are apparent to-day.

The patient during this attack has lost in weight. Thus he weighed 132 pounds on the 13th ; he now only weighs 123 pounds.

March 5th. Patient insists on going home ; he has been better for the past few days. The dilatation of the stomach has very much lessened. The pyloric tumour is situated just below the ensiform cartilage. No peristalsis is seen. The stomach bulges just beneath the left costal margin. The tumour mass is not nearly so variable and almost constantly hard and firm.

Remarks—This case presented many points of interest, and was

shown repeatedly in the ward classes. The age of the patient, the history of dyspepsia, the gastralgic attacks, the vomiting of large quantities of blood, and the persistent hyperacidity of the gastric juice, pointed unmistakably to ulcer. The tumour mass was the feature of special comment. The most remarkable phenomon was its phantom character. It would lift the skin in the middle line, between the navel and the ensiform cartilage, appearing as a definite tumour transversely placed, and was then to the touch firm and hard. After lasting for from half a minute to a minute it would gradually disappear, with sometimes an audible sizzling sound; on palpation the tumour mass became very much softer, but even when relaxed it was evident as a somewhat sausage-shaped, tubular body, which could be rolled beneath the fingers. The only rational explanation seemed to be that in consequence of the ulcer there was much cicatricial puckering, with narrowing of the pyloric orifice, and consecutive hypertrophy of the pyloric zone. The phantom character of the tumour could be alone explained on the supposition of an alternate contraction and relaxation of the hypertrophied muscular tissues about the pylorus; and with this the evidence obtained on palpation was fully in accord, since when the tumour was visible beneath the skin, it was excessively firm and hard. Relaxation took place under the hand, and with a marked change in the consistency. The variations in position and size of the tumour, with the increase in the dilatation, is often noticed in pyloric masses of this character. The patient was urged to have an operation, but would not consent.

January 20th, 1895. Since the above remarks were written, I ascertained that this patient, during the summer of 1894, came under the care of Dr. Bressler, who performed successfully gastro-enterostomy, using Murphy's button. At the end of the third week, after convalescence was established, general peritonitis developed, of which he died.

Dr. Bressler very kindly sent the specimen to me for examination and description.

The specimen consists of stomach, except cardia, with the coil of intestine removed *en masse*. Attached to the greater curvature of the stomach, about 6 cm. from pylorus, is a portion of the small intestine (jejunum). The line of attachment is shown in front; narrow, clean, and without adhesions. The artificial orifice between intestine and stomach admits the index finger. The transverse colon passes directly behind the attachment of the stomach and intestine. At the splenic flexure Murphy's button has lodged, and has caused a perforation 2 by 1.2 cm. The pyloric region of the stomach is enlarged, the transverse

colon and omentum adherent, and there is considerable thickening of peritoneal tissues about it. When the duodenum is opened, the thickened lips of the pylorus can be seen, and a circular orifice about 5 mm. in diameter. From the stomach, the little finger cannot be inserted into the ring. There is a narrow channel through which a lead pencil could be passed. When laid open, the thickened walls seem to be made up of a greyish connective tissue, and enormous thickening of the muscularis. The wall measures in one place 14 mm. The mucous membrane corresponding to the thickened portion is in places puckered, looks thin, and at one point, corresponding to the anterior wall, and about 3 cm. from the duodenal orifice, there is an area 15 by 10 mm., which looks like the floor of a healing ulcer. The whole muscular coat of stomach is greatly hypertrophied.

A portion of the pylorus was cut out from the peritoneum to the floor of the ulcer, and I am indebted to Dr. Blumer for sections. There was nowhere any trace of carcinoma. Almost the entire mass was made up of enormously hypertrophied muscularis. Near the floor of the ulcer a large artery was cut across, which showed a thickened muscularis and great proliferation of the sub-endothelial layer.

ANEURISM OF LOWER END OF THE THORACIC AORTA*

By J. G. Adami, M.A., M.D.,

Professor of Pathology, McGill University, Montreal, and Pathologist to the Royal Victoria Hospital.

The specimen exhibited was a sacculated aneurism of large size developed from the posterior wall of the thoracic aorta and extending behind the main aortic trunk, both upwards into the thoracic cavity and—expanding the aortic opening of the diaphragm—downwards into the abdominal area.

The aneurismal sac lay on both sides of the vertebral column; it extended upwards as far as the lower part of the body of the 8th dorsal vertebra, and downwards as far as the middle of the 1st lumbar vertebra. Its total length was 17 cm. (almost 7 inches), its width in the unexpanded condition 11 cm. The opening into it from the aorta extended from the lower end of the body of the 10th dorsal to the intervertebral disc between the 11th and 12th dorsal. Thus while the sac extended into both thorax and abdomen, this aneurism was definitely thoracic in origin, for the abdominal aorta only begins opposite the body of the 12th dorsal.

The aneurism had caused extensive erosion of the body of the 10th, more on the right side than on the left, less extensive erosion of the 9th and 11th vertebræ. The sac on removal contained about 200 ccm. of dark fluid blood which, on the right side, passed into firmer, more fibrinous clot. Above and towards the left the wall became much thinned with the formation of slight secondary sacs.

Incidentally it may be remarked that the aorta in this case presented two other aneurismal dilatations, a small sacculated, funnel-shaped aneurism 12 mm. long by 5 mm. in breadth and 10 mm. deep, situated within the bend at the junction of the transverse with the descending portion of the arch. This evidently represented a dilatation of the aortic end of the Ductus Botalli. While 5 cm. above the bifurcation, the aorta expanded into a small diffuse aneurism, the greatest circumference of which was 8.25 c.m.

With all this tendency for giving way of the aortic walls, it was to be noticed that the athermatous change in the interior passed nowhere beyond the fatty stage.

The specimen as such was interesting, for it is more usual to obtain aneurism below rather than above the diaphragm in this region of the aorta. Nevertheless while infrequent, the condition

* Read before the Montreal Medico-Chirurgical Society, May 17th, 1895.

could not be described as rare, and he brought the specimen forward rather from its clinical history than from its value as a pathological specimen. For the notes upon the case he was indebted to Dr. Evans and Dr. A. G. Nicolls.

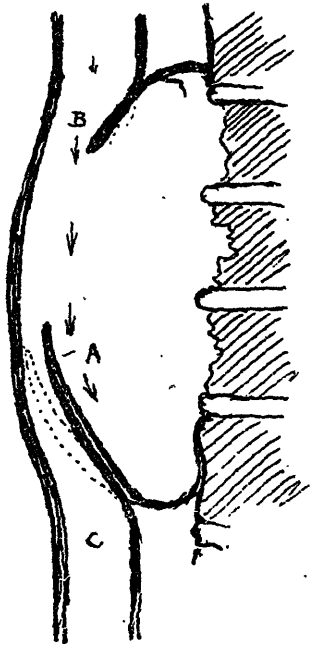
The subject from whom the specimen was obtained, was a plate layer on the C.P.R. aged 32 years; the nature of whose work required much lifting of heavy weights and active muscular exertion. He was further addicted to excessive use of liquor, and what is of more importance, he contracted syphilis five years ago, and passed through a secondary stage of the disease, his throat especially troubling him.

About a year and a half ago he began to be troubled with vomiting, most marked in the morning. Eight months ago he began to feel very weak, and found that on stooping down he had some difficulty in getting up again; with this was loss of appetite and pain in the right side in the region of the 10th and 11th ribs. In February, about three months later, the pain became so intense that he could not rest. The bowels were usually constipated. Rapid emaciation now set in and the patient presented an anæmic appearance, not unlike the cachexia of malignant disease. Within a few weeks patient stated that he had lost over thirty pounds in weight.

The cachexia, together with increased liver dulness and the pain in the right side, led to a diagnosis of possible malignant disease of the liver, and his medical attendant sent him to Dr. Girdwood, as consultant to the C.P.R. On April 30th, as he was walking up from the station to University street, he fell down and found himself unable to rise. He was conveyed immediately to the Royal Victoria Hospital.

There on admission he exhibited complete loss of power, with complete anæsthesia in the lower extremities. But in three hours sensation and power of movement returned, and the knee-jerks were found increased. Pulse 110, weak, thready and at times scarce perceptible. Heart beats in pairs. Apex beat just inside nipple line. Breath heavy and cadaverous. Nothing noticeably wrong in the respiratory system. Bowels very loose, with mucous and occasional streaks of blood. Before the opportunity presented itself for full study of this case a grave change ensued. Early the next morning patient had a syncopal attack, he became very livid, pulse absent and respiration very laboured. He rallied under stimulants. Throughout the day he was extremely weak. In the evening inhalations of oxygen were given and the pulse improved—but three-quarters of an hour later he complained of sudden pain, became pulseless and died within three minutes.

The autopsy showed that death had been caused by rupture of the aneurism into the left pleural cavity. This was filled with blood and the lung was collapsed. Rupture had occurred at the apex of one of the small secondary sacculations. Denser, more firmly coagulated blood was found in the posterior mediastinum, advancing up to the root of the left lung, and rendering it not improbable that the syncopal attack of the morning of death was due to a preliminary oozing in this neighbourhood. The shape of the aneurism appeared to explain the sudden anæsthesia and paralysis of the day preceding death. An examination of the specimen shows that the aorta was greatly flattened, both above and below the aneurismal orifice, by the presence of the sac behind it pressing it outwards. This flattening was greatest below, both from the fact that the sac there extended for a longer distance down behind the intact vessel and also from the mere weight of the sac of blood. If, then, in ascending from the station to University street the exertion led to increased aortic blood pressure, it is easy to imagine that the moment arrived when the blood current or, more correctly, wave of blood pressure expanding



the aorta at B diffused itself through the sac to a greater extent than it continued in the direct line down the abdominal aorta, thus causing the edge A to be pressed over to the anterior wall, occluding the abdominal aorta. Such occlusions affect the circulation of the whole

lower half of the body. The arterial stasis thus induced would be amply sufficient to explain the sudden transient paralysis and anæsthesia observed in this case, as also the stoppage of urinary secretion that followed, and the diarrhœa, accompanied as it was by much mucus and some blood.

It is interesting to note that in this case there had evidently been long continued impairment of the abdominal circulation. There was the large spleen of venous congestion, together with large kidneys with white cortex and congested vessels, in addition to the clinical history of gastric disturbance. On examining the specimen it is seen that the cœliac axis, the renal arteries and the superior mesenteric were given off from the region of the aorta, flattened by the protrusion outwards of the lower part of the aneurismal sac. The liver, probably given its double vascular supply, did not show morbid change to the same extent. In the other organs impairment of the arterial supply and lowering of the arterial pressure would lead to the passive congestion and its results here noted.

ON THE MODIFICATIONS NECESSARY IN COW'S MILK TO RENDER IT SUITABLE AS AN INFANT'S FOOD DURING THE HOT SEASON. *

By A. D. Blackader, B.A., M.D., M.R.C.S.

Professor of Pharmacology and Therapeutics, Lecturer on Diseases of Children, McGill University.

Apologies are necessary in presenting such a desultory paper before the members of this Society. My object in suggesting the subject for discussion this evening was not that I personally could throw any new light on this much discussed question, but rather the hope that after comparison of views we might possibly unite our influence, and support that scheme which best promises to supply to our patients a pure, sterile milk, and that now as the hot season is commencing we may, as the result of discussion, all gain clearer and more definite views as to what modifications are necessary in cow's milk, as obtainable in the city, to render it a suitable food for the many infants who may have to depend upon it as their chief or only source of nourishment.

Two important considerations, it seems to me, should guide us in the employment of cow's milk. The first is that we must have a practically sterile milk, lest we introduce poison-working bacteria and their deadly products into the alimentary canal of the infant. The second is that even sterile milk to be a proper food must show itself easily digestible in the infant's stomach; and in the great majority of cases it requires to be variously modified to suit the digestive capacity of each individual infant.

At the outset the milk must be pure and, as far as possible, uncontaminated. In a report on the milk supply of London by a special analytical and biological commission (*British Medical Journal*, June 6, 1895) the sophistications met with in milk are briefly stated as follows:

1. The addition of water—both dishonest and dangerous.
2. The addition of substances intended to prevent decomposition—not perhaps of themselves dangerously injurious in the quantities added, but facilitating the sale of stale milk.
3. The addition of substances intended to give colour—generally not injurious.
4. The abstraction of cream or the dilution of a rich milk with

* Read before the Medico-Chirurgical Society of Montreal, June 17, 1895.

milk from which cream has been abstracted—dishonest and in many instances dangerous.

5. Pollution of milk—always dangerous. This pollution may occur: (*a*) From hands of milkers; (*b*) by discharges from the genitals and fœcal and other matters soiling the udders and teats, and thus gaining access to the milk; (*c*) from the use of dirty utensils, either at the dairy, or at the retail establishment; (*d*) from the washing of the utensils with dirty or infected water, or from the exposure of the milk or utensils to insanitary emanations either at the dairy or the retail shop; (*e*) from the dirty hands or clothes of the milkmen in the streets, and from their careless exposure of the milk during distribution.

The commission adds: "One is hardly surprised to hear it authoritatively stated that unsophisticated milk is practically unknown in the London supply." Can we speak any more encouragingly of our Montreal supply? I fear not.

In an article in the Report of the Dairy Commissioners of the State of New Jersey for the year 1894 Professor Leeds refers to the same adulteration being met with in the milk sold in that State. He says much partially skimmed milk is sold in the State as whole milk, and this will continue to be the case until the percentage of fat is regulated by law and fixed at a minimum of 3.5 per cent. He refers to dairies "infamous alike in their cruelty to animals, in their brutalizing influences upon men, and in their disease-spreading effects upon infants," and emphasizes the great benefit of inspection to dairy farms wherever it is carried on with honest effort, and of a system of practical instruction in the handling and preservation of milk and its products, such as is carried on in the national schools in France.

In Montreal we have neither inspection nor instruction. Much of the milk supplied to us is brought into the city from the country consigned to dealers, and is at least 24 hours, often 36 or 48 hours old before it reaches the consumer. Judging by my own experience, but a mere fraction of the milk sold in Montreal can be relied upon as being pure and unsophisticated. Lack of knowledge and lack of honesty sadly interfere with the purity of our supply, and it must be remembered that contaminated or adulterated milk, even if sterilized, will by no means yield good results in infant feeding; we may destroy the microbes themselves, but we do not affect their poisonous products by the process. An ideal milk obtained from cows cleanly kept and fed on a good farm, milked under careful precautions and brought into the city with a minimum of handling and shaking, would go a long way to lessen infant sickness and mortality in our midst. It is

with much pleasure, therefore, that we learn that a gentleman trained in Pasteur's Institute, and who has a farm in the Townships, is making arrangements for placing on the market a pasteurized milk that is said to fulfil the above conditions. One condition, however, seems to me necessary in connection with it. Notwithstanding the fact that it is pasteurized, as physicians we must also insist on its being fresh, for it has been found that milk well sterilized will after a certain interval of time undergo a form of decomposition with an alkaline reaction. Although this form of fermentation has not yet been sufficiently investigated for us to pass an absolute opinion upon the deleterious effects of its products, yet that such a form of fermentation is liable to take place should condemn the storage of sterilized milk and its use as a food for infants after any prolonged period has elapsed.

In Boston, owing to the able inspiration of Dr. Rotch, the Gordon Walker Laboratory has been started, where absolutely sterile milk of definite and known composition can be obtained. More than that, it is arranged that in this laboratory, milk on the prescription of the physician, of any desired composition, may be supplied in bottles containing the exact amount for each feeding. Thus milk is so altered that it shall contain more or less of the albuminoids, more or less of the fats, or of the sugars, as may render it suitable for the digestive powers of the infant.

In New York, where the difficulties connected with a good milk supply may be regarded as even greater than our own, several laboratories have been started by physicians and philanthropists to supply during the hot season sterile milk to the poor. Dr. Koplik, who has for many years interested himself in this question, writes as follows (*New York Medical Journal*, February 4, 1893): "The physician who simply prescribes for his little patient—when the infant must depend very much upon the good intentions of its parents, schooled neither in the art of cleanliness nor in that of cooking, even of the most primitive nature—scarcely performs more than half the work expected of him. The conditions present among the immense infant *clientèle* of the poor are an anxious mother worn out by unsuccessful attempts to make amends for her mistakes and those of others, and an unscrupulous public caterer, who either through the avenues of chemical science, or the less noble one of dairy manipulation, looks upon these little infants as a just object of experiment or gain. We wash out an infant's stomach and bring it, after twenty-four or forty-eight hours, through the administration of albumins, to a condition of tolerance of food, only to have it begin again the attempt to

digest unwholesome milk, or to assimilate some chemical compound offered as food." Again he says, "The object of the writer in establishing a laboratory in connection with the department for diseases of children has been to give the infants a wholsome food basis—that is, a pure milk. We can with a well equipped laboratory not only ensure absolute cleanliness in the milk, but we can limit and regulate the daily quantity and the exact diluent and be certain that success will follow in a good proportion of cases."

In this laboratory the milk is obtained in large cans from a reliable State dairy; it is sterilized at a temperature between 85° and 90° Celsius, and dispensed to the patients in the ordinary green glass, three and six ounce prescription bottles, only half or two-thirds filled, and directions are given at the time as to how much diluent is to be added. These bottles are returned the following day and new ones issued, so that the supply for every day is absolutely under the physician's control, provided the mother follows the directions.

The temperature employed is distinctly higher than the Pasteur limits, but it was found that a single exposure to temperature below 85°C. would not retain milk, as they obtain it, in a sterile condition for twenty-four hours when stored without ice; and after many experiments, the temperature mentioned above was found to give most satisfaction. Milk thus prepared, although possibly slightly changed differs but little in appearance or taste from raw milk, and it may be supposed that the changes noted by Dr. Leeds in milk sterilized at 100°C. are practically absent.*

It is very desirable that a laboratory similar either to those in New York or to the Gordon Walker laboratory in Boston, should be started in Montreal, for only in this way can we reach the children of the poor, whose need for such a food is even greater than that of the children of the well-to-do. With the latter we can, of course, make an effort to have the milk sterilized at home, and with our present knowledge it would appear to me most blameworthy for any physician to attempt infant feeding in the city during the summer months with unsterilized milk, if it was at all practicable to have it sterilized. Even among the poorer class, when we meet with a careful, intelligent mother, we can often devise some simple inexpen-

* 1. The starch liquefying ferment which exists in cow's milk in minute quantities is destroyed.
2. A portion of the lactalbumin is coagulated.
3. The casein is less readily coagulated by rennet, and yields slowly and imperfectly to the action of pepsin and pancreatin.
4. The fat globules are injuriously affected by the heat. The fat is freed to some extent, and, after standing, small lumps of butter fat are observed on the surface of the milk, while the portion not freed has a decidedly lessened tendency to coalesce.
5. The milk sugar is distinctly altered as shown by a lessened dextro-rotatory power.

sive method by which all the milk when it arrives in the morning shall either be exposed in bottles to a temperature of about 85° or 90°C., or shall be simply scalded, which must ensure at least temporary sterilization.

With regard to the second point, the modification of cow's milk, to render it digestible by infants in hot weather, we should bear in mind the thought so well emphasized by Dr. Rotch, of Harvard University, that just as in the adult the digestive capabilities of different individuals differ as regards the various articles of food, some requiring less meat, others more, some using less starch or more sugar, so in the infant the digestive capacity for the various ingredients of the milk varies. This fact is exemplified in the analyses made of different breast milks on which the several infants nursing were individually thriving, in which it will be noted that both the fat and the albuminoids vary within wide limits. Clinically, we also know that every child will not thrive at every breast.

Especial attention must be paid to these digestive idiosyncrasies in hot weather, when even adults feel the depressing influence of extreme heat and the vitality of infants, with their susceptible nerve centres, must be even more certainly affected. For this reason, I am in the habit of reducing the albuminoids in cow's milk in hot weather to the lowest point compatible with nutrition. Clinically it has long been recognized that there is an essential difference between the albuminoids in human and cow's milk. Chemists have for some time told us that the albuminoids of human milk are in a distinctly more soluble form, and have a more alkaline reaction, and more lately they have recognized the presence of nucleins and paranucleins soluble in the one, and comparatively insoluble in the other; while practically, I think we find that it is the albumuminoids of the cow's milk that give us most trouble in the various forms of indigestion that precede many of the infantile diarrhœas. For this reason, whenever I meet with indications of imperfect digestion of the proteids, I think it better to at once lower the proportion of the albuminoids till the indications cease, even although I sometimes bring their percentage down to less than one per cent.

Of more importance, I think, in the nutrition of infants even than the albuminoids are the fats. Chemists, I understand, now recognize the fact that the average cow's milk contains a slightly lower proportion of fat than does human milk. Hence, when we come to dilute the milk, the percentage becomes much too low. I formerly attempted to increase the amount by the addition of cream obtained in the ordinary way, but generally found the result a failure, owing, I think, to the fact

that cream so collected is always old and must contain a very large proportion of the bacteria that may enter the milk during the process of standing. Centrifugal separators have the disadvantage of more or less churning the milk, but the cream thus obtained has given good results. In families a simple way is the plan recommended by Dr. Rotch of allowing the milk to stand in a tall jar in a cool place for four or five hours, and withdrawing the upper half, or better still, only the upper third. In this way we obtain a milk containing nearly double the percentage of cream, and a slightly lowered percentage of the albuminoids for dilution.*

To obtain the requisite proportion of the carbo-hydrates, we are all agreed, I think, that milk sugar, which can now be obtained, both pure and at a moderate price, has many advantages over ordinary cane sugar.

In reference to the best diluent for the milk, I am still of the opinion that a weak gruel prepared from some cereal is of advantage apparently by mechanically attenuating the clot. This is a question which has been much disputed. All the older teachers recommended the plan, but a few years ago Dr. Rotch, after experiments, stated that practically the size of the curd depended simply on the dilution of the albuminoids, and not upon the particular menstruum employed. Judging from the results of experiments by Eiloart (*N. Y. Med. Journal*, Sept. 16, 1893,) the problem is not so simple as it appears. Eiloart after testing the various mixtures in healthy infants' stomachs, withdrawing samples by means of the stomach tube after a short interval, found that the mixture of barley water and milk was in a distinctly finer curd than the mixture of milk and water simply. Cereal foods, even in such small quantities as may be present in a gruel, are obviously unsuitable for very young infants and, if given, are a frequent source of colic and indigestion.

* In order to learn exactly what difference the simple process of standing for three hours would make, the two parts of the milk were analyzed with the following results :

Lower half, mean of three samples	Fat 3·03	Total solids 12·36	Solids not fat 9·33
Upper half, " " "	Fat 4·90	Total solids 14·01	Solids not fat 9·11

—*Studies in Infant Feeding, H. D. Chapin, N. Y. Med. Jour., Sept.* 16, 1893.

A CASE OF AORTIC INCOMPETENCY AND STENOSIS.*

By J. Bradford McConnell, M.D.

Associate Professor of Medicine University of Bishop's College.

J. H., aged 15 years, sought advice on the 8th of August, 1894 complaining of loss of appetite, weakness, and pain in the region of the stomach. An alkaline stomachic was prescribed, and four days afterwards he was seen again. Now, in addition, he complained of constant nausea and frequent vomiting. For two or three months previously he had complained of not feeling well. He was attending school but had little inclination for study, had occasional headache and was weak and languid; he felt a little better after leaving school for a week and engaging in light work about the garden; but the malaise again returned and he felt inclined to lie down during a part of the day. Two weeks previous to my seeing him he complained of pain in his stomach, which, with nausea and more or less vomiting, has continued up to the present, his symptoms being worse towards evening.

He has had very little previous illness; ten years ago had measles; I attended him three weeks afterwards for a light attack of appendicitis, and the two following springs he had similar attacks; fever, pain in right iliac region, etc., recovering in a few days and getting up in about two weeks. He has not had any other illness, but once after running had an attack of dyspnœa and said he had a faint feeling and oppression in the heart region; bowels always regular.

He is tall and slender, somewhat emaciated, dull; skin pale and of a light icteroid hue. Pulse 128, respiration 32, temperature 99⅕°; tongue thickly coated to the edges; complete anorexia; no headache, no œdema in any part of the body; breathing somewhat laboured and every few minutes, takes a deep, full and long inspiration. Coughed a few times during the previous night. There is marked tenderness over the region of the stomach; hot applications and poultices of linseed meal and mustard, with parvules of calomel gr. $\frac{1}{20}$, arrested the vomiting. Bowels had been moving once or twice daily. Stool this morning seem solid and greenish black in colour.

Examination.—Lungs, percussion normal throughout. Breath sounds broncho-vesicular, the normal tubular breathing in the interscapular regions being exaggerated; some fine crepitation over both bases behind. Areas of spleen and kidney dulness normal.

Liver.—There is slight elevation and fulness in right epigastric

* Read before the Montreal Medico-Chirurgical Society, November 30th, 1894.

region extending three inches below ribs on right nipple line and very tender on pressure, and on percussion there is dulness from fifth rib on right nipple line to a line drawn transversely one inch above umbilicus, dulness extending three inches to left of median line; lower part of abdomen somewhat retracted.

Heart.—There is bulging in the præcardia, area of visible impulse increased more towards base; impulse slow, forcible and heaving; apex beat indistinctly felt three-quarters of an inch to left of the nipple line in sixth interspace; continuous dulness from third rib to one inch above level of umbilicus and half an inch to left of nipple line. Loud systolic murmur heard at the base along the sternum, loudest at aortic cartilage and transmitted along crown of aorta, muffled and distant at the apex; second sound heard only in pulmonary area. A presystolic superficial murmur is heard at the centre of sternum opposite junction of fourth costal cartilage and for an inch around that point, and the same murmur apparently in the axillary line three inches beyond nipple line, but not between. Pulse is small and regular.

August 13.—Respiration 28, pulse 108, temperature 97⅘°. Had restless night, no cough, two motions; still taking the deep inspirations and complains of much cardiac distress and sense of smothering.

August 15.—Condition much the same, but suffers from severe pains in the cardiac region, which shoot into left arm. Pulse 140, respiration 30, temperature 100°. The presystolic murmur cannot be heard to-day.

Death occurred on the 16th from asthenia, without any dropsical symptoms having appeared, only accumulation of blood in the lungs.

Pathological report by J. A. Macphail, M.D.

Autopsy 16th August, 1894; the body of a boy 15 years old, twelve hours dead.

Abstract.—The body was well developed and the adipose tissue moderate in amount; post-mortem rigidity was well marked, the whole posterior surface of the body uniformly dark blue with spots upon the abdomen and flanks, the face faintly livid.

The abdomen was laid open and the liver found to extend to the level of the umbilicus on the right side. The omentum was adherent to it by the space of a square inch, injected and covered with secretion, with the veins distended. The liver was found to weigh 50 oz., the surface smooth and mottled, the capsule freely removable. On section it was pale yellow and slightly granular, firm and cut with considerable resistance. The central part of the lobules were of a

deep red colour, surrounded by a zone of yellow, the two parts being mapped out in contrasting colours.

The spleen was small, and the substance soft, friable, dark in colour.

The left kidney was of average size with thick capsule, freely removable, the surfaces smooth, dull in colour, excepting at anterior surface, where the lower border showed a spot the size of a bean of caseous degeneration. On section the cortex and medulla dark red, the pyramids of a brighter colour and both normal in thickness, though much injected, the tissue as a whole soft and engorged with blood. The other urinary and genital organs were normal. The stomach was moderately distended and contained ten ounces of a dark grumous fluid, the mucous membrane injected and inflamed, without any definite lesion, the veins distended with blood. The intestines presented nothing abnormal except in the region of the cæcum, where the vermiform appendix was found bound down to the bowel by its mesentery, curved in itself with a slight band passing over it, indicating an old inflammatory process.

The diaphragm on the right side reached to the fifth rib and on the left to the fifth interspace. After removing the sternum the lungs were seen crowded to the back of the thorax by the heart. The pleural cavities contained twenty ounces of fluid. The lungs were large and russet-brown on the surface with occasional darker patches, heavy, but crepitant throughout. On section they showed a brownish tinge, which on exposure to the air became bright red. The engorgement was marked and fluid transuded readily; where the bronchioles were cut a frothy liquid poured out.

The pericardium was opened and found to contain three ounces of a transparent dark coloured liquid. The heart was much enlarged and on the left side extended an inch beyond the nipple line and down to the seventh rib. The vessels were ligatured.

The heart weighed with the contained blood twenty-four ounces, and was increased in all directions, elongated and pointed; the right auricle was much dilated and the auriculo-ventricular opening admitted three fingers. The endocardium was opaque, the muscle substance pale, coarse and flabby. The tricuspid valves were intact, but at the insertion pale and fibrous. The walls of the right ventricle were a quarter of an inch in thickness, and contained two ounces of clot. The left ventricle contained two ounces of clot and the walls were an inch thick, the muscle substance red, tough and leathery, the cavity stood patent when cut.

The left auricle resembled the right, the mitral valves showed no

marked change. The principal lesion was in the aortic valves. These structures had entirely disappeared and their place was taken by a strong mass of calcareous infiltration. The aortic orifice would not admit a lead pencil and measured only one-third of an inch in the largest diameter.

This case proved more interesting to me from the fact that an autopsy was held—which is usually difficult to obtain in private practice—and the pathological conditions could be compared with the symptoms and results arrived at by physical examination for correction or confirmation.

We have in this case evidence of a chronic endocarditis occurring in a boy and affecting the aortic valve only, which seems to have been chronic from the beginning, as there is no history of any acute attack, or rather disease with which endocarditis is apt to be associated, such as rheumatism, chorea, scarlatina, pneumonia, &c., nor was there any history of over exertion of any kind, or syphilitic factor, and although the condition must have been present for some years, no symptoms had, until near the end, suggested its presence, until the very large liver failed to perform its functions and the stomach was passively congested, when a marantic condition set in. The left heart failed to remove all the blood from the lungs, the right acted forcibly, compensating the increased resistance. Marked congestion occurred, and death took place before the whole vicious circle of cardiac insufficiency appeared.

The superficial character of the diastolic or rather presystolic murmur heard in the region of the tricuspid valves and its transversion to the anterior axillary region, suggested at one time some obstructive condition or roughening at this point, rather than aortic regurgitation or pericarditis or a mitral obstructive lesion, but the pathologist's post-mortem examination report shows that the slight changes in the tricuspid valve could not give rise to the murmur, and the right ventricle was not dilated nor was the mitral affected. Hence in the lower sternal region, at least, it was a modified aortic diastolic murmur, and the murmur heard over a definite area, left of the apex, may be explained by a relative narrowing at the mitral orifice, which sometimes occurs with dilatation of the left ventricle, while the silent intervening area may be accounted for by the moderate effusion present in the pericardium.

The complete recovery from two attacks of appendicitis was interesting in view of the prevailing opinion in favour of operating in all cases.

ON A CASE OF CONGENITAL DEFECT OF THE DIAPHRAGM WITH COMBINED DIAPHRAGMATIC HERNIA.

By F. Fry, M.D.

Resident Physician Royal Victoria Hospital, Montreal.

(From the Pathological Laboratory of the Royal Victoria Hospital.)

In connection with the diaphragm we have to distinguish between three conditions, namely, (1) One of absolute defect (congenital false hernia) with free passage between thoracic and abdominal cavities; (2) true diaphragmatic hernia in which there is thinning of the diaphragmatic substance, so that the viscera protrude into the thoracic cavity, covered over, however, by the hernial layer formed of the thin diaphragm, and (3) acquired false hernia in which, through rupture of the organ, certain abdominal viscera find their way upwards into the cavity. It may be added here that the reverse condition, that is the passage downwards of any of the thoracic viscera does not occur.

Of these forms the so-called false hernia is much the commoner; thus in Leichtensten's 252 cases, 224 were of a false type. True herniæ are rare. The case about to be described must be classed among those of true hernia, although associated with this condition there was also congenital defect.

Thomas L., aged 57, a cook by occupation, was admitted to the medical wards of the Royal Victoria Hospital, under Dr. Stewart, on July 10th, 1894, complaining of great dyspnœa with extreme swelling of the feet and legs. He had been able to work all day long until a fortnight previous to his admission, when he first noticed swelling of his feet and a paroxysmal shortness of breath. During the next week he continued his work as cook in a military camp, where the work was heavy necessitating his standing incessantly. By the end of this time his dyspnœa prevented him sleeping, nor could he lie down for more than a few minutes at a time. His appetite also completely failed him and he subsisted on raw eggs only. He then left camp and worked at odd jobs, never lying up until his admission to hospital. For five days before admission the orthopnœa was constant.

As a boy he was always healthy and strong, as a cook he was always able to work hard; since a youth he had been given to taking alcohol in great quantities, at times to excess and to intoxication. There was no family history bearing on his case; the

only time he had noticed dyspnœa on exertion was five years ago. He was an extremely stout man of large frame, with broad chest and large flabby muscles.

On admission general cyanosis was very marked; and during the paroxysms of dyspnœa, the face and neck became of a deep purple hue, and the superficial veins engorged and prominent. The pulse was 70, rather small, very irregular and compressible; respiration was 36. It was difficult to examine the condition of the patient's heart on account of the great amount of fat about the pectoral region; there appeared to be enlargement of the right ventricle; dulness extending about half an inch to the right of the median line of the sternum; the impulse could neither be seen nor palpated; the heart sounds were very faint, distant and exceedingly irregular; the heart was beating 110 to the minute, but only 70 beats per minute reached the radial artery. The bases of both lungs posteriorly showed impaired resonance; at the right base a few crepitations were heard; on the left, although the dulness on percussion was more marked than on the right side, no adventitious sounds were heard. This difference was not accounted for during life. The liver dulness was masked by intestinal tympany. The urine was scanty, high-coloured and rich in albumen.

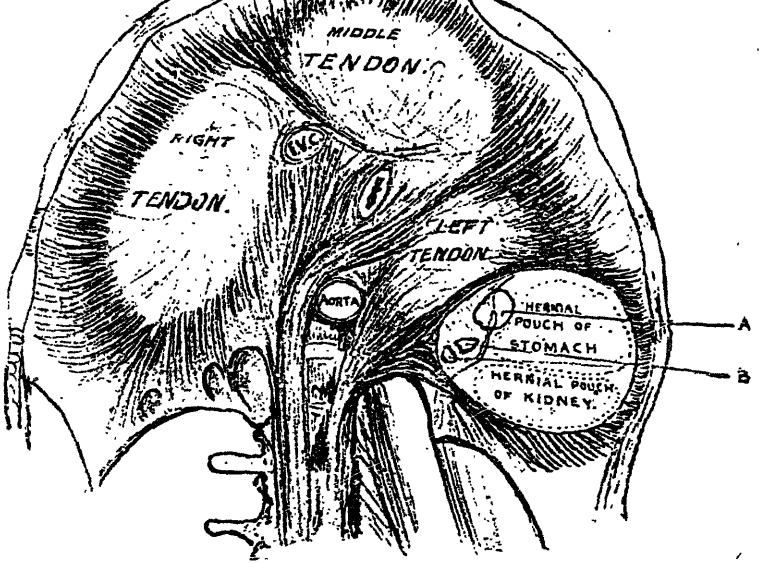
Thirty-six hours after admission the patient died very cyanotic, with the most extreme paroxysms of dyspnœa, with great extending over several hours.

The autopsy, performed two hours after death, showed briefly dilatation of the right auricle, tricuspid incompetence, dilatation and hypertrophy of the ventricles, with fatty degeneration. The condition of the right heart was amply sufficient to account for death. Hydrothorax of both pleural cavities. Both lungs crepitant throughout, with much œdema and some hypostatic congestion at the bases. The liver was relatively small, presenting Liebermeister's grooves; on section it showed a fatty, nutmeg appearance. Spleen not enlarged greatly; the right kidney was the large red kidney of alcoholism; the intestine presented no abnormalities. The other viscera will be mentioned in connection with the diaphragm.

Upon removal of the left lung it was found there projected upwords into the thoracic cavity a large mass of omental tissue, a portion of the stomach and part of the large left kidney. This being the case, the diaphragm was carefully removed in its entirety, with all the organs in connection with the hernia. Previous to its removal the fact that the kidney was so high up led to an examination of the extent of the motility of the organ, and it was found that the

kidney could be moved easily as far upwards as the fourth rib, while there was an equally free motion downwards. On spreading out the diaphragm it was of relatively great size in circumference, and very muscular, save in the hinder portion of the left side. The right and middle tendinous portions were of the usual relative dimensions, the middle being considerably smaller than the right. On the other hand, the left was no more than one-quarter the size of the middle tendinous portion. This made the muscle about the left border of the diaphragm appear unusually extensive. The right crus was readily made out and was stout and prominent, while the left was with difficulty isolated and was comparatively small and thin.

Almost immediately behind and to the left of this left tendinous portion, separated from the edge of the latter by a muscular band 5 m.m. in width, and more prominent, thick, and bulky, than the neighbouring muscular tissue, lay the defective portion of the diaphragm. This may be considered as being composed of two portions, namely a free opening, or more truly openings, extending from the thoracic into the abdominal cavity, and a larger area of thinning of the diaphragmatic tissue. This thinning was so extreme that the wall here was represented purely as a layer of the fused serous coats of the two cavities, with no intervening muscle. This thinned tissue



Diagrammatic representation of diaphragm seen from below, showing position and relative size of hernia. A large and B the small communications between thoracic and abdominal cavities. Over A and B is indicated the commencement of the omental overgrowth.

formed independent coverings over the portion of the stomach protruding as a hernia into the thoracic cavity and over the left kidney. The entire defective area measured 79 x 79 m.m. The gastric pouch or expansion lay, as was natural, in front, the renal behind. The distended diaphragmatic tissue was so thin that it tore easily on manipulation. The true opening was a somewhat triangular aperture, whose greatest diameter was 29 m.m. and whose edges were distinctly smooth, rounded and thickened throughout, there being absolutely no irregularity nor any evidence whatever of recent traumatism. This lay to the inner and anterior border of the defect. From its inner edge there extended a large abundant layer of fatty tissue, similar to that of the omentum, and extending freely into the thoracic cavity. It extended also downwards into the abdominal cavity and was in direct continuation with the large great omentum. It was difficult to follow the connections of this pseudo-omentum, inasmuch as the relations were very much complicated. While the antero-lateral edge was free, posteriorly it became much folded, and appeared to pass imperceptibly into direct continuity with the thinned diaphragmatic tissue. Posteriorly also it seemed to cover over, or indeed, to form the edges of two smaller orifices leading from the thorax to the abdominal cavity behind the stomach.

It is evident from this description that taking into account the age of the patient, the extent of the defect, the absence of symptoms and the anatomy of the parts the case is one of congenital defect of the diaphragm. The extent of the defect and the size of the protruding mass are distinctly unusual. The position also is somewhat out of the common. As a rule congenital defects occur at the junction of the muscular and tendinous portions of the diaphragm. The case is further unusual in the vision that it presents of free communication between the two cavities, together with congenital thinning of the muscular coat of the diaphragm and consequent giving way of the organ.

It might be thought that the orifice was secondary to the thinning, but on the whole I am inclined to regard this opening as due to the fact that there never was in this case complete separation between the abdominal and thoracic cavities. Save on this supposition I do not see how the growth of the omentum or pseudo-omentum is to be explained, starting, as it does, from the very edge of the orifice, in fact as a continuation of that edge. Just as the true large omentum may be regarded as a fold of redundant peritoneal tissue, so here it would seem as though where the serous coat of the thorax passed into the serous coat lining the abdominal cavity there had been a like

redundancy, leading to the development of this large mass of folded serosa containing, as the true omentum is liable to contain, a relatively great amount of fat.

The case is interesting also as affording an example of a condition very rarely recorded in a male, I refer to the condition of the moveable kidney. While in the female this is generally described as being due to looseness of the posterior adhesions of the organ, it is apparently brought about directly or associated with great variations in the intra abdominal pressure. This condition of extreme hernia of the diaphragm in the male might lead and probably did lead to a laxity in the abdominal cavity similar to that which occurs in the female after pregnancy.

Another point to be noticed is the great size and great muscularity of the other portions of the diaphragm. This was evidently of compensatory nature. The case comes under the class of undiagnosed diaphragmatic hernia; the patient had lived for fifty-seven years with such excellent compensation that no symptoms were produced referable to the condition.

A point has been made by more than one observer that this left-sided hernia of the diaphragm is capable of being diagnosed from the fact that the heart is displaced markedly to the right by the protruding abdominal viscera. In this case at the autopsy, as during life, no such displacement was noticeable; the stomach and kidney lay behind rather than to the outer side of the heart.

SOME INTERESTING CONDITIONS ATTENDING POST-NASAL GROWTHS.*

By H. D. Hamilton, B.A., M.D.

Laryngologist to the Montreal Dispensary; Assistant Laryngologist Montreal General Hospital.

In this brief paper it is intended to refer to two cases of post-nasal growths—the term being applied to that hypertrophic enlargement of the lymphatic tissue of the nasopharynx very commonly spoken of as "adenoid vegetations."

In the two cases about to be reported, it will be seen how discredit may fall upon the operation for removal of the overgrowth, if the nasopharynx were treated alone and no attention given to the rest of the respiratory tract.

In the examination of both these cases, the post-nasal overgrowth was at once suspected and easily found, but the nasal condition, when examined by the aid of cocaine, was found to be equally at fault.

Having an opportunity of following up the result of treatment closely, it was decided to remove the obstruction from the throat first in one case and from the nose first in the other. By this means it was found that relief from the symptoms was only partially obtained, in each instance, until both parts had been thoroughly treated.

Had the one patient left town permanently after the nasopharynx had been treated, he would have had good cause to complain of the failure of the operation.

Case I.—A lad of 15 years, always delicate, was brought last September to be relieved of mouth breathing and frequent attacks of dyspnœa, with copious mucous discharge from the nose. Since early childhood he had never breathed freely through the nostrils. Bronchitis, pneumonia or croup has afflicted him every winter, keeping him indoors, during all the cold season. Even when free from an acute illness, he has only been out of bed six hours out of the twenty-four, owing to weakness and shortness of breath. The shortness of breath complained of is asthmatic in character, coming on at night when in bed, and every six weeks or so becoming equally bad day and night for a week or ten days. The boy describes his sensations as those "of having a tight-laced vest about his chest, preventing expansion."

* Read before the Montreal Medico-Chirurgical Society, March 22nd, 1895.

On examination, the tissues lining the nasal passages were found to be in a sodden, relaxed condition. The mucous membrane over the middle or lower turbinals completely filled the breathing space and the middle turbinals had a gelatinous consistence, but were not truly polypoid.

In the nasopharynx the pharyngeal tonsil was so large that attention was given to it at once with the hope of thus improving the condition of the nose. The post-nasal space was accordingly cleared of overgrowth, under full anæsthesia, by the ring knives and post-nasal curettes, and after that a full month passed without any asthmatic symptoms, or other ailment. At the first approach of the old trouble of complete nasal obstruction, the boy returned to report and the nasal overgrowth was straightway attacked with cold wire snares and galvano-cautery. Since this has been cleared, the boy has had no recurrence of short breathing, or bronchitis; he has attended school for the first winter in his life, and has been able to join in out of door sports by day or night.

CASE II.—A lad of 16 years was referred to me for relief from severe frontal headaches, accompanied by obstructed breathing. He had suffered constantly for the past two years, never being free from an attack for a week at a time, winter or summer. The pain lasted four or five hours at a time, and was accompanied by sneezing and copious mucous discharge from the nose.

In this case the nasal trouble alone has, hitherto, been treated. The conditions found on examination were almost identical with those noted in Case I., except that the middle turbinals had actually developed polypi.

The result of partial treatment here is encouraging; for only two very mild attacks of headache have occurred in the six weeks following the work in the nose. The breathing still becomes obstructed at times, and the pharyngeal overgrowth persists.

These two cases, together, in addition to the post-nasal growths, presented nearly all the symptoms of ethmoidal disease as described by Dr. F. H. Bosworth in a paper read last summer at the Washington Congress of American Physicians and Surgeons, hence we might add ethmoidal inflammation to the list of possible results of pharyngeal overgrowth.

Removal of the overgrowth is claimed to be necessary in the above cases, but the writer recognizes the truth of the statement that all such conditions should not be treated in the same way. Where there is the slightest sign of atrophic disease in nose and throat it will be safer to leave the localized overgrowth alone, or the atrophy will be

greatly hastened and finally spread to the whole upper respiratory tract. Often when the obstruction has been successfully removed, the patient's friends do not appreciate the fact for some weeks on account of the relaxed condition of the soft palate consequent upon the stretching necessary during the operation.

The results consequent upon removing enlarged faucial and pharyngeal tonsils, when accompanying such conditions as enuresis or epileptic fits are often rendered unsatisfactory by the length of time allowed to elapse before relief is sought.

THE PREPARATORY AND AFTER TREATMENT OF ABDOMINAL SECTIONS.

By H. McL. Kinghorn, M.D.
Resident Medical Officer, Montreal General Hospital.

The success which to-day attends abdominal sections is much dependent upon the preparatory and after treatment and I have thought it advisable to write this paper on the management of these cases, as such good results have attended operations of this nature in the gynæcological wards of the Montreal General Hospital.

I am indebted to Dr. T. Johnson-Alloway, gynæcologist to the hospital, for permission to use his ward records in preparing this paper.

On admittance to the ward the patient's general condition is examined into thoroughly by the house surgeon and anything abnormal reported to the attending surgeon.

We attach a considerable importance to the condition of the blood, and where the nutrition and general condition of the patient is poor a blood examination, both the amount of hæmoglobin and the number of red and white corpuscles, is made. This is of much service where an immediate operation is not required, as it gives the clue to the proper tonic to give before and after the operation Though not exactly necessary, we think that the blood examination is advantageous before an abdominal section, and in several cases have congratulated ourselves that such an examination had been made, as on this account the operation was postponed. Where immediate operation is required the blood examination is not considered.

Any abnormality of the heart, kidneys or lungs is reported to the hospital anæsthetist in order that he may be ready should any emergency arise at the operation.

After the patient has entered the ward and her condition has been carefully examined, she is placed under thorough hygienic, dietetic and medicinal treatment.

One should see that she gets the maximum amount of rest and sleep, also that the functions of the excretory organs are stimulated. The skin is got in good condition by having her take a hot bath every night and at the same time having the whole body thoroughly scrubbed with a hand brush or loofah. The urine when concentrated should be rendered dilute by large quantities of diluents and alkalies. Special attention should be given to the condition of the bowels and this for three objects—to clear out the canal, to establish as far as

possible normal secretion, and to remove the causes of flatulence whatever they may be. Such laxatives as compound licorice powder, cascara sagrada and magnesium sulphate act very well. A convenient way is to give the patient every morning one drachm of magnesium sulphate every hour or half hour till the bowels act. This tends to relieve whatever congestion of the pelvic organs there may be, and is thus an advantage.

The condition of the tongue is important. It is well to have the tongue clean and moist. Dilute hydrochloric acid given in fifteen or twenty minim doses largely diluted with water and taken slowly after meals acts well where the digestive disturbance is of an atonic character. The rhubarb and soda mixture of the Montreal General Hospital also acts admirably.

The food allowed the patients should be of the most nourishing kind and at the same time easily digested. They are at once put on a liquid diet, which consists of milk, clear soups, tea and coffee, bread and butter, gruel, rice, sago, arrowroot and such like articles, according to the palate of the patients, the idea being to have the intestinal canal in the best possible condition and to avoid giving anything that produces flatulency. Milk should be given in small quantities at a time; if it disagrees it may be diluted with soda water, lime water or ordinary water. Vegetables such as potatoes are not allowed in the wards.

The medicinal treatment is both symptomatic and tonic. The symptomatic treatment has to deal mainly with pain and with those disturbances of the generative organs which almost invariably attend patients who have to undergo an abdominal section.

Hot douches morning and evening, or oftener if required, of boracic acid solution 10 grs. to the oz. in strength, or creolin 5ii to the quart, or permanganate of potash 4 grs. to the quart of water will be found to give much relief to the patient and at the same time tend, through their stimulating effects, to drive the blood into the general circulation and thus relieve pelvic congestion. These douches should be given at a temperature of 105° F.

The tonic treatment is also of much importance, because the patient is being built up to resist the shock of the operation. If the blood examination shows that a condition of anæmia or chlorosis exists, iron should be given, either alone or in combination with quinine and strychnine.

The patient having been under the above course of general preparatory treatment for a variable time, according to the urgency of the

case and the progress made, now undergoes the special treatment preparatory to the operation.

The previous evening the nurse is told to prepare the patient for operation in the following way: To spread green soap on a piece of lint of sufficient size to cover the abdomen from above the umbilicus to the pubes and across to cover the space between the two crista ilii. The soap poultice is put on the last thing at night and should be left on at least four hours. The skin of the abdomen is made strongly aseptic in the usual way.

The patient then having been thus prepared is taken to the operating theatre and made ready for the operation. We will leave her while she is there and speak of the treatment to be pursued after she has been operated upon.

Where much shock is feared instructions should be left with the nurse in the ward to have the appliances ready should there be need of stimulation. The preparation of the bed is left to the nurse.

Where the condition of the patient is very low, a saline enema ʒi of salt to the pint of water 100° F. is given. A hypodermic of strychnine $\frac{1}{60}$ to $\frac{1}{20}$ gr., or digitalin $\frac{1}{100}$ gr. may be given. With a condition not so extreme but yet requiring stimulation, enemata of beef tea ʒiii and ʒi of brandy or whiskey have been found to act admirably. They may be repeated every three or four hours. Enemata should be given at a temperature of 100° to get the best results, and when continued for any length of time should be peptonized.

We give a nutrient enema even before the patient has become conscious where there is any indication for its employment. Otherwise the first nutrient enema is given when she has become sufficiently conscious to retain it well.

The treatment during first twenty-four hours following the operation is that she should keep very quiet and receive no nourishment by mouth. Twelve hours after, a teaspoonful of hot water may occasionally be given to her. At the end of twenty-four hours a teaspoonful of equal parts of milk and lime water, or milk and soda water, or rice water, or barley water may be given every hour and gradually increased if the stomach is not rebellious. The nutrient enemata may be continued with advantage until the stomach is strong enough to allow the patient to take sufficient nourishment. Milk diet is continued for two days, and if at that time there are no contraindications, such as an elevation of temperature, the diet may be gradually changed. The vomiting and pain which almost invariably follow an abdominal section should, unless very severe, not be treated, as within twenty-four hours both will have much diminished. Keep-

ing the stomach empty has been found to be the best remedy to control vomiting. Instructions should be given to the nurse to catheterize the patient if necessary every six or eight hours, care being taken to avoid the introduction of vaginal secretion into the bladder. This is prevented by washing the genitals with 1-40 carbolic lotion or some other antiseptic previous to passing the catheter.

The complications that follow an abdominal section have been greatly reduced by such preparatory treatment as is at the present day employed. They do, however, occasionally arise, and then cause much annoyance to the surgeon. But by endeavouring always to anticipate any mishaps that might possibly occur the best results are obtained and complications are often avoided.

In favourable cases the cessation of vomiting is usually to be expected within twenty-four hours. Should, however, the stomach still continue to be irritable and resist all medicinal efforts to quiet it, nothing should be given by the mouth, and the rectal enemata should be continued till the gastric irritation has ceased.

At any time after the operation the patient may rinse the mouth with hot water but not swallow it. Ice should not be given as it increases the thirst.

The relief of pain introduces the much mooted subject as to whether opium should be given or withheld. We favour the view that opium should not be given unless all other means have failed to quiet the patient. It was formerly the practice everywhere after an abdominal section to keep the patient under the influence of an opiate sufficient to relieve pain, with the bowels as a result constipated for a week or longer. Should symptoms of peritonitis supervene, the administration was to be increased. We are wholly opposed to this and administer opium only as a last resort, when no other means will control the pain from which patients do occasionally suffer.

We have found that on several occasions where calomel and soda, of each five grains, had been given to evacuate the bowels preparatory to the operation that fifteen trituratis, given after the operation, of one-tenth of a grain of calomel, one given every half hour, has produced a severe mercurial stomatitis. This corroborates the well known fact that calomel in small doses tends to produce mercurial poisoning more quickly than it does in large doses. We therefore prefer to give castor oil as the first purgative after the operation. After the bowels have been thoroughly purged care should be taken to have them move daily, either by a soap suds enema or by a saline or some other laxative. Where nausea is persistent and the patient cannot retain the oil, a good plan is to give from six to ten grains of calomel in a single dose; this they retain.

In cases that run the usual course the temperature should not at any time exceed 99° or 100° F. A slight rise in temperature is always seen the day following the operation and is due to a variety of causes. Should the temperature rise above 100° or 101° at any time during convalescence the administration of a laxative to empty the bowels is at once indicated, when a fall of temperature will result. Sometimes, especially in pus tube cases, there is seen a shoot up of temperature to 102° or 103° with a corresponding increase in the pulse rate, but a brisk purgative will usually bring the temperature down as rapidly as it had gone up.

The pulse should not as a rule go higher than 80 or 90. A rapid pulse with a low temperature should not occasion any anxiety, as it is due to anæmia or to the shock of the operation. A slow pulse and a high temperature usually indicates a low form of peritonitis.

The abdominal dressing need not be looked at during the first week unless either pain or persistent elevation of temperature leads to the supposition that that there may be something wrong with the stitches, possibly the formation of mural abscess. As a rule the sutures are removed on the tenth day. The abdomen is then washed with a 1-2000 sublimate solution and collodion and absorbent cotton put over the incision, no further dressing being required.

A certain amount of abdominal distension is frequently observed after a cœliotomy, and though it should be looked for, guarded against and treated immediately, it need occasion no alarm. A sharp purgative will tend to reduce it, but should the purgative prove ineffectual and the tympanites increase, a soap suds enema with half an ounce of turpentine will be beneficial. The soap suds enemata without the turpentine may be continued, one every hour should the tympanites continue.

As regards septic peritonitis, we have not had a single case under observation and therefore cannot from experience speak of its management.

When drainage is thought necessary the glass tube with capillary guage drain inside, the rubber tube, the gauze drain or combined gauze and rubber are the methods employed.

At the end of the third week she is allowed to sit up in bed and a day or two after she is allowed to leave the hospital, with instructions to wear an abdominal support and report herself at the hospital from time to time.

Clinical Reports.

CASE OF ICHTHYOSIS TREATED WITH THYROID EXTRACT.*

By W. E. Deeks., M.D.

Helen L., aged 20, born in England, came to this country about five years ago, says that as long as she can remember her skin has been rough, worse on the arms and legs than over the rest of the body and in the winter than the summer, that it was never itchy nor gave her any inconvenience apart from the appearance.

About four years ago it began to get worse, especially over the extensor surfaces of the legs, and in about six months had extended over the whole body. She then consulted a physician, who prescribed arsenic in solution and a lotion. This was continued for six months without any beneficial results. She afterwards consulted another physician, who has been treating her up to a few months ago.

I was called to see her on the 14th of May for an ingrowing toe-nail and at once noticed the peculiar condition of the skin of the legs, when the above history was elicited. To all appearances she was chlorotic, her mucous membrane pale, sclerotics pearly white, was weak and her skin over face and hands was rough and the latter chapped. Over the extensor surfaces of the legs the skin was thickened, of a dull waxy or pasty appearance, much thickened, marked off in polyhedral spaces and did not scale readily; when it was separated it was in large irregular plaques. The forearms were similarly affected but not so severely, and the whole body was covered with a scaly dry skin, more marked on the extensor surfaces. It had evidently from childhood been present to a greater or less extent, as she distinctly remembers having lotions applied to her face and hands when very young. The nails and hair were unaffected. A diagnosis of ichthyosis simplex was made and on that date iron in the form of Blaud's pills was prescribed. On the 20th of May, Parke, Davis & Co.'s extract of thyroid was given in five grain doses three times daily and on the sixth day I was again called to see her and found her suffering from languor, malaise and nausea, evidently much depressed, with a soft rapid pulse.

The extract was discontinued for two days, when these symptoms disappeared, and then one grain doses were begun three times daily.

Read before the Montreal Medico-Chirurgical Society, June 25, 1895.

At the end of two weeks this was increased to two grains three times daily and at the end of a month was discontinued, as the patient was entirely cured. After a week's treatment the apparent condition of the legs and arms was aggravated, as large furfuraceous scales were being thrown off, but over the rest of the body the skin was softer, more flexible, the scaly appearance had disappeared and she began to feel better than she had for years.

Two weeks later when I saw her again a remarkable desquamation was taking place over the legs, resembling very much that following erysipelas. Large scales were given off and underneath the skin was soft, pliable and had a silky appearance. The arms were completely cured, and one month from the time she began to take the thyroid extract the only remains of the ichthyoid condition were a few of the dried scales near the ankles, and these were fast disappearing.

Her colour and appearance had greatly improved and she declared that she never felt so well in her life.

I consider the above condition to have been a mild form of congenital simple ichthyosis resulting from a disturbance in some way of the nutrition of the skin, possibly through insufficient thyroid activity, and that the administration of this directly supplied the necessary element to effect a cure.

TWO CASES OF BELLADONNA POISONING.

By John A. Hutchinson, M.D., Westmount.

Case I.—I was called on the 10th of May last to see a servant girl who had swallowed a tablespoonful of belladonna liniment, thinking it was some stimulant. The fact that she had taken the poison was not known until several hours afterwards, when she was noticed to be ill and acting foolishly. She acknowledged that she had taken the belladonna and her mistress gave her an emetic which acted promptly. An hour after this I saw her, when she presented the following symptoms:

The face was suffused, pupils were largely dilated. She could stand upright, but could not walk without staggering; could answer questions well enough, but was rather incoherent and did not talk sensibly. Pulse 125, temperature 99°, and breathing rather fast. Complained of a queer feeling in her eyes and great dryness of the throat.

I gave her 20 drops of tinct. opii. as an antidote. The next day she appeared to be all right, except a strange feeling in her eyes and a dry throat.

Case II.—On July 5th I was called to see a man aged 48, who had swallowed by mistake a dessert-spoonful of a liniment of belladonna and chloroform. He had taken this on an empty stomach and a short time afterwards ate a hearty meal. About an hour after this he felt ill, could not walk straight and talked incoherently. His wife then discovered that she had given him the above dose from a bottle labelled "Poison—Liniment." I saw him about three hours after the poison had been taken. His pupils were widely dilated, face intensely suffused and breathing fast; pulse 135, temperature 99½°. He was talking in a delirious manner; could not stand. After his stomach was emptied by an emetic he was told to lie down. He began to crawl about the room and act like a lunatic. He was given half a grain of morphia hypodermically; this had a quieting effect. As no urgent symptoms occurred he was allowed to sleep off the effects of his combined mixture of belladonna, chloroform and now morphia added. The next day he turned up smiling, but with a very dry throat and a dizzy head.

In both of the above cases the dose of belladonna must have been almost all absorbed before I saw them and there was no use in washing out the stomach. The dose of opium in both cases acted admirably. The active delirium in the last case after taking the morphia subsided and did not return.

In neither of these cases was the dose sufficient to prove fatal after the stomach was emptied, but certainly the opium had a counteracting influence to the symptoms arising from the belladonna.

RETROSPECT
OF
CURRENT LITERATURE.

Surgery.

Treatment of Gonorrhœa.

VALENTINE. "Treatment of gonorrhœa by irrigations of permanganate of potash."—*Journal of Cutaneous and Genito-Urinary Diseases*, June, 1895.

The method of the treatment of gonorrhœa by irrigations of permanganate of potash by Professor Janet, of Paris, introduces three new procedures:

1. Irrigation of the whole urethra instead of injections of small quantities of solutions.

2. Forcing fluids back into the bladder without the aid of a catheter.

3. Applying such pressure to the fluid in the urethra that it distends the urethra and enters all the glandular spaces occupied by the gonococci.

The apparatus consists of a glass irrigator capable of holding two thousand grammes; to this is attached a rubber tube 300 centimetres (about 120 inches) long, whose free end is slipped over a glass nozzle about seven centimetres long and six centimetres in circumference and running to a blunt point, which can easily be pressed into the meatus to occlude it entirely. Frank, of Berlin, uses a nozzle with an entirely flat point for very sensitive cases with exceedingly small meati.

At first the strength of the solution is 1 in 6,000, and as tolerance is established the strength is increased to 1 in 4,000, 1 in 2,000, and finally 1 in 1,000.

The solutions are used warm. The irrigator is placed about two and a half metres above the table on which the patient lies.

The prepuce, glans, corona and meatus are carefully cleansed. The nozzle is held into the meatus and the anterior urethra thoroughly washed out. Then while the patient breaths or makes efforts at

urination the solution is passed through the urethra into the bladder. From two to five hundred grammes are allowed to flow in and the patient is allowed to eject it. These injections are made three or four times on the first days, twice on the second, third and fourth, and if required, on the fifth day, when usually all gonococci have disappeared; then once a day until all discharge has ceased, which in Janet's most severe cases occurred on the tenth day.

Before each injection a slide is made for microscopic examination. In the first and second day but little change occurs. Thenceforward they become sparser, and generally on the fourth day have a swollen appearance; the lumen between each pair of gonococci seems wider and nowhere can any further tendency to segmentation be observed.

To decide whether the patient is really cured or not an irrigating injection of argent nit., say 2 grs. to the oz., is made. This sets up a free discharge in six to twelve hours. If this discharge contains no gonococci it will cease, as any simple urethritis, in a few days. If it does not cease in a few days, or if found to contain gonococci, then the treatment is carried on for another week and the test re-applied.

Routier would not interfere during the first ten days of an acute attack, except to give an alkaline bath every three days and to insist upon the wearing of a suspensory bandage. About the tenth day of an acute case, or at once in a case that comes for the first time after the acute symptoms have passed, permanganate of potash irrigations are given as above. He generally effects a cure in eight days.

The patient should be instructed to pass water before each irrigation, but it is claimed that a few gonococci may be washed into the bladder with impunity.

During the early stage, while the disease is confined to the anterior urethra, that part of the urethra only needs treatment.

Perforation of Gastric Ulcer.

BARLING. "Diagnosis and treatment of perforation of gastric ulcer." —*British Medical Journal*, June 15th, 1895.

In his third Ingleby lecture, Prof. Barling discusses the diagnosis and treatment of perforation of gastric ulcer. He first discussed the anatomy and relations of the stomach, laying stress upon the oblique and almost vertical position of the stomach, with the lesser curvature facing almost to the right and upon the relations of the left subphrenic space. He condemned the proposal to excise gastric ulcer which had not perforated, but thought the operation practiced by Kuster was a distinct advance in the surgery of the stomach.

This surgeon had operated upon two patients suffering from

hæmatemesis and dilatation of the stomach. He opened the anterior wall of the stomach, applied the actual cautery to the ulcer and then performed gastro-enterostomy, both patients recovering. A large majority of these ulcers occur on the posterior surface and lesser curvature, a few occupy the region of the pylorus, and a still smaller number involve the anterior surface of the stomach.

The incidence of perforation does not, however, in the least degree correspond to the incidence of locality: ulcers on the anterior wall perforate with great frequency, those on the posterior surface, rarely in proportion to their actual number, whilst those on the lesser curvature perforate comparatively often.

The explanation of this varying tendency to perforate is found mainly in the relation of the stomach. The posterior surface and, to a less degree, the smaller curvature tend, with the advance of the ulcer to the surface, to become adherent to adjacent parts. The anterior surface on the contrary, owing chiefly to mobility, rarely becomes adherent.

Apart from the existence of protecting adhesions, he thinks another influence may have something to do with the frequency of anterior perforation. The symptoms of ulcer on the anterior wall are apt to be less marked than those on other parts of the stomach, and they are occasionally quite wanting. Hence the subjects of them are probably careless as to the quantity and quality of their diet, and the ulcers are more subject to undue stretching and to traumatism which are the final causes usually of perforation.

The liability to perforation is greatest in young women between the ages of 17 and 25. There is also a certain liability, though nothing like so great, in males, and in them the incidence is chiefly between the years of 40 and 50.

It is a matter of supreme importance to be able to recognise these cases at once, that as little time as possible may elapse during which the contents of the stomach are escaping and setting up septic peritonitis.

The symptoms mostly to be relied upon are, a history of stomach indigestion, the time of the last meal, and the particular act the patient was engaged in at the moment the rupture occurred. Perforation almost always occurs when the stomach is full or partly so, commonly when the patient is in a more or less vertical position, and frequently from some particular act or exertion, such as stooping to pick up something, sneezing or lifting a heavy weight.

The onset of pain is sudden and intense, often accompanied by faintness or collapse.

The abdominal wall will now be found to be retracted and the muscles rigid, as though by packing the viscera together they were endeavouring to limit extravasation.

Respiration is usually entirely thoracic, quick and shallow, the temperature sub-normal and the pulse quick and feeble.

From this onset, Prof. Barling states, there may follow: 1. A rapidly spreading septic peritonitis, proving fatal in 12 to 14 hours; 2. or it may remain for a time localised between the stomach and the liver; 3. or it may run a chronic course and end in a subdiaphragmatic abscess, the opening in the stomach closing.

If a subdiaphragmatic abscess forms on the left side septic pleurisy often occurs secondarily.

In operating in such a case, Prof. Barling would first make an opening over the most prominent part of the tumour and then make an opening through the thorax in the mid axillary line, removing two to three inches of the eighth rib. The lung retracts out of the way and the diaphragm is exposed. If empyema or lung abscess are present they can now be dealt with as thought best. If they are not present, the diaphragm should be stitched with a ring of sutures to the edge of the wound in the parietal pleura, and either opened at once or, perhaps better still, packed and left until the next day to secure adhesions between the pleural surfaces. A finger passed into the abdominal opening should guide the operator as to the point at which the opening in the diaphragm should be made so as to get as completely as possible to the bottom of the collection and get with safety to the spleen. In operating on the acute case, Prof. Barling does not excise the edges of the ulcer, but simply closes with a Lembert suture. If the diagnosis is clear the operation should be undertaken as soon as the collapse is sufficiently recovered from to enable the patient to bear an operation that may be somewhat prolonged.

Prof. Barling estimates that without operation 95 p.c. of cases of perforation of stomach prove fatal.

He has collected 37 cases of operation with 13 recoveries. We can expect even better figures in the future with a better knowledge of the symptoms and an improved technique.

G. E. Armstrong.

Pathology.

Typhoid Abscesses in the Kidneys.

FLEXNER. "A case of typhoid septicæmia associated with foul abscesses in the kidneys due to the typhoid bacillus."—*Journal of Pathology.* III. 1895, p. 202.

The discovery of the typhoid bacillus in pure culture in connection with a joint abscess, recently reported in this JOURNAL by Dr. C. F. Martin, may well be followed up by a *resumé* of recent literature upon the occurrence of this bacillus in regions other than those which form its usual habitat in cases of enteric fever—and Dr. Flexner, with the excellent bibliography which he has appended to his article, has lightened our task considerably.

In individuals who have died of typhoid, provided death has occurred not too late in the course of the disease, it is usually possible to cultivate the bacillus from various organs—from the intestinal walls, mesenteric glands, spleen, liver, and kidneys, and, as has been repeatedly found at the Johns Hopkin's pathological laboratory, from the bile. Recently Quincke has pointed out its frequent presence in the bone marrow and, as Chantemesse and Widal, Eberth and several other observers have shown, it has been discovered in the fœtal organs in cases of abortion. Evidently then, judging from this distribution, the bacillus must enter the blood stream and be thereby conveyed to various regions.

Nevertheless, as a rule, the bacillus is not detected in the blood. Such capable observers as Fränkel and Simmonds and Sittman failed to find it—although it may be added that equally capable investigators like Karlinski and Vincent have recorded its discovery there. The general experience is that such discovery is exceptional, so that Flexner's explanation may be correct, namely, that the bacilli entering the blood stream are in general rapidly destroyed. We are not wholly satisfied, however, with this explanation. While human blood serum outside the body is capable of destroying large numbers of typhoid bacilli, it by no means follows that the plasma of the living blood have these properties to the same extent. In all probability it has not, and it may be, simply, that the bacilli do not *multiply* in the circulating blood, while such as are present in any sample removed for inoculation purposes are destroyed by the modi-

fications that the blood undergoes upon removal. The very fact that the mesenteric lymphatic glands and the spleen are the regions in which the bacilli are most surely to be found is in favour of the supposition that the bacilli tend, as it were, to be filtered out of the lymph and blood rather than destroyed therein.

In general, save in the regions already mentioned, the bacilli are not discernible, and in these regions (with the exception of the intestines) they induce very little change beyond at most some proliferation and accumulation of lymphoid cells. Yet just as under certain conditions the diplococcus of pneumonia may affect organs other than the lungs, and may cause suppurative otitis media, meningitis, ulcerative endocarditis and other evidences of septicæma (*i.e.*, of presence of the pathogenic microbes in the circulating blood) or, as was indicated in our last number, the gonococcus may induce abscess formation in parts far removed from the primary lesion, so also under certain conditions the bacillus of typhoid is capable of inducing a septicæmia, and under these conditions it is the cause of definite and indeed typical abscesses. At least ten observers have found the bacillus in connection with local inflammations of bone—in cases of osteomyelitis and periostitis—there are five cases on record of abscesses of skin, muscle and periarticular regions, six cases of cerebro-spinal meningitis.

Flexner and two other observers have found the bacillus causing abscess of the spleen; Chiari and Gilbert and Girode have seen it causing purulent cholecystitis. Several other observers have found it associated with pleurisy and empyema, in suppurative strumitis, orchitis and epididymitis, while three cases are on record (Carbone, Vincent, Girode) in which it has been obtained in pure culture from ulcers of the heart valves. In all these cases, it may be added, there had been a previous attack of enteric fever. In a large proportion of these ample care had been taken to make sure that the form described was not the nearly allied bacillus coli communis.

Dr. Flexner's case here described is most instructive and has been studied with remarkable fulness. The subject, a coloured girl æt. 18, an inmate of Dr. Osler's wards, died three weeks after the onset of an illness characterized by only moderate fever, diarrhœa, mental dulness and delirium, enlarged spleen, small amount of albumen, with some red corpuscles in the urine, but no *diazo* reaction, cutaneous hyperæsthesia and increased reflexes, and in addition parotitis. At the autopsy typhoid ulcers were found affecting the Peyer's patches, as also the solitary follicles of the cæcum and colon. The spleen was large, the kidneys presented numerous small white nodules larger than miliary tubercles in the cortex. In the right kidney were

whitish triangular vessels of still larger size. Cultures of the typhoid bacillus were obtained from the spleen, mesenteric glands and bone marrow in abundance, from the nodules on the kidney, from the lungs, and again from the heart blood. The swollen and purulent left parotid gland yielded pure cultures of the streptococcus pyogenes, which was also found in the lungs.

Microscopical examination of the kidneys showed the white masses to be true abscesses with collections of pus cells and typhoid bacilli. Here and there glomeruli could be seen containing the bacilli in their loops and also in Bowman's capsule. It seems clear that the infection of the organs had been brought about by the passage of the microbes through the glomerular walls.

This was clearly a case of typhoid septicæmia or, indeed, typhoid pyæmia. It may be asked why the bacillus is occasionally able in this fashion to induce such extensive metastatic disturbance. Two causes, speaking broadly, are capable of bringing this about—either heightened virulence of the microbe, or lessened constitutional resistance. Flexner indicates that not improbably the second cause was operative here and that lessened reaction on this part of the system may have been due to the concurrent parotitis, multiplication of the streptococcus pyogenes, and consequent diminished bactericidal power of the blood. We have already hinted that we would prefer a broader conception of bactericidal action, and would see in the anatomical changes induced by the typhoid bacillus in the different states a distinct evidence of altered cellular response; in cases of medium severity an accumulation and proliferation of lymphoid cells, in these severer cases a production and accumulation of pus cells proper; otherwise the suggestion seems to us eminently plausible and is in harmony with what we know concerning the dangerous aspect assumed by other zymotic diseases when complicated by the presence and action of the chain coccus.

Curchsmann's Spirals.

GERLACH, W. "Die Entstehungsweise Curchsmannscher Spiralen und der sog. gewundenen Harncylinder."—*Deutsch. Archiv. F. Klin. Medicin*, LIII., p. 189; also *Fortschr. d. Medicin*, XIII., 1895, p. 448.

Gerlach points out that thin threads attached by one end to the tracheal wall tend to become spirally wound by the action of the alternating currents of inspired and expired air, and supports Schmidt as against Senator in regarding Curchsmann's spirals and coiled urinary casts as caused by alternating currents.

J. G. Adami.

Diseases of Children.

Return Cases of Scarlet Fever.

"What is 'premature discharge' from a fever hospital?"—*The Lancet*, April 13, 1895.

"'Return' cases of scarlet fever."—*The Lancet*, June 8, 1895.

A. K. CHALMERS. "'Return cases of scarlet fever."—*The Lancet*, June 22, 1895.

Under the caption of the first question the *Lancet* in an editorial called attention to the report of the Islington medical officer of health, in which he makes reference to cases of scarlet fever which have arisen shortly after the return home of children discharged from the hospital. In one case a child sent to the hospital certified as a case of scarlet fever, but in reality a case of eczema, according to the statement of the medical superintendent, developed scarlet fever four days after admission. Sixty-two days afterwards it was dismissed as cured, although still suffering from an eczematous condition of the hands and feet. Four days after its return home the child's sister developed scarlet fever. The medical officer of health on examining the child sent home considered that it had not completely desquamated and that it had been prematurely discharged. In a second case a child admitted to hospital on September 22nd was discharged on November 23rd, and on November 28th a brother with whom the child slept on the night of its discharge developed scarlet fever, and shortly afterwards two other children showed similar symptoms. On December 6th the discharged child was seen by the medical officer of health, who found patches of dandruff in the hair and a slight but perceptible desquamation on the eyebrows. The *Lancet* asks the question, is there not such a thing as recurrent desquamation, and may not a patient discharged with a clear skin subsequently in a fresh environment evince a partial re-desquamation?

The whole of this subject is carefully investigated by Dr. Chalmers, medical officer of health for Glasgow. In his paper he says that it is usual to assume that the explanation of the new infection is to be found either in the earlier patient or in his clothing. The patient may bear evidence of still being infectious, but there is also some reason for believing that the termination of the period of infectivity

may not coincide with the disappearance of the clinical signs, or, in other words, the power to transmit infection would in some instances appear to attend a patient after apparent recovery. Moreover, we have of late been made familiar with the phrase "recurring infectivity" as a clinical fact of occasional occurrence in cases of diphtheria, and the term would seem to be equally applicable to certain cases of scarlet fever. A third possible source of re-infection may lie in the household of the patient, but here it is to be remembered that the secondary cases are almost always resident at home and unaffected till the return of the hospital patient. The writer discusses the question of clothing at home being the source of contagion, but does not think that will account for more than a small percentage of the cases. During the year 1894 nearly 2,593 cases of scarlet fever were treated in the Glasgow hospitals, and subsequent re-infection appeared in 70 of the houses to which these patients returned, or in 2·6 per hundred dismissals. The strictest investigation was made in all these cases. A record was taken of the number of days intervening between the date of the return of the one and the sickening of the other and the length of residence in hospital of the former case. This case was also examined for the existence of desquamation, nasal or aural discharge, excoriations, etc., in general, anything which could be regarded in the light of a lesion, and when such was found the ward journals in the hospitals were subsequently examined for a history of the case. Inquiry was also made regarding the amount of intercourse which had taken place between the earlier and more recently infected cases, and as to the clothing which had been worn. In reference to the length of residence in the hospital it is stated that the minimum period is eight weeks. The criteria for dismissal are that the patient should be in good general health. All the cutis must have separated and the surface of the body be quite intact. There must be absence of discharge from ears or mucous surfaces and the urine must be clear. Cases have sometimes to be dismissed with chronic ear discharge or albuminuria, but are never so dismissed under three months. On dismissal a complete bath with free use of carbolic soap is taken, and clean non-infected clothes are put on. Most careful precautions are taken with all clothing arriving at the hospital with the patient, and it would appear that these must be excluded as a source of infection.

Of the re-infections 93 per cent. occurred within a fortnight after the dismissal from the hospital, the remainder in the third week. With reference to the latter he says: "In the investigation I practically took every case coming to my knowledge. Where infection

reappeared in a household, and when it became evident that the recurrence of lesions subsequent to dismissal from hospital had at least a time association with cases sickening as late as the fifteenth or sixteenth days, it was difficult to know when absolutely to exclude others when the connection was not so apparent. To such cases where lesions reappear I am disposed to think we should restrict the term "recurring infectivity," for there are others where no lesion is apparent, but where there is ample ground for the conjecture that the power of transmitting infection is retained after the lesions have ceased.

By far the most obvious connection between the primary and secondary infections exists in those cases where desquamation or other physical and easily recognizable lesion is found on the primary patient, even although he may have been detained for the full period in the hospital and at the time of dismissal desquamation had ceased and the patient was in perfect health. This occurred in 19 cases. In 8 of these there was desquamation, 8 more presented sores (excoriations, eczematous patches, etc.) on the lips, ears or head; in 5 there was a discharge from the nose, 2 had a discharge from the ear, and 1 had a sore throat. With reference to these he says: "It is easy to understand the recurrence of a discharge from the ear when it has once been invaded by suppurative inflammation, but the inference from these cases is that it may also be associated with a recurrence of the specific infectivity which at first gave it origin. Again, evidence of desquamation on some part of the body was present in nearly half of the number in which lesion was discovered, and it is impossible to regard its occurrence at the time of the secondary illness only in the light of a coincidence.

In connection with these recurrences he lays some stress on the altered conditions on the child's return home compared with the strict discipline and regular meal and sleeping hours of hospital life. Undue strain, he says, is often thrown on one or other of the functions of assimilation and excretion, the physiological balance is for the time destroyed, and an error in dietary, resulting in disordered digestion, may find expression in the skin relapsing into a condition from which it had but lately emerged.

Again, in those hospitals where the wards are continuously full, and the cubic space allowed per head for each child is limited, the writer thinks there is always a tendency for dismissals to become associated with return cases. A saturation of the system, in his opinion, is the result of such a condition, due either to delayed elimination, or to the constant breathing of a saturated atmosphere, in which, notwithstand-

ing ordinary precautions, the discharged convalescent becomes a danger to susceptible persons who may be brought in close contact with him. From the analogy of diphtheria it is possible that an unrecognized retention of infection may take place in the nares or fauces, or even further down the respiratory tract, and an effort was made to disinfect these, but the observations are as yet too incomplete for deduction.

In reference to the amount of intercourse that had taken place between those dismissed from hospital and those sickening during the first week, 30 per cent. occupied the same bed and more than 60 per cent. occupied the same room, and in all the instances the contact had been very close.

In conclusion, he questions whether the nimbus of infection which attends a convalescent scarlet fever patient is capable of removal by soap and water, and strongly urges that every effort should be made to prevent commingling as far as practicable of the recently recovered with healthy children, and an absolute restriction should be placed on their sleeping together. In a few cases, certain leisons, chiefly desquamation and discharges from the ear and nose will recur and may be infective.

Dr. Cooper-Pattin, medical officer of health for Norwich, reports (as quoted by the *Lancet*) 11 cases of scarlet fever which occurred in connection with patients discharged from the Norwich Fever Hospital. His observations accord very closely with those of Dr. Chalmers. Rhinorrhœa, which had ceased at the time of discharge, may recur after a short interval, and may apparently be instrumental in conveying infection to other members of the family. Secondary peeling occasionally takes place, and may, in the doctor's opinion, account for some of these "return" cases. In three of Dr. Cooper-Pattin's cases the secondary infection was due to infected clothes put away in the early stages of the patient's illness, before, perhaps, its nature was recognized. Dr. Chalmers in his records has endeavoured to guard against this accident. In regard to the whole subject the *Lancet* says: There is an accumulation of evidence pointing to recurrent nasal discharges as a source of infection, but we have not ourselves come into contact with cases where the awakening of infection in the family of a discharged patient suggested secondary desquamation as the cause of it. However, it is a difficult matter to dogmatize on. "Return" cases of scarlet fever are certainly sometimes associated with unfinished primary peeling. A short time since we asked, What is premature discharge from a fever hospital? and we commend the above considerations to those who with ourselves are anxious to furnish an answer to the question. *A. D. Blackader.*

Practical Notes.

GROWING PAINS IN CHILDREN.—Growing pains defined as pains in the limbs of children caused by and met with during rapid growth, sometimes so severe as to give rise to growing fever, have been diagnosed by the author less and less frequently as the years rolled by, until the vanishing point was reached. Cases which have been classed together under this name are the following :

Myalgia from Fatigue.—This is the commonest variety, noticed usually about the knees and ankles after unusual exertion. They are probably due to auto-infection brought about by excessive production of effete materials in the blood, and their inefficient elimination. Elevating the limbs, and rubbing them with the palm of the hand in a direction toward the heart, thus relieving venous stasis, and facilitating a supply of healthy blood to the exhausted muscles, promptly relieves the pain.

Rheumatism.—This is second, if not first, in frequency. There is slight pain in the joints, little or no swelling, and very mild fever, and hence the true cause is not recognized ; but rheumatic endocarditis frequently develops in these cases.

Diseases of Joints and Bones of the Lower Extremities.—Cases of hip-joint disease and suppurative epiphysitis of the upper end of the fibula, diagnosed by the laity and allowed to go on untreated, are occasionally met with.

Fevers—Accompanied by pains in the limbs, in one instance proving to be the beginning of typhoid fever, constitute another class.

Adenitis.—A lad of sixteen years, said to be suffering from growing pains, was found on examination to have gonorrhœa and a sympathetic bubo.

The malady "growing pains," with its frequent concomitant "growing fever" like the disorders of dentition, exists principally as an article of faith. The complaint still maintains, however, a strong hold of the lay mind, and forms an extremely common lay diagnosis, which is often the cause of much suffering, and even death, by leading to the neglect of the curative measures at a time when they are most effective.—*Archives of Pediatrics*, May, 1895.

MANAGEMENT OF ECZEMA IN CHILDREN.—A paper on the above subject was read before the British Medical Association by Dr. Malcolm Morris, who called attention to the following points :

1. *Internal Medication in Eczema.*—The writer does not think internal medication required, unless some constitutional dyscrasia underlies the skin affection. When the disease is inflammatory, local

treatment may be relied upon entirely. Of medicines to be given internally, antimony is most valuable. In neurotic cases the sheet anchor is opium. If this disagree, some other sedative may be given. If there is much depression, quinine may be combined with opium. If the discharge is abundant, belladonna may be combined with the quinine. Phosphorus, strychnia and arsenic are useful in selected cases, but the last must be used with caution, or it will do harm. Cod liver oil and general tonic treatment are indicated when malnutrition and anæmia are present. Iron is contra-indicated when acute inflammation is present.

2. *The Influence of Diet in Eczema.*—The author does not believe that the diet has any influence except indirectly.

3. *The Principles which Should Underlie Local Treatment.*—Speaking generally, every case should be treated as if it were of parasitic origin. The objects aimed at should be, first, to destroy microorganisms; second, to protect the inflamed surface from the air, and from further microbic invasion; third, to sooth irritation. We should soothe when the inflammatory process is acute, stimulate when it is chronic, and in either case keep the parts continuously under the influence of antiseptics.—*Archives of Pediatrics*, June, 1895.

A. D. Blackader.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL.]

PERIODICALS.

JUNE, 1895.

THE CANADIAN PRACTITIONER.

(1.) Displacements of the liver—J. E. Graham, Toronto, p. 389.

Operations for the removal of ovarian tumours—A. Vander Veer, Albany, N.Y., p. 428.

Staining fresh tissues by the aid of formalin, T. S. Cullin, Baltimore, p. 450.

(2.) Medical evidence in the Hyams' trial, p. 452.

THE CANADA LANCET.

On the radical cure of inguinal and femoral hernia by operation—Alex. H. Ferguson, Chicago, Ill., p. 289.

The philosophy of pelvic and abdominal surgery—Joseph Price, Philadelphia, Pa., p. 297.

L'UNION MÉDICALE DU CANADA.

Microbes et maladies contagieuses—E. P. Benoit, p. 281.

DOMINION MEDICAL MONTHLY.

(3.) Metallic sutures in fracture of the patella, with an improved method of introducing the sutures—J. J. Cassidy, Toronto, p. 153.

Science in medicine—F. Oakley, p. 156.

MEDICAL NEWS (PHILADELPHIA), JUNE 29TH, 1895.

(4.) The physiological and therapeutical action of iron, with a discussion of its newer pharmaceutical compounds—H. A. McCallum, London, Ont., p. 727.

On the evacuation of the tympanum—Donald B. Fraser, London, Ont., pp. 455, 568, 721.

(5.) JOURNAL OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, JULY, 1895. Quarterly series. Vol. I. Part 3.

The hygiene of vision in schools—T. D. Reed, Montreal, p. 257.

Teaching of hygiene in the elementary schools—Saraphin Gauthier, Upton P. Q., p. 259.

Some points in the hygiene of the young in schools—J. Chalmers Cameron, Montreal, p. 268.

A few remarks on school hygiene—M. T. Brennan, Montreal, p. 278.

Ventilation of school-houses—J. E. Doré, Montreal, p. 285.

Myopia in its relations with scholastic hygiene—A. A. Foucher, Montreal, p. 290.

Hygiene in medical education—J. I. Desroches, Montreal, p. 296.

The present state of sanitation in Montreal—L. Laberge, Montreal, p. 301.

Drainage of Montreal—Alfred Brittain, Montreal, p. 319.

Modern difficulties in bacteriological diagnosis—J. G. Adami, Montreal, p. 324.

The evolutionary developments of domestic plumbing during the past thirty-five years—J. W. Hughes, Montreal, 331.

The condition of the children's teeth of the present day, and the effects of decayed teeth on the health of the children—J. C. Adams, Toronto, p. 339.

Quarantine appliances illustrated—F. Montizambert, Quebec, p. 345.

Infection by the bacillus pyocyaneus, a cause of infantile mortality—E. P. Williams and Kenneth Cameron, Montreal, p. 355.

(1.) Cases of marked displacement of the liver, in which the normal hepatic dulness is absent, and the liver found low down in the abdominal cavity are rare, and the number so far recorded is limited. The author has collected, from literature, the reports of seventy cases, which he presents in a tabulated form. He is of the opinion that they may be easily divided into two classes. First, the floating liver, the *wander leber* of the Germans, a condition almost always found in women with pendulous abdomen, usually after frequent child-bearing; and a second class, made up of both males and females, in whom the causes of displacement are varied. His clinical observations have been limited to three cases: One an old lady aged sixty-two years, mother of ten children, who suffered from dyspnœa and cyanosis on the slightest exertion. She had emphysema and dilated right heart. The abdomen was very pendulous; the liver somewhat enlarged and very much displaced. The upper border of relative dulness was not higher than the margin of the seventh rib in the nipple line and the lower margin could be distinctly felt two inches below the umbilicus. Whenever she attempted to get up and move about she complained of weight in abdomen and difficulty of breathing, and cyanosis rapidly followed. An abdominal bandage was fitted in such a way as to support the liver, with the most satisfactory result.

The second case was a man with enormously dilated stomach and displaced liver. At autopsy it was found that the abnormal condition was primarily due to a sub-phrenic abscess, which pressed the liver forwards and downwards, and at the same time caused it to turn on its axis.

The third case was a boy of seventeen, who gave a history of having fallen off a waggon, and that the front wheel passed over him. This occurred about four months before he came under observation. He presented, in physical examination, a considerable amount of fluid in the peritoneal cavity, and a large, hard tumour was discovered in the epigastric and left hypochondriac region. This was diagnosed as the liver on account of the notch and lower sharp margin, which could be distinctly made out; the absence of dulness in the normal liver area, and the smooth upper surface. He complained of considerable tenderness over the tumour and of severe pain which passed upwards and downwards along the spine.

(2.) Perhaps no previous criminal case has excited so great and intense interest in Canada as the Hyams case, recently brought to an unsatisfactory termination for the time being. The interest excited has been, if one may so speak, of various kinds. Life insurance men, elevator experts, and medical men have special reasons for giving the

case their attention, in addition to those general considerations which attract them as part of the community. The points that are of peculiar interest to the medical profession are dealt with. A young man is found dead at the foot of an elevator shaft, and examination apparently shows that the head alone has been injured. No special examination having been made at the time the body was found, two years pass before suspicions of foul play were strong enough to call for further investigation. The body is then exhumed and examined with as much minuteness as possible under the circumstances. The head alone is damaged, but the injuries to it are of such a character as to completely destroy its continuity. A series of fractures is found which involve not only the vault, but the base and face also. Even the lower jaw has suffered. There is published a complete technical description of the various lines of fracture, as also photographs of the skull.

The damages to the head may be put into three divisions: (1) Damage to the vault of the skull; (2) damage to the base of the skull; (3) damage to the face. It must be understood that the bones only will be referred to. The difficulty of treating of injuries to soft parts at such a length of time after infliction is great, and so much uncertainty as to their location and appearance has been proven to exist that we dismiss them altogether and look only to those injuries of which the record is before us.

1. *Damage to the vault of the skull.*—For purposes of description we speak of lines of fracture as *starting at* certain points and *running to* certain other points, not intending to assert that these are really the points of origin, etc., or that the order followed in description is that actually followed in production.

The vault of the skull is divided into two lateral portions by a line of fracture which, starting at the root of the nose and separating the frontal bone nearly evenly in the midline, then opens up the sagittal suture for about three inches, then jogs to the right side at right angles for about one inch, and finally runs backwards, outwards and downwards through the occiput, and terminates in the foramen magnum to the right of the midline. (Unless otherwise specified, all lines of fracture spoken of pass completely through the thickness of bones.) Another line of fracture, which is a very striking one, runs through the frontal bone from side to side, parallel to the supraorbital ridges, and crossing that already spoken of at right angles. It begins in the right temporal fossa and terminates in the coronary suture of the left side, an attempt, as it were, to divide the skull into an upper and lower half. The chief remaining fractures of the vault appear to

radiate from the parietal protuberance on the right side, and if certain of them be followed through their course, we make a third line of division of the skull as a whole into an anterior and posterior part This line runs from ear to ear over the top just behind the vertex, passing through the right parietal protuberance on its way. Behind and below this transverse line of fracture we find another line, which runs from the right parietal protuberance straight to the tip of the occipital bone, and then upwards and outwards, to terminate in the transverse line spoken of above. Thus we have broken out from the back of the head a fairly regular, lozenge-shaped piece of bone, composed of two triangles, base to base, in the sagittal suture, and taken entirely from the parietals.

2. *Damage to the base.*—The damage to the base was as widespread as to the vault. A feature that strikes one instantly is the fact that both occipital condyles are damaged, the left being broken completely out and the right fractured transversely across in the centre. On the left side a gap is seen in the base, running from behind forwards and representing the situation of the petrous portion of the left temporal bone. This is one of the most noteworthy fractures of all, the dense piece of bone being cut completely out, almost as by an instrument. The greater part of the temporal bone of the left side—minus the petrous portion spoken of—has been separated from the other bones by lines of fracture running through the squamous part parallel to the suture, with parietal by-lines running down into the base and lines running fore and aft in the base. The zygoma on this side has been disarticulated from the malar and remains attached to the temporal.

3. *Damage to the face.*—Both zygomatic arches are destroyed, the right by fracture and disarticulation, the left by disarticulation only. The malar bone of the right side is separated from the superior maxilla by fracture through the maxilla just below the suture between the two. The superior maxilla of the right side is badly comminuted, the nasal process being completely separated and the antrum destroyed. The superior maxillæ are separated in the midline in front, and the fracture runs back through the palate on the right side. The left superior maxilla is also damaged, but not to so great an extent as the right. The nose is completely disorganized, all the bones being separated and more or less comminuted.

The internal angular process of the frontal bone on the right side has been broken off. (Great stress was laid upon this by some medical witnesses, as showing that a front blow had been struck, it being held that this fracture could not have been otherwise produced, looking to the condition of the skull as a whole.)

One very curious injury is a green-stick fracture through the left ascending ramus of the lower jaw. The break is from without inward, just across the neck of the articular condyle. There is no other injury to the lower jaw.

The ground taken by the Crown was that more than one blow was necessary to cause all the injuries found. The defence held that one crushing blow might have produced them, and that if more had been inflicted, the record was destroyed by the crushing force.—*Editorial.*

(3.) The author gives the history of an interesting case of fracture of the patella, and points out the difficulty of introducing the wire sutures in the operation of suturing that bone. This he overcomes by means of a flexible aluminum probe of such a size as to easily pass through the holes made by the drill. At one end there is an eye through which the wire is passed.

(4.) This is the third part of the report of the annual meeting of the American Public Health Association which was held in Montreal last Summer. Most of the papers are by Montrealers and synopses of many of them have already appeared in this JOURNAL.

(5.) Discussing Binz's well known and extreme contention that the administration of free iron is practically of little use to the organism, save as a protector to haematogen (or it may be more correctly according to McCallum to chromatin and the nucleins,) McCallum concludes that the contention is not borne out by experience and that some time stimulative alterative or protective action must be ascribed to the drug. Following upon this he criticises unfavourably a series of the iron preparations that have of late made their appearance—iron albuminate, peptonate of iron, dried ox blood, hæmoferrum and ferratin. He points out that, therapeutically, they have no greater value than oxide of iron. (He does not, however, enter into the discussion as to whether any of these preparations are more easily borne by the digestive system.) He is evidently inclined to look to preparations of nucleins from the animal body as affording the ideal iron-containing preparation of the future.

Kenneth Cameron.

Correspondence.

A LETTER FROM VIENNA.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

[CONCLUDED.]

It is generally agreed that the best instruction now afforded in the hospital is that in internal medicine and pathological anatomy. Many physicians come here, however, for general work as well as for courses in ophthalmology and in all the various specialties. The clinic of Professor Nothnagel is always crowded; the undergraduate and the practitioner of many years are seen together in attendance on his lectures, which during the winter semester open at 8.30 a.m. If you wished to know what characterized his teachings, no better answer could be given than is expressed in the term "clearness." Is it a cardiac murmur? He reproduces it from his own lips, giving tone and murmur its peculiar rhythm and quality. Is it a case requiring the qualities of respiration to be appreciated by his hearers, who indeed are not able to auscultate directly? He expresses this with remarkable accuracy, and as he thus makes clear such parts of a case the same faculty of presenting other features renders his instruction of highest value.

Professor Neusser, of the second Medical Clinic, is now in his first year as professor here, and his clinic is also very popular among the English physicians. It is in this clinic that our sister physicians receive instruction in internal medicine, as they are not admitted to the others.

It is said on pretty good authority that Vienna is not so advantageous for study as it was a few years ago, and at least two elements may be montioned as tending to this end. The privileges of attendants in the divisions of obstetrics have been denied in several directions; the same applies to gynæcology. Surgery has lost much in the death of Professor Billroth; but internal medicine under the direction of Professors Nothnagel, Neusser and Schrötter and Professors Weichselbaum and Kolisko, are quite up to the past high standard.

The physician who comes desiring courses in medical diagnosis is often compelled to wait many weeks before he is able to secure a place. Such courses are given by the assistants and are attended by

a limited number of men—never more than ten and generally limited to six men. A member, for example, may control a place for a year and perhaps only occupy it for a few months, having a substitute in his absence. These places are eagerly sought, and one needs to know some of the members in order to secure a place, as the instructors have nothing whatever to say in the matter of the composition of the class.

One cannot speak too highly of the facilities here for seeing pathological specimens and receiving most excellent demonstrations from Professor Kolisko.

The University lectures closed for Easter vacation on the 15th inst. The summer semester opens on the 22nd of April. In the meantime the assistants in the various clinics and private docents of University are giving courses

Several cases rare to us in America have come under our observation. Only to-day three were in one out-patient clinic.

Reference is made to tetany. Vienna is said to be the headquarters for this peculiar disease and March the most favourable time for its manifestation. Thyroid extract, which is having its trial in various, possibly toxic, conditions, has been recommended in some cases. Examples of tetany have been seen in pregnant women and those not pregnant, in middle-aged men, in shoemakers, in boy-apprentices to shoemakers, and in boys whose occupation did not seem to play any part.

The readers of this journal no doubt have been following the tests of the antitoxine treatment of diphtheria the world over. It may not be amiss to refer to it yet again in this letter and to furnish a few extracts of reports made by careful observers in Prague, Vienna, Leipzig and Heidelberg.

Perhaps the most enthusiastic advocate of the treatment is Professor Widerhofer, of St. Anis Kinderspital, Vienna, At the end of his report of one hundred cases, in the treatment of which only 24 per cent. proved fatal, he says: "What I have written I have seen, and what I have seen I believe, and so I fear no repeal or retraction." He lays special stress upon the early administration of the remedy, and claims for it most advantageous results in cases of unmixed infection. In 96 of his cases Lœffler's bacilli was demonstrated, while a considerable excess of streptococci over the Lœffler bacilli was observed in severe cases, five of which terminated in death. The ages of his patients were from one to fourteen years. Twenty-one per cent. of the whole number treated died under four years of age;

twelve cases died of laryngeal diphtheria, in all of which tracheotomy was performed.

Professor Monti, of the Polyklinik, has also given a report on the cases under his care up to January. He is also an advocate of the antitoxine treatment. As his statistics are not at hand the following points concerning the minor effects may be noted, as they were learned from him while observing some of his cases under treatment. He says:

1. Albuminuria invariably follows the injection of Heil-serum, but it is not a token of nephritis.

2. Erythematous rashes are common—a result of septic infection through the serum, but they are not dangerous.

3. Paralysis of the various eye muscles are observed. They are undoubtedly due to the serum, as

(*a.*) They are more common than in cases of diphtheria otherwise treated.

(*b.*) They appear on the third or fourth day of the disease.

(*c.*) When found so early the cases affected are only those undergoing the serum treatment.

With regard to the last point (3) some doubt is raised as to the fact, and as Professor Monti is the only one who has reported such cases of paralysis as far as observed, further evidence must be received to establish this action of the serum.

Professor Ganghofuer, of Prague, Franz Joseph Kinderspital, gave his report on the treatment of 110 cases before the Society of German Physicians of Bohemia in December. One-third of his cases had been treated with Aronson's serum and the remainder with Behring's. He remarks that no difference in the results was observable. A strong point is made in the effects seen in laryngeal cases. In his cases 44 were treated by intubation, 17 of which were in patients under two years of age, and the percentage of deaths is 23.3, contrasting most favourably with the reports of cases not receiving the antitoxine treatment in previous years, when from 50 to 75 per cent. expressed the mortality. In the reckoning of all his cases the percentage is low indeed, only 14 ending fatally of 110 treated, 12.7 per cent.

Speaking of cases of nephritis due to the heilserum he says: "I can therefore, neither on the ground of clinical observations nor on the finding in post-mortem examination, regard it as indicated that the serum treatment of diphtheria patients brings about a development of nephritis in the same."

Professor Soltmann, of Leipsic, while believing in the treatment and reporting favourably on his cases, raises the question as to the effects produced by the carbolic acid which is contained in the serum. He says, "Behring's heilserum is a carbol-heilserum."

Professor O. Vierordt, Heidelberg, has lately added his experience to the large number already published. His report is based on observations of 75 cases, 63 of which were undoubtedly genuine Loeffler bacilli cases. In order that fair showing may be given, or rather that reasonable conclusions as to the working of the serum may be drawn, he excludes from this number (63) 8 which are hopeless from coming under the treatment too late or from pulmonary complications. Thus the number is reduced to 55 cases of diphtheria due to Loeffler bacilli; the mortality is 14.6 per cent. Fifteen of his cases came under tracheotomy, and these show a mortality of 46 per cent. He remarks upon the favourable condition of the heart, the mildness of albuminuria, the absence of cases of paralysis, and the insignificance of secondary effects referable to the serum, as skin eruptions, joint pains, etc.

One view of this question may be presented. It gives us an idea, as far as statistics serve, of the results of the antitoxine. The figures are taken from the *Wiener Klinische Woehenschrift.* Combining many reports we find that up to a certain time, January, 1895, 3,888 patients had received the treatment; 716 died, showing a mortality of 18 per cent.; 29 observers report a mortality under 20 per cent., 10 between 20 and 30 per cent., and 3 between 30 and 40 per cent. Then taking the reports from different countries they show as follows: Mortality, Austria 14 per cent., Hungary 14 per cent., Deutschland 14 per cent, Italy 14 per cent., France 13 per cent., Holland 7 per cent., England 23 per cent., Berlin 17 per cent., Vienna 22 per cent.

We are anxious to see some of the work in the German institutions before returning home, so we are planning visits to Munich, Stuttgart, Erlangen, Heidelberg and Strasburg. And after a few weeks in London we hope to return to Canada, though somewhat sorry to leave the very instructive and withal attractive institutions of learning which are so numerous in the Old World.

W. F. HAMILTON.

MEMBRANOUS CROUP SUCCESSFULLY TREATED WITH ANTITOXINE SERUM.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

ESCANABA, Mich., June 24, 1895,

SIR,—With your kind permission, I desire to report a case of membranous croup treated successfully with anti-toxin serum. At 8.30 a.m. June 8th I was called to see a little girl, five years of age, ill with membranous croup. For some days previously she had been hoarse, and had a slight cough, but continued to attend school until the 6th inst., when she complained of shortness of breath. The dyspnœa continued to grow worse until I saw her. At that time there was considerable cyanosis, with frequent attacks of choking; the respirations were 36 per minute, and labored; the child only able to speak in a whisper; the pulse 120; the temperature 103° F. The tonsils were covered with a white membrane, which could not be separated without giving rise to slight hæmorrhage. There was no noticeable swelling of the glands. The parents stated that the child for the past 48 hours had had no sleep, except for a few minutes at a time. Although there were no other cases of diphtheria in the city, from the characteristic croupy symptoms, and the membrane in the throat, I had the house placarded as diphtheria, and informed the parents that I would return at 11 a.m., and use the diphtheria antitoxin, if I was successful in obtaining it. Fortunately I was able to procure an ounce of the precious fluid, costing six dollars. With an aseptic hypodermic syringe I injected three drachms deeply into the right gluteal region, covering the puncture wound with absorbent cotton and collodion, and over all an adhesive plaster.

Returning at 10 p.m., I was told the child fell into a quiet sleep about forty-five minutes after I left. She slept two hours, and her breathing appeared much relieved: but about 6 p.m. the breathing again commenced to be laboured. I found the respirations 28; pulse 120; temperature 101° F.; there was slight decrease in extent of the membrane. and she would occasionally cough up small pieces of it. I ordered 1-6 grain of calomel every three hours and an inhalation of steam.

The next morning at 9.30 o,clock I found her about the same, except that the membrane on the tonsils was gone, showing a congested appearance of the mucous membrane. I again injected two drachms of the serum. On my return at 6 p.m., I was told that she had dropped asleep half an hour after I left, waking up in two hours, and asking for something to eat. The pulse was 120, respiration 24, temperature 98.6° F. The breathing was now very easy and there was

very little choking. On the 10th of June I was called away, but my friend Dr. Rodger saw her for me, night and morning, and reported that beyond a slight barking cough, with which she brought up pieces of membrane, she seemed to be in a very good condition.

I saw her for the last time on the 11th, and found no evidences of her trouble remaining. The gluteal regions were even without soreness. I attribute this recovery to the effect of the antitoxin serum, for, during the past six months, I have had two other cases with similar symptoms, and both died, having been treated by the ordinary text-book treatment.

C. H. LONG, M. D.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Discussion on Erysipelas.

Dr. F. W. CAMPBELL said that an old friend of his always got an attack of erysipelas when he exposed himself to the north wind. He mentioned a few things in the way of local treatment which had not been referred to by Dr. Roddick, namely, lead, arnica and opium; and a form used by the late Dr. Crawford of this city, the application of tincture of iodine, and subsequent dusting of the part with flour to protect it from the atmosphere. He thought we had the power of limiting the disease by the application of the solid stick of nitrate of silver, although it occasionally failed. A local application of the liquid extract of ergot contracted the vessels over the part; an illustration of which had occurred to him during the last ten days. A child burned its big toe, it was neglected and erysipelas set in, spreading up as far as the knee, it passed the knee, got as far as the hip and was extending up the back. Ergot was applied at night with direction to repeat in the morning, but in the morning it was not required—the skin was shrivelled and dry. Dr. Roddick had approved of calomel, and gave 5 to 10 grains. He (Dr. Campbell) often prescribed 10 grains of calomel to a child 10 months old, and the result was only two or three medium evacuations.

Dr. BELL said the more one considers the subject, the more one is confirmed in the opinion that the disease erysipelas is dealt with in a most empirical manner. I am glad to hear Dr. Adami say that he believes and that many bacteriologists believe that erysipelas is only one of the manifestations of the presence in an active condition of the streptococcus. I think it is quite right to look upon cutaneous

erysipelas as a specific condition. Such cases are comparatively easy to deal with. There can be no question as to the advisability of isolating such cases; but when we come to deal with cases not quite so typical, when we come to deal with cases where the lymphatics beneath the skin are affected, we cannot fail to ask ourselves the question, what is the difference between this disease erysipelas and the lymphangitis which attacks the dissecting room student, the surgeon, or the butcher? And why should we insist upon isolating one form of streptococcus disease, that called erysipelas, and not isolate other inflammatory conditions which we attribute to the same coccus? The series of cases mentioned by Dr. Adami as having occurred in the Royal Victoria Hospital under my observation have already been reported by me to this society. Another series of cases reported to the Montreal branch of the Britsh Medical Association about a year ago was as follows: A woman recently confined by a midwife in a district where scarlatina prevailed died of purulent peritonitis, and a house-surgeon and a student became infected from her in the performance of their separate duties in the ward and post-mortem rooms, the one contracting an erysipelas, the other a subcutaneous lymphangitis. Then, again, there is a class of cases which I have several times observed: In cases of appendicitis ending in abscess, which makes its exit from the peritoneal cavity either by furrowing along the psoas muscle or in the tissues of the abdominal wall, it frequently happens that when such cases are operated upon and the abscess drained that during convalescence the patient is attacked by erysipelas which is again followed by pyæmia. Dr. Bell then mentioned the particulars of a case of this kind which when the abscess was opened and drained was followed in about three weeks by erysipelas about the wound, afterwards involving the face and finally ending in pyæmia. Another old patient admitted to hospital on February 1st, 1895, was operated upon February 11th and did very well after the operation. On the 28th of March pneumonia set in, followed on April 7th by erysipelas of the face. Later on he developed isolated patches of erysipelas over the abdomen. On the 20th of April (after the chest had cleared up and he seemed quite recovered from his pneumonia) he was isolated, but an empyæma developed and he died on April 25th. Now, when erysipelas is clinically interchangeable with these other conditions, I do not see how we can look upon it as a specific disease. I think the latter view is based upon obervations of too narrow a scope, that it is a premature conclusion drawn from insufficient data, and that the theory expressed by Dr. Adami, that erysipelas is only one of the evidences of the pathogenic qualities of

the streptococcus, will be found to be the more correct one. Compare this subject with our knowledge. past and present, of tuberculosis and tuberculous conditions. For instance, "white swelling of the knee" and scrofula, conditions which a few years ago it would have been ridiculous to regard as similar to pulmonary phthisis, are all to-day known to be manifestations of the same disease—tuberculosis. So I think in time we will come to regard all these diseases above mentioned (erysipelas, pyæmia, etc.) with others, such as œdema glottidis, angina Ludovici, and many of the so-called surgical or septic fevers as distinct manifestations of the effects of some micrococcus, or as the effects of this special micrococcus (streptococcus) alone or in connection with the other micrococci (the staphylococci, etc.) I will just mention here the clinical history of three cases of erysipelas which we had recently in the Royal Victoria Hospital. First, on the 7th of April the old man already referred to developed erysipelas. On April 4th there was admitted a man from the country who had a week or ten days previously injured his hand with the development of cellulo-cutaneous erysipelas of the hand. Within a day or two he developed metastatic abscesses, or a typical pyæmia with abscesses in the joints of the left hand. About the same time Dr. Buller did a plastic operation upon the nose of a patient in the same ward. Dr. Buller's patient was admitted on the 1st of February, operated upon on the 10th of April, and the onset of erysipelas on the 11th of April. Here this case of erysipelas was admitted on the 4th, the old man developed erysipelas on the 7th and Dr. Buller's patient on the 11th; now, just exactly which of these patients was responsible for introducing the disease is a problem. I am inclined to think from considering these old appendix cases, and the remarks made by Dr. Adami, that the old appendix case was the cause of inoculating Dr. Buller's patient. Then again in speaking of the interchangeability of this disease I forgot to mention the puerperal period. Dr. Baker, of the veterinary school, on Sunday night in delivering a cow which had been in labour for more than 24 hours and roughly handled by stablemen, noticed the animal's vagina in a swollen condition. In using a hook instrument for delivery he scratched the back of his hand; I saw it the next day. On Thursday night I incised his hand freely, not that there was then very great indication for it except to relieve pain. That same night, without any pressure being applied to the finger, it became black, gangrene set in and extended rapidly up the finger. The gangrene, however, was arrested, but the finger had to be amputated. Here, then, is a case of apparently rapid infection from the mucous membrane of the cow's vagina prior to delivery,

and therefore not a condition of puerperal fever, and was only brought about by bad management or unclean operators. Now everyone admits that the ordinary cutaneous and cellulo-cutaneous erysipelas is contagious, but I am inclined to think that the contagiousness of erysipelas is not so great as is generally believed. On the other hand, the deeper lymphangitis and many other forms of the so-called septic fevers, perhaps all of them, in which danger of contagiousness is not recognized at all, may, under certain conditions, be contagious, and possibly the difference between the contagiousness of erysipelas and of these other conditions is only a difference in degree and yet not nearly so great as is generally thought. As to treatment, I cannot say that I have any definite views as to what is the proper medicinal treatment at all. Of course the local surgical treatment and ordinary antiseptic treatment, so far as it can be carried out, is safe and rational.

Dr. ENGLAND wished to express his appreciation of the theory upheld by Dr. Adami. Everyone who had had a general practice, and thus an opportunity of seeing general septic conditions, including among them erysipelas, would see the *rationale* of the theory he presented. He could call to mind at least three or four similar cases to those narrated by Dr. Bell—namely, a septic wound to be followed by a pneumonia, then by facial erysipelas, and finally ending in pyæmia and death. All these conditions arising from a simple abrasion of the skin. So also, between puerperal fever and erysipelas a relationship exists, so much so that careful physicians gave up accouchement work when attending erysipelas. The streptococcus of erysipelas introduced through abrasions in the vagina into the puerperal woman will set up a most severe and generally fatal general septic infection —a progressive sepsis without erysipelas about the genitals showing itself. From his clinical experience, this definition given to the disease by Dr. Adami, not limiting the inflammatory process to an inflammation of the skin and mucous membranes, but considering it in a wider sense, seemed more rational. He further mentioned that he had seen two cases of facial, erysipelas run an ordinary course of moderate severity, although occurring during the first week after delivery without any special symptoms bearing upon the generative tract.

Dr. BULLER, speaking in regard to the case referred to by Dr. Bell in which erysipelas developed after a plastic operation said that the first operation in this case had been an extensive one and was followed by no bad results; the second operation had not been so extensive, and although performed with all the usual anti-

septic precautions, erysipelas followed. He looked upon the nasal organ as especially liable to take on erysipelas action. This man, referred to, must have inspired the erysipelas poison; there was no sign of erysipelas in the wound itself, but the skin of the nose, quite apart from the wound, was the first place in which the disease made its appearance. It was a well known fact that people who had any slight solution of continuity in the nasal mucous membrane were very liable to take erysipelas. Another point in this connection was that one occasionally met with erysipelas of the face in which the disease extended to the orbit, after the manner of deep-seated or phlegmonous erysipelas and caused pressure upon the eyeball and optic nerve, commonly ending in blindness. In this case, he had excavated considerably into the orbit, and exposed the orbital tissues pretty freely; but although the erysipelas spread over the region of the wound it did not enter the orbit. He thought this was an indication that there might possibly be some difference between the germ action which was necessary to set up a deep erysipelas and the germ action which sets up the cutaneous variety. Although this man seemed to have contracted his erysipelas from the deep variety of the disease, the kind he had was cutaneous, and he was not affected by the deep kind. Perhaps he had no special susceptibility for the deep erysipelatous action and therefore it was impossible for him to contract it. In reference to erysipelas in the different seasons of the year, Dr. Buller met with most of his cases in spring and autumn. Whatever may be the cause, it must be very widespread; erysipelas occurred in houses where the individuals were perfectly healthy, one member catching it and the others entirely escaping. Sometime ago he saw a child who had erysipelas following a slight ulceration of the margin of the lid; it came into contact with no other case of the affection, and therefore must have received the poison through the atmosphere. Whatever the poison was it must be very widespread, else the sporadic cases could not be accounted for.

The PRESIDENT referring to the remarks of Dr. Roddick as to hot moist applications being advisable, and Dr. F. W. Campbell's recommendation of dry application in the form of flour, said he remembered some years ago, in 1854, in Saint George's Hospital, a large number of cases of erysipelas occurred, in fact the disease followed almost every operation, until at length the authorities were forced to close up the infected wards. It had been the custom to have these wards washed out every morning. They now, after closing them, caused the walls and floors to be freshly painted and dry rubbed. They were then opened and no more cases of erysipelas occurred. It was im-

possible to say positively that the moisture, involved by the daily washing, had the effect of keeping up the affection; but he thought it likely that it had a tendency that way, as moisture was one of the conditions of growth of bacilli, and it was possible that it should also have some influence in the treatment. The manner in which the disease extends, leaving the central part and spreading around, reminds one of what was seen in fields in the shape of the "fairy ring"—always growing larger and larger, but never growing on the same spot a second time. It may be possible that this streptococcus, like the fungus of the fairy ring, after growing a certain while produces something which prevented its developing any further in that particular spot.

Dr. ADAMI—Dr. Mills wished to know if other germs could be excluded as producers of erysipelas. We can occasionally get slight reddening in connection with germs that are not chain cocci. For instance, in cases of ordinary abscess, one gets a certain zone of reddening, and apparently cutaneous and lymphatic disturbance in the region of the abscess. One, therefore, can get a certain blush in the neighborhood of an abscess caused by the pyococcus. This is about all that can be said on the matter.

With regard to Dr. Buller's case of want of extension to the parts deep in the orbit, I will point out that by cutting across the lymphatics he may have interrupted the flow of lymphanoids. The cocci are themselves immovable, and are either conveyed by direct growth in stagnant fluid or along currents, not to any extent against those currents. Possibly extension would in any case be less likely to occur deeply. I only throw this out as a suggestion.

I cannot agree with Dr. Roddick that the streptococcus of erysipelas is specific. I will admit that it is peculiar; but not that it is specific. I think we are now on the eve of regarding the series of suppurative diseases due to the chain coccus in the same light as we do now regard the whole group of diseases due to tuberculosis. Some years ago one would be regarded as foolhardy who stated that white swelling of the knee, or lupus, were not specific and distinct diseases.

What has been said with reference to the iron treatment of erysipelas reminds me vividly of an incident while I was still "walking the hospital" at Manchester. I was making the rounds with one of the surgeons and he came to a stand before a convalescent patient. "Gentlemen," said he, "let me once more impress upon you that tincture of the perchloride of iron is a specific for erysipelas. You see here my fortieth case in succession treated thus without a single death." One

of the physicians who had been called in to examine a patient for admission to the medical side happening to hear the statement came across the ward at this, and beckoning the surgeon to one side, said to him sufficiently loud for me to hear, "My dear W——, what an odd coincidence! I had begun to doubt the efficiency of iron and have been treating erysipelas with simple rest in bed and aperients. I've just had forty cases also on this treatment—without a death!"

The treatment mentioned by Dr. Campbell of ringing or delimiting the advancing margin by the application of lunar caustic is undoubtedly sometimes effective, and it may be worth while here to give Sims Woodhead's explanation of the *rationale* of the process As I said before there are in the reddened erysipelatous area numerous leucocytes together with destruction of the cocci; in the zone outside this one finds cocci without any excess of leucocytes. The application of the caustic in this outer zone sets up a simple inflammation with migration of leucocytes and presumable destruction of the cocci. I would suggest that, bearing in mind the fact that chain cocci may be found more than an inch beyond the reddened margin, the line of application should be painted at least one inch and a half outside that margin, thus enclosing the living active cocci between two barriers of typical inflammation.

What I have said previously concerning saprophytic existence of the streptococci on the skin and mucous membranes is not peculiar to this one organism. Very numerous observers have similarly discovered the pneumococcus, the diphtheria bacillus, the bacillus pyocyaneus, and yet other organisms capable of producing well marked lesions within the tissues of the body upon the skin and mucosæ of those that are perfectly healthy. In fact the diplococcus of pneumonia has been found by Sternberg as an inhabitant of his sputum for months at a time, and this is true for the sputum of 15 per cent. more of healthy individuals.

Dr. HINGSTON, in reply, said the tendency of the best medical minds to-day is to synthetize rather than to analyze; to group together diseases having features of affinity, rather than to separate and create new diseases which have certain lineaments or single parts which seem to be different from the general outline. I am inclined to think there are many in this room who will live to see diseases grouped together on a large scale—very large groups brought under one head, like those groupings of Erasmus Wilson in skin diseases, where he reduced the whole of them with all their chief distinctions to three or four heads, for therapeutic purposes. And thus it may be that erysipelas may come to be considered as simply a form of inflamma-

tory action modified by conditions proper to the patient, either in his constitution or in his surroundings. I have had some personal experience of erysipelas in my own person; it has, in fact, been my *bête noir*, having had any number of attacks. The worst one was from a little scratch of a razor. As soon as I was dressed I started off on a long journey in winter time. The weather was extremely cold. I travelled incessently, changing horses three times. As a cold wind was blowing from the north I must say if erysipelas arises from a living bacterial principle outside of the body it must have taken up its abode on this occasion in the otherwise pure north wind and have pounced down upon the razor scratch like a hawk upon its quarry, as I had symptoms of the disease before the end of the journey. If the microbe crawled up from his habitat in the mouth or nostril then must its power of resisting existing cold have been very great. On another occasion, on removing my eye-glass, I made a little scratch, which was followed by an attack of the disease. The beak of a bird on another occasion brought on this trouble. With many attacks of this affection, arising in a variety of ways, I have had some little experience as to the treatment and as to the comfort afforded by different local applications. I have tried many things which either my friends or my own experience could suggest. Unctuous applications afforded no relief; the old-fashioned flour gave most ease; but the suspicion crossed my mind that it was not the flour, but the firm yet gentle mechanical pressure with which it was applied, that gave relief. The application of a little soft rag without the flour gave me the same amount of relief and for an equal length of time.

As to the question of the contagiousness of erysipelas, some seem to think the matter settled. Whether so or not, the most prudent thing is to act as if it were highly contagious, and not to put patients, after an operation in the neighbourhood of those who have or have had erysipelas. In reference to treatment, two gentlemen spoke of the value of certain purgatives. I have a very strong feeling which I cannot emphasize too forcibly, that purgatives should not be given in erysipelas. A dose of castor oil may be given at the beginning as a laxative, but not afterwards. We know that in certain fevers the exhibition of purgatives is objectionable. I have known again and again erysipelas to return when purgatives have been taken after the disease had seemingly subsided. The food should be nutritious and abundant, but as to liquid meats, such as broth and beef tea, I deny that they are foods at all. That, perhaps, may appear heretical to some, but on this question I am in harmony with an expression of

opinion given before the British Medical Association some fifteen or more years ago, when the chairman of a committee appointed the previous year to enquire into the value of liquid meats gave, it as the unanimous conclusion of the committee, after some crucial experiments, that liquid meats—or meats in suspension—not solution—are valueless as life or heat sustaining. On this question I share the opinion of the late Dr. Parker, of New York, when he said meat broths and meat teas and meat essences when drank are as useful to patients as their own urine. In conclusion, Dr. Hingston referred to Dr. Buller's proposition to plug the nares for the purposes of preventing the entrance of the streptococcus through that channel, and said he thought it would not be effective, as the connection existing between the buccal and nasal passages behind, would neutralize the desired effect when the patient was compelled to resort to mouth breathing,

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Stated Meeting, May 17th, 1895.

G. P. GIRDWOOD, M.D., PRESIDENT, IN THE CHAIR.

Scurvy

Dr. H. A. LAFLEUR exhibited a man suffering from this disease.

The PRESIDENT said that he had met with a number of cases of scurvy during the construction of the Canadian Pacific Railway, where the diet had been mainly "hard tack" and salt meat. Better diet and salts of potash had soon effected a cure in these cases.

Dr. H. A. LAFLEUR drew attention to the fact that the eruption in this case was limited to the hair follicles, a point which Fagge held to be diagnostic of the disease.

Excision of the Ankle.

Dr. BELL showed a man 29 years of age, who was first admitted to the General Hospital in 1892. Four days prior to his admission a hot iron penetrated the inner side of his heel; he bled a good deal and it was thought that the posterior tibial artery was injured. When admitted he was suffering agonizing pains, which continued for some days afterwards. In a few days it became evident that it was a septic arthritis, involving principally the astragalo-tibial joint, and an abscess formed under the external malleolus. Under these circumstances I first tried opening and draining the cavity, but without relief, and it became necessary to excise the joint in order to secure proper drainage. The astragalus, the scaphoid and the ends of the tibia and fibula were removed. These were the only bones appearing

to be involved in the septic process. Even then he had serious trouble and was a long time getting well; the suppuration was very active and the case gave me a great deal of anxiety. He was finally, a couple of months later, discharged from the hospital, and I have not seen him since till to night. The foot looks very well, but he says it pains him a great deal after walking any length of time.

The other patient is a little girl ten years of age. On the 1st of January last she scratched her heel. On the 10th of February this was chafed by wearing a tight boot in walking, which set up an inflammatory condition. On the 18th of February she was admitted to the hospital, and the next day free incisions were made over the foot and leg. A condition of deep cellulitis was present about the joint. I did not discover at that time that the joint was involved, but it soon afterwards became evident that the ankle joint was eroded, and on the 9th of March she was accordingly prepared for operation. It was found that the disease was much more extensive than originally thought; it was necessary to dissect out the astragalus, scaphoid, most of the cuneforms, and to remove the ends of the tibia and fibula above the the articular surface. This patient also got on rather badly afterwards, it being likewise an acute suppurative condition, but not nearly so bad as the first patient, for the reason that so much bone having been dissected away there was a much freer drainage. She is now about ready to be discharged from the hospital. The pathological examination at this time showed the presence of staphylococcus pyogenes albus.

This demonstrates that the ankle-joint must be an exceedingly bad one to make it necessary to amputate the foot, as long as the disease does not extend below the astragalus or scaphoid.

The patients having then left the room, Dr. Bell proceeded with his remarks as follows:

It seems to me that the condition of things in this man is due to his inability to fully flex the foot, and that it might be easily remedied by taking away a little more of the ends of the tibia and fibula thereby allowing of freer movement of the foot. The specimen before you is the case which induced me to bring these cases before you to-night. This patient came to me in 1890 with an acute tubercular condition of the ankle-joint; he came to me with the intention of having his foot amputated, his doctor having advised such a step. I, however, advised him to have excision done instead. In July of that year I excised the astragalus, scaphoid and the articular surfaces of the tibia and fibula, with some portions of the horizontal surface of the os calcis. He got on remarkably well for three years, and he

used to write me that he could skate and waltz as well as anyone. In October, 1893, he returned, complaining of pain, and again determined to have his foot amputated. I persuaded him again, as a compromise, to allow me again to open at the original incision, and if I thought it possible to save the foot I might do so, if not I was to amputate. On reopening the original incision I found no unhealthy tissue, except those old conditions generally found in the hip-joint after spontaneous recovery. That was removed and he made a rapid and uneventful recovery. He returned again about three months ago, and this time was determined to have it amputated. He said he could not walk more than a mile before the foot gave him pain, and he was very much enamoured with the idea of having a cork foot. After considering the circumstances I refused to amputate, advised him to have it put up in plaster and wait a year before doing anything further. Three weeks ago he again returned with all sorts of arguments for the removal of the foot. He was determined to have the foot off. As I could find no evidence of disease, I was very much opposed to amputation, but I felt it was impossible for me to properly estimate his sufferings, and as he insisted that the foot was useless to him, and I could not negative his statements, I referred him to Dr. Roddick for consultation, and on thinking it over we decided to amputate the foot. Now it is perfectly evident after the removal of the foot that there is no disease whatever—none, at any rate, that is apparent to the naked eye. Now, I believe this man's suffering was exactly on a par with the sufferings of a man with flat foot. He was an active fellow and would not be satisfied with anything else than the full use of his limb. The pain was due to the weight of his body being borne on the outer side of his foot and the loss of elasticity in the instep due to the excision. This has led me to think of one or two other cases where excision has not given satisfactory results. A case shown here to-night, and a case in which the foot was afterwards amputated by Dr. Shepherd. Another case in which a girl did remarkably well and was very proud of her useful foot, until about six months afterwards she developed acute tuberculosis and died of meningitis. It is the after results in these three cases which has led me to bring up this subject to-night. I may say, however, that although the results in these cases have been somewhat unsatisfactory, it does not in the least change my opinions in favour of an excision of the joint as an alternative to amputation. Now, this little girl, and several other cases I have had, have been the result of acute suppurative disease, not due to tuberculosis, and these give the most satisfactory results. Of course most of these cases requiring excision are cases of

tuberculosis, and in these of course we have to deal not only with the actual condition in the limb, but the general systemic disease, and the question is whether it would not be better to amputate for the purpose of more effectually eradicating the disease and preventing the development of tuberculosis elsewhere, In any case in excision of the ankle-joint it is most important, as is well shown by the cases exhibited to-night, to secure a proper position of the foot and a sufficient amount of mobility at the ankle.

Dr. ARMSTRONG spoke as follows: The question of excision is of course very hard to discuss without some specific case before us; it must be determined by the amount of destruction in the joint. It is better, when possible, by multiple incisions, thorough opening up of the parts with irrigation, gauze packing and drainage, to tide over until the septic condition has disappeared, when the excision may be completed with better prospect of getting a rapid and satisfactory result. It is always difficult to obtain a good result when a septic condition is present. Of course you must get perfect drainage or the operation will not be successful. As to the question of excision in tubercular cases, if the disease is at all localized I consider this operation preferable to amputation. Of course if the whole tarsus is involved it might be doubtful, but given a fairly well nourished patient with good recuperative power and not too extensive disease, I certainly should prefer excision to amputation. One point with regard to these operations is that although we sometimes do excisions in the small joints and allow them to heal with blood-clot, in the ankle joint this seldom succeeds, and it is better to pack and allow it to close up. The space in the ankle-joint is too large, whereas in the small joint you can probably get an aseptic clot.

Dr. BELL said the excision here was simply done for drainage and only as a temporary measure, but the man got well, went away and would not consent to any further interference.

Hernial Sac Reduced "En Bloc."

Dr. BELL presented the specimen and related the following history: The patient, a man 65 years of age, had had inguinal hernia for some years; one week ago last Sunday in trying to reduce his hernia the lump disappeared and did not come out again after that. He was immediately taken with pain and vomiting. This condition continued all Sunday and Monday and on Tuesday he arrived at the hospital in a moribund condition. There was stercoral vomiting and great lividity and I decided to operate immediately. I found about two and a half inches of the ileum caught in this ring. There was no tumour at all appreciable and I consequently cut down in the middle

line. It was easily withdrawn from this ring, and although incarcerated it was not strangulated. I found the bowel beyond the hernial inclusion in a very much contracted condition; also the bowel a few inches further up showed signs of recent adhesions, probably the result of some recent incarceration.

Another case came under my observation in May, 1890. A man 59 years of age who had double hernia for sixteen years returned it in this way. He had noticed, however, that he had frequently returned it and it gave him great pain, vomiting, etc., and he used to walk about until it came down again, when he got relief and he could afterwards return it in the regular way. On this occasion, five days before he came to the hospital, he returned it and these bad symptoms followed. All his efforts to get it to come down again were in vain. Upon opening the abdomen I found practically the same condition as here described. In the course of convalescence he had a fæcal fistula, but he ultimately got well. These are the only two cases of this kind that I have seen. When one sees in operations for hernia that there is a large mass of omentum adherent to the sac and yet does not draw up the whole sac, it does seem strange that an ordinary small hernia can be reduced in this way. Recent works on hernia are all taken up with the operative treatment of the subject. In Lawrence's work, however, he mentions these cases and arrives at the conclusion that they must be extremely rare. He also arrives at the conclusion that this condition can only occur in a particularly free and open canal, and in which there is a fibrous contraction of the ring and in which the parts are lax and allow of free movement of the sac upon the more resisting tissues. That is the condition in these two patients, both old men, slight and spare, and certainly a dissection of this case showed it was very freely movable indeed in the cellular tissue.

Dr. ARMSTRONG thought this was a case of pro-peritoneal hernia, sometimes due to wearing a badly fitting truss or an undescended hernia, the truss gradually working the hernia back from the transversalis fascia, and thus it got caught.

Another important point was to interfere almost as soon as symptoms appeared, although the tumour might be entirely gone. When the symptoms existed it showed that there must be some obstruction remaining unrelieved which demanded further operation. Quite a series of cases enumerating symptoms which persisted after operation, even though no tumour existed, and required further interference, has been reported. An exploratory abdominal incision was generally demanded and the treatment of whatever condition found.

Aneurism of the Lower End of the Thoracic Aorta.

Dr. J. G. ADAMI exhibited the specimen, a report of which will be found on page 93.

Aneurism of the Renal Artery and Partial Double Ureter.

Dr. E. P. WILLIAMS showed the right kidney of an old man who died of pneumonia. He had used alcohol in excess. Two ureters left the kidney, which had no true pelvis, and united a short distance above the bladder. The superior branch of the renal artery exhibited a small, round, sacculated aneurism, with partly calcified walls, which was about fifteen millimetres in diameter. There are no specimens of these aneurisms in the McGill museum, and no notes of any similar cases at the hospital. The kidney showed slight nephritis and the other arteries were athromatous.

Appendicitis.

Dr. E. P. WILLIAMS related the following case of appendicitis which is interesting on account of its early history. A little girl, eleven years old, fell and struck her right side above the crest of the ilium. This region was painful and the child looked unwell, but made no complaints for a week, when she was knocked down at school and again hurt her side. In trying to walk home she fainted by the way, vomited, and arrived home with a violent headache, feeling unwell for the rest of the day. For three or four days she limped about and finally I was asked to see her on account of the lameness. I found the muscles above the crest of the right ilium somewhat tense and slightly tender on pressure—nothing further. A day or two later she complained of pain in the right knee. It was very sensitive, and when moved gave great pain—no redness nor swelling. Temperature 104°. The pain in the side continued. Salicylates were given, and on the following day the temperature became normal, the knee was not painful, but the muscles over the ilium were more tense. On the following day this firmness of the muscles was distinctly limited anteriorly by a line drawn from the tip of the eleventh rib to the centre of Poupart's ligament. The fingers could apparently pass over and grasp this firm edge, while posteriorily the feeling of resistance extended to the lumbar spines. Very slight dulness was distinguished.

The following evening the temperature rose to 103½, and the pulse to about 120, and a sudden attack of epistaxis occurred, followed by vomiting of the blood which had been swallowed.

Dulness was marked and a tumour, limited anteriorly as before, was found to extend towards the iliac fossa. Tenderness was most acute at McBurney's point. On consultation with Drs. Shepherd and

Kenneth Cameron an abscess, probably connected with the appendix, was diagnosed.

The child was taken to the General Hospital and Dr. Shepherd operated. A large abscess cavity was found between the cæcum and the abdominal wall, above the anterior superior spine of the ilium. The appendix had ruptured near the gut, and evidences of old inflammatory adhesions were present. The streptococcus pyogenes and b. coli commune were isolated from among other bacteria in the contents of the abscess. Recovery quickly followed. It was found out afterwards that the child had formerly had numerous attacks of colic.

Stated Meeting, May 31st, 1895.

DR. G. P. GIRDWOOD, PRESIDENT, IN THE CHAIR.

Infection in the Dentist's Chair.

DR. G. E. ARMSTRONG read a paper on this subject, which appeared in the July number.

The PRESIDENT, as an instance of the antiseptic properties of saliva, mentioned the well-known habits of dogs licking their wounds and continuing so to do until the latter were healed. If this practice was not a proof of the antiseptic properties of saliva, he certainly thought it was proof against its being a very infective fluid. He enquired whether in the first case, in which the glands about the neck were not enlarged, the alimentary glands showed any enlargement; and if they did not, how the connection between the poison in the mouth and that of the kidneys could be explained.

DR. MILLS considered it remarkable that more cases of infection of the kind described in the paper had not been recorded. He was surprised considering the rapidity with which most of the digestive juices fermented, to hear that saliva was a germicide.

DR. T. D. REED questioned whether dental neglect was the cause of the trouble in the cases reported. One patient originally had some throat trouble that might also have been a cause.

DR. ARMSTRONG, in answer to the President, said of course the case might be viewed from two stand-points: from the clinical, infection was undoubtedly through the mouth; she had an extremely fetid foul mouth and there was no other evidence of trouble; that is the lungs, heart and urine were normal. There was no evidence of anything else to cause this high temperature and septic condition, except this stomatitis. She had not been taking medicine of any kind; and it seemed quite possible that the streptococci found entrance through the mouth. Of course he could not say that the forceps were the

cause; but he thought that possibly, if the forceps had been sterilized, the field of operation cleansed, and a mouth wash used for some days afterwards, the result might have been different. At any rate his object was to show that there was greater necessity for the application of antiseptic principles in doing operative work about the mouth than upon the skin, because in the former place bacteria had a better field to thrive in. With regard to whether the infection came from the intestinal canal, the view that ulcers were in the digestive tube and these inoculated the traumatism of the gums, might be held, but against it was the evidence that streptococci were found in the spleen and kidneys as well as in the mouth, whereas, if the infection originated from the intestinal ulcers the bacillus coli germs would certainly be found.

Double Coronary Arteries.

DR. E. P. WILLIAMS showed a heart in which the left and right coronary arteries each presented two origins, side by side, instead of one.

Experimental Cerebral Localization.

Dr. WESLEY MILLS presented the brains from the dog and cat exhibited at two previous meetings (see pages 937-938 of the June number. He showed the portions of cerebrum removed, which he stated constituted the whole of the supposed motor area for these animals. He considered this experiment to bear out what Goltz had pointed out, that dogs were not completely and permanently paralyzed by ablation of the motor areas in the cerebrum.

Dr. T. D. REED asked if the position of the centers had been determined by electrical stimulation and complete removal verified by the failure of contractions to take place after the operation.

DR. MILLS, in reply, stated that this had been done on one side only, but that even after complete ablation the application of the electrode would still be apt to cause contractions by affecting the white fibres.

Cystic Ovaries.

DR. T. JOHNSON-ALLOWAY exhibited two ovaries which he had removed that morning, and which were somewhat of a pathological curiosity. Both, and especially the right, were so distended with a peculiar formation of small cysts as to resemble miniature bunches of grapes. He thought they resembled the condition described as "Roketansky's Tumours."

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RECIPROCITY OR DOMINION REGISTRATION.

At the coming meeting in Kingston of the Canadian Medical Association a committee appointed last year, will report on the important questions of Reciprocity and Dominion Medical Registration. What the result will be, it is difficult to predict. Much will depend on the humor of the delegates from the various provinces, comprising the committee. Judging from the tone of the discussion on this subject, at the meeting of the Ontario Medical Council, the other day, we fear that the representatives from that province will again demand more than those from the Province of Quebec at any rate will be prepared to grant. It will be a great pity if some definite understanding cannot be arrived at on these important questions. Reciprocity would answer the purpose for the present. There is already an understanding between Quebec and Manitoba, so that the licenses granted by the boards of these respective provinces allow candidates to practise in either without further trouble. Quebec and New Brunswick had a similar understanding, up to a short time ago, when some irregularities occurred, and they no longer reciprocate. Reciprocity would be specially desirable between the great provinces of Ontario and Quebec; both because of the larger population in these provinces, and the very great length of frontier line. Does it not seem absurd that a medical man cannot cross the River Ottawa, to attend an urgent call, and perhaps save a life, without making himself liable to arrest and fine? Such, however, occurs constantly, and must have the effect of lowering the profession in the estimation of the public, giving them the impression that we are a narrow-minded lot. It is not generally known that even between France and Germany—countries always most unfriendly in other respects—a neutral territory is established, extending for fifteen miles on either

side of the boundary line, which can be traversed without molestation by medical men of either country in the discharge of their professional duties. Let us hope that the members of the committee referred to, and the Association generally, will meet this question in a loyal and fraternal spirit; so that some amicable and practical understanding may be arrived at.

Some form of Dominion medical registration would of course be the ideal thing, but we fear that that must be delayed until reciprocity has been in operation long enough to satisfy the public and the authorities at Ottawa that we are united as a profession on this subject. The late Sir John Thompson is known to have held the opinion that, while in accordance with the British North America Act, all questions of education were relegated to the various provinces, it was possible to have a Dominion examining board and board of registration, providing only the profession representing the various provinces were unanimous in their presentation of the case to the government in power. This would not necessarily interfere with provincial rights. Each province should, if so disposed, still have its own examining or licensing board, or both, for the purpose of examining and licensing candidates who were going to be satisfied to practise in the limited sphere of that province. More ambitious candidates would prefer the stiffer examination of the Dominion board; but they would have the supreme advantage of being permitted to practise in any part of the British Empire. It is rather galling to the Canadian to find the Australian graduate in medicine settling in London without further examination by simply paying his registration fee. The Medical Council of Great Britain will give us the same privileges as soon as we shall have arranged some form of federal registration.

THE UNFORTUNATE CONSUMPTIVE.

Reports reach us constantly of the hard treatment to which those suffering from pulmonary tuberculosis are subjected. The hotel-keepers at the various winter resorts on this continent and in Europe seem to be vying with each other in their coarse and almost brutal crusade against the unfortunate consumptive. They advertise openly to the effect that "No consumptive need apply," and the room clerks have in many hotels distinct orders to use their diagnostic powers in the case of all those seeking accommodation. Can nothing be done to combat this feeling and protect these people from insult and possible injury? Have we as a profession been airing our views too loudly on this pet subject?

CANADIAN MEDICAL ASSOCIATION.

We have been favoured by Dr. Starr, the Secretary, with the following list of papers and addresses to be read at the coming meeting in Kingston :

President's address—Wm. Bayard, St. John.

Address in Surgery—I. H. Cameron, Toronto.

Address in Medicine—Edward Farrell, Halifax.

Skin clinic—J. C. Graham, Toronto ; F. J. Shepherd, Montreal ; L. Duncan Bulkley, New York.

Physical development and training as a therapeutic measure—B. E. McKenzie, Toronto.

What is the best treatment for the retroversion of the uterus ?—A. Lapthorn Smith, Montreal.

A tumour of the medulla oblongata—J. E. Graham, Toronto.

Report of a case of acromegaly—F. Buller, Montreal.

Notes on typhoid fever in private practice—W. S. Muir, Truro, N.S.

Objective noises in the head—G. Sterling Ryerson, Toronto.

Some practical notes on mental depression—J. V. Anglin, Montreal.

The operative treatment of injuries of the head—A. J. McCosh, New York.

Discussion : James Bell, Montreal, Geo. A. Peters, Toronto.

Final results of gastro-enterostomy—Robt. C. Kirkpatrick, Montreal.

Dysmenorrhœa, report of a case—J. Campbell, Seaforth, Ont.

The importance of early treatment in cutaneous cancers—A. R. Robinson, New York.

The anomalies of albuminuria—Jno. R. Hamilton, Port Dover.

Double orchidectomy in enlarged prostate—E. E. King, Toronto.

Experimental cachexia strumipriva—Wesley Mills, Montreal.

Notes on some of the newer remedies used in skin diseases—L. Duncan Bulkley, New York.

Discussion led by ——— ———

Acute uræmia followed by gangrenous abscess of lung. Appendix abscess discharging through a bronchus—A. McPhedran, Toronto.

Report of a case of spina bifida—J. S. Bray, Chatham.

Thyroid feeding in cases of stupor—C. K. Clarke, Kingston.

Syphilitic manifestations in the eyes—Alfred J. Horsey, Ottawa.

The ophthalmometer—R. A. Reeve, Toronto.

Notes on a case of brain tumour, with an account of its removal—I. Webster, Kingston.

A case of placenta with hydatids ; fœtus with spina bifida—Alex. Bethune, Seaforth, Ont.

The relation of insanity to general diseases—E. H. Stafford, Toronto.

——— ——— S. L. Currie, Cambridge, Mass.

Notes on a case of hernia of the vermiform appendix—R. W. Garrett, Kingston.

——— ——— W. W. White, St. John, N.B.

Some unusual forms of hernia—F. J. Shepherd, Montreal.

Cases in practice—W. G. Anglin, Kingston.

Operative treatment in moveable kidney—James Bell, Montreal.

Asthma—H. J. Saunders, Kingston.

Excursion at 2 p.m., August 29th, by steamer "America," through Thousand Islands; luncheon on board.

OUR NEW SERIES.

The first number of the new series of this JOURNAL issued last month has been well received. We have had numerous congratulatory messages from our friends and subscribers, and on the whole feel very much encouraged. Among those who have promised help in the way of contributions is our esteemed friend and late colleague, Dr. Osler, who, after the New Year, will contribute two or three pages each month under the title of "Ephemorides." We look especially to the graduates of Old McGill for a hearty support.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The fifth annual meeting of the American Electro-Therapeutic Association will be held in Toronto on Tuesday, Wednesday and Thursday, September 3rd, 4th and 5th, 1895. We understand that for the convenience of those who desire to attend this after the meeting of the Canadian Medical Association in Kingston the preceding week, satisfactory arrangements have been made with the railways. Dr. Lapthorn Smith is to be the presiding officer this year.

—F. W. Skaife, D.V.S., McGill, has been appointed Dean of the Faculty of Veterinary Surgery in the University of California, San Francisco.

—Dr. Roux has been recently presented by the Municipal Council of Paris with a medal for his original researches on diphtheria and the discovery of the antitoxin.

—Lord Houghton, on retiring from the post of Lord-Lieutenant of Ireland, conferred the honour of knighthood upon Dr. Christopher Nixon and Mr. Thornley Stoker, of Dublin.

—Professor Huxley, who died recently, was better known as a scientist than as a physician. After graduation he entered the navy, and it was while abroad on a cruise in the "Rattlesnake" that he first developed that taste for natural history which subsequently made him so famous. He was once a candidate for the chair of Natural History in Toronto University. What a prize was lost to Canada!