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Original Communications.

LAMINECTOMY FOR FRACTURE-DISLOCATION IN THE CERVICAL REGION.*

By FREDERICK WINNETT, M.D., M.R.C.S. ENG.,

Demonstrator of Anatomy, Toronto University; Surgical Registrar, Victoria Hospital for Sick Children; Surgeon to Home for Incurables.

STUART P—, æt. 29, while bathing at Niagara-on-the-Lake, about noon, July 18th, dived from a pier and sustained a fracture of the cervical vertebræ. Running ten or fifteen yards he dived from the pier about three feet above the water, which was not more than four feet deep. His head was seen to strike the sand, doubling under him, and his body float to the surface. When rescued, he said he experienced a terrible shock through his body, and that he had hurt his neck.

In the evening a consultation was held, there being present Drs. Anderson, Oldright, Peters, Ross, and myself; and an operation advised.

*Read before the Toronto Medical Society, Dec. 13th, 1894.

His condition was as follows :

Mind perfectly clear.

Sensation normal as low down in front as nipples and shoulders.

Tactile sensation was present, although indistinct, over the remainder of the surface, with the exception of forearms and hands. Contact of clothes was hot and painful.

Sense of pain was absent.

There was retention of urine, and fæces passed unconsciously.

Pupils were contracted.

Some irregularity of the spines of fourth and fifth cervical and tenderness were noted.

All the muscles below the neck were paralyzed, with the exception of the diaphragm.

On the following morning I assisted Dr. G. A. Peters to perform laminectomy. The patient was turned well on his right side, and in order not to embarrass the movements of the diaphragm pillows were placed beneath chest and hips. His head was supported with sandbags. The neck having been shaved and washed with a solution of carbolic, an incision was made from above down over the spines for about three or four inches, with its centre over the fourth or fifth spine. The spines and laminae were quickly cleaned. The supraspinous ligament between fourth and fifth vertebræ was found ruptured, spine of fourth bent to the left, and lamina of fourth on left side fractured. The edges of the wound were drawn apart with retractors, while the lamina of the fourth on right side was partly divided with Hey's saw and completed with the bone forceps. The soft structures were divided, and with necrosis forceps the spine and laminae were drawn forcibly away. This exposed the cord surrounded by the membranes, which appeared healthy. As the membranes were tense, the lamina of fifth was similarly divided and removed. Pulsation was now noticed. A small spiculum of bone was removed from the membranes in the region of the fractured lamina, causing some blood to escape in a constant stream and cerebro-spinal fluid in a jetting manner, but this soon ceased. Hæmorrhage gave no particular trouble, and ligatures were not required. Deep sutures of silkworm gut were inserted, and a superficial continuous suture of horsehair. It was dusted with iodoform, and iodoform and double cyanide gauze applied, and a pad of absorbent cotton. The head was supported on a small pillow, and sandbags placed on either side. The operation occupied three-quarters of an hour.

First week, July 19. 6.15 a.m., temperature, 103°. At 1.45 p.m. went up to 105.4°. Ice pack applied; 5 p.m. temperature, 99.8°. For the remainder of the week the temperature ranged between 103.6° and 97°.

Pulse fairly normal. Morphia, gr. $\frac{1}{4}$, required each night to induce sleep. Chloral and bromide were not found satisfactory. Urine withdrawn every eight hours.

July 20. 12 p.m., respiration 10 and shallow. Liq. strychn., *m v.*, given by hypodermic.

July 21. Flatulence present, and during subsequent illness was very troublesome. 11.40 a.m., temperature, 97°; pulse, 48; respiration, 13. Strychnine and brandy administered and heat applied. Liq. strychn., *m v.*, repeated every six hours. 12 a.m., temperature, 97.4°; pulse, 48; respiration, 12, and continued to improve.

July 22. Although every precaution was taken cystitis developed, and thenceforward required antiseptic washing. Wound was dressed and found healthy.

July 23. Placed on hair mattress. Bowels kept regular by enemata or laxatives. Vomiting and flatulence troublesome.

July 24. Delirious for a short time. Moved shoulders.

Second week, July 26. Temperature ranged from 99° to 104°. On passing catheter bladder empties itself without requiring to press abdomen. Sutures removed, and wound healed by first intention. Strychnine discontinued.

July 28. Delirium for a time.

July 29. Urine passed involuntarily once. Moves head a good deal.

July 30. Removed to Toronto General Hospital.

July 31. Teeth chattering. Temperature, 98°; feels cold.

Third week, August 1. Temperature for week normal. Cremasteric and plantar reflexus present.

August 2. Bowels and bladder act involuntarily. Incontinence of urine continues, with a residual of about 8 oz.

August 6. Prick of pin over lower end of radius causes pain. All muscles respond to strong faradic current. Muscles atrophied about one-third.

Fourth week, August 8. Towards end of the week temperature began to rise, after which it was seldom normal. Conscious of position of limbs and all of body, and feels that "hands are attached to arms."

Fifth week, August 16. Cannot discriminate between hot and cold applications, each causing reflex action. Knee-jerk absent.

August 19. Hypostatic congestion of lungs; strychnine, atropia, and brandy given. By a mistake $\frac{18}{20}$ grs. atropia were administered hypodermically in twenty-two hours. Pupils dilated, and suffers from delusions and dysphagia.

August 20. Delirious.

August 21. Lungs clear.

Sixth week, August 22. Contact of clothes causes reflexes in lower limbs. Rational, and speaks of his delusions.

August 23. Knees slightly flexed. Can distinguish which fingers are touched.

August 26. Flexes left elbow, and right biceps contracts slightly.

Eighth week, September. Small bed sore formed.

Tenth week. Removed to England.

Nineteenth week, November 27. Reports say bladder normal, uses left hand freely, right not improved.

Since the recent utterances of Prof. Thorburn before the Royal College of Surgeons and British Medical Association are likely to become the dictum of the profession, it may be of interest to consider his deductions and criticize them in the light of published cases.

First, let us dismiss as beyond argument cases in which operation is advised :

(1) Compound fractures.

(2) Fractures by direct violence of spines or laminæ.

(3) Hæmorrhage into spinal canal.

(4) Gravitating hæmorrhage.

(5) Pachymeningitis or peripachymeningitis, following injury at a distant date.

(6) Injuries of cauda equina, in which operation between fourth and sixth week is advised, if there has been little or no recovery, or if recovery has ceased to progress.

In unilateral dislocations, which are almost entirely confined to the cervical region, the cord is little, if at all, injured, and they are often reducible, thirty-five out of forty-one cases proving successful.

There is, then, only left in dispute the treatment of bilateral fracture-dislocations. Of this common class may be excluded as unfit for operation :

(1) Those with recoil.

(2) Where there is a total transverse disorganization, indicated, as Bastian and Boulby have pointed out, by total loss of all reflexes, with complete insensibility to touch and pain, and motor paralysis below the lesion. Later on rapid atrophy of muscles and reaction of degeneration.

For the remainder of this class the treatment consists in, either, (1) expectant ; (2) reduction ; (3) laminectomy—(a) primary, (b) secondary.

(1) *Expectant*. C. B. Keetley reports a case of fracture-dislocation of cervical cured by rest and extension. Also one in dorsal region by plaster of Paris jacket.

(2) *Reduction.* Reginald Harrison reports a case of cure in lower dorsal region by this method, and Noble Smith one in the dorso-lumbar, but its utility is very doubtful. Thorburn says reduction is not very difficult, but almost certain to return, and he can find no satisfactory evidence that the reduction has ever cured or materially relieved the medullary symptoms.

(3) *Laminectomy.* Speaking of seven cases of operation of which he had experience, Thorburn says: "In none of the cases did any real benefit result; all those in which the injury was in the cervical region died; all those in which it was below the cervical lived, but did not recover from paralysis. And the published cases, of which there are about 200, show, to my mind, no better results if we exclude injuries of the laminæ, hæmorrhage, and operations on the cauda equina. I have, indeed, not satisfied myself that there have been any successes as regards recovery of function, save such as may be attributed to the regeneration of nerve roots only, or to the natural recovery of a cord which was but very slightly injured. And, further, if it were shown that in one or two instances among the 200 published cases there had been a definite improvement or recovery, I should be inclined to regard such as the sequel of some error in the original diagnosis, rather than to allow a single instance to invalidate a rule based upon such extensive premises."

In the entire literature I am able to find but few successful cases, and with your permission I shall briefly relate them.

CASE 1. Surgeon, McCosh. Man, thirty-three years of age. Eighteen months previously sustained a fracture or dislocation of fourth, fifth, or sixth cervical. For nine months bedridden. Caused by shackle falling on his head and doubling him up. Completely paralyzed below the clavicles. At time of operation, atrophy of muscles, but stands with assistance. Spastic paralysis of left arm. Some use of right arm, not of hand. Constant pain in upper limbs.

Operation. Fourth displaced one and a quarter inches to left. Removed arch of fifth; dura very vascular and attached to arch. Not opened.

Result. Gets about, uses arms, walks four miles, and writes with left hand.

CASE 2. Surgeon, John A. Wyeth. H.A., æt. 21. September 1st, 1889, thrown from a cow-catcher to track. Loss of motion from pelvis down, bladder and rectum paralyzed.

Operation. April 30th, 1890. Removed laminæ, last two dorsal, and upper two lumbar. Bodies found crushed, and cord partly divided. Undivided part compressed by laminæ of vertebra above and body below. Compressing bone was removed and dura closed.

Result. Immediate slight improvement in motion, especially in feet. 1894, good use of legs and feet, but uses cane.

CASE 3. Surgeon, Ridenaur. M.N., æt. 28. December 11th, crushed by an overhead beam in such a manner as to crush centre of his back forwards at an acute angle, frightfully lacerating and crushing parts. Seventh dorsal depressed one inch, and eighth absent. Lamina of seventh dorsal broken and separated. Transverse processes of seventh torn off. Intervertebral disc of seventh forward one inch. Spinous process of eighth penetrating cord. Body of eighth fractured. Membranes punctured and lacerated, and hæmorrhage into arachnoid space.

Operation. Removed roof from sixth and ninth dorsal. Sensation returned at once. Motion in recti at end of fourth day. Catheter required till seventh day. Sphincter ani restored at end of first week. Knee-jerk restored at end of second week. Lift limb from bed at end of fifth week. Walk with crutches at end of three months. No fever.

CASE 4. Reported in *American Journal of the Medical Sciences*, April, 1892. Fracture-dislocation between tenth and eleventh dorsal. Opened five hours after, and large extra-theclal clot washed away; vertebræ reduced, and spines held together by silk. Paralysis and hyperæsthesia passed away.

CASE 5. Surgeon, Boyle. S.M., æt. 20. Struck in back by train, May 8th. Loss of motion and sensation below hips. Reduction failed. For first week catheterization. Pain and hyperæsthesia in both legs.

Operation. July 12th. Dislocation backward between ninth and tenth, above and forward of last dorsal, and first lumbar below. All arches removed, and bodies grooved. Second day after operation slight movement in toes, also sensation. At present has good sensation and motion.

CASE 6. Surgeons, Church and Eisendrath. Fracture-dislocation of tenth dorsal, with complete paraplegia. Extra-dural hæmorrhage found, clot removed, and vertebræ reduced.

Result. Cured.

Wagner and Golding Bird report similar cases.

Professor Thorburn gives four methods in which the cord suffers :

(1) By approximation of the laminae of the vertebræ above to the body of that below. The pressure may be permanent, or the vertebræ may recoil.

(2) A fragment of bone may be driven back upon the spinal cord. Very rare.

(3) Displacement back of intervertebral disc.

(4) Pressure of hæmorrhage.

The diagnosis between these various forms of injury is often impracticable, and might justify an exploratory operation.

The cases above quoted, although instances of method No. 1 without recoil, are complicated by one or more of the other varieties. Cases 1 and 2 are secondary operations.

Lloyd, in his report of 103 cases of laminectomy, gives five per cent. of cures in the cervical, seven per cent. in the dorsal, and twenty per cent. in the lumbar region.

Thus cures are reported following each method of treatment, and the final settlement of the question must await statistics. At present the doubtful advantage of laminectomy over the expectant line of treatment appears to be counterbalanced by the mortality of the operation *per se*.

NOTE.—In connection with the diagnosis, I wish to point out the difficulty of localizing a lesion in the cervical region from an ordinary anatomical knowledge of the origin of the nerves. Speaking generally, we have the following: The musculo-cutaneous supplies the flexors of the elbow, but, as it receives fibres from the fourth, fifth, sixth, and seventh cervicals, its paralysis would leave the location of the lesion indefinite. In practice, however, the fifth nerve is found to preside over this action.

The musculo-spiral supplies the muscles on the back of the arm and forearm, and therefore extends the elbow and wrist. It, however, is made up of fibres from all the nerves from fourth cervical to first dorsal, and, consequently, helps a diagnosis very little. The sixth nerve extends the elbow, and the seventh the wrist. The median supplies most of the flexors of the wrist, but, receiving fibres from all the plexus, it leaves a diagnosis uncertain. Here the eighth cervical is found to govern the action. The first dorsal supplies the intrinsic muscles of the hand.

Since the origin of these nerves is opposite the bodies of the vertebræ above, we have: Centre for flexing elbow, opposite body of fourth cervical; centre for extending elbow, opposite body of fifth cervical; centre for extending wrist, opposite body of sixth cervical; centre for flexing wrist, opposite body of seventh cervical; centre for hand, between seventh and first dorsal.

PATHOLOGY OF GALLSTONES.*

BY HIBBERT HILL, M.B.,

TORONTO.

GALLSTONES are more or less solid concretions, varying widely in size, number, and composition in different cases, formed in some part of the great system of ducts which originate amongst the liver cells, and terminates at the duodenum, presenting in one part of its course that peculiar diverticulum, the gall bladder.

The most common site of origin of gallstones is the gall bladder itself. Here they may be found of any size up to five inches in length; generally large, ovoid, and smooth when single, smaller and faceted when multiple. When very numerous the stones are usually also very small, so small in some cases that the term gall sand has been applied to them; hence the rule that the size is inversely proportional to the number. Occasionally six or eight smooth, oval, unfaceted stones have been found together. Sometimes mulberry-shaped stones of small size occur.

In the intra-hepatic ducts the size of the stones corresponds roughly with that of lumen of the duct at their site of formation. They may occur as very numerous soft and small concretions, distributed widely throughout the small interlobular bile ducts. In the larger ducts they may reach the size of cherry stones; obstruction does not necessarily follow, so that the bile may sometimes flow past them. Occasionally they are cylindrical or even branched, forming casts of the ducts, and such cylindrical stones may be perforated from end to end, forming then a tubular lining for the duct, through which the bile may pass.

In the hepatic duct stones rarely form. They have been found, however, in diverticula connected with the duct. Stones found in the hepatic as well as in the cystic and common ducts are generally in process of descent from their site of formation higher up in the liver or in the gall bladder.

The bile is the source of all the various substances found as constituents of gallstones, with the exception of certain lime salts which

*Read before the Toronto Medical Society.

are derived from the mucous glands of the hepatic mucous tract, and, of course, of such foreign bodies as have been found imbedded in the stones. The bile is an alkaline aqueous solution of cholesterin, bile pigment, bile salts, and certain inorganic salts of calcium and sodium ; some fat and mucin is present, and also traces of copper, manganese, and iron. All of these substances have been detected in gallstones ; generally all may be found in any one stone. Almost always at least two of them occur ; it is rare to find but one.

The formation of a gallstone occurs as the result of such changes in the chemical composition of the bile as will throw some of its constituents out of solution, these changes being produced by derangements either of the general metabolism of the body or of the special metabolism of the liver.

Of these constituents cholesterin is the most important. This substance, commonly known as "bile fat," is not a fat at all, but an alcohol, the only free alcohol occurring normally in the body. It is insoluble in water, but dissolves readily in an aqueous solution of the (alkaline) bile salts, sodium taurocholate and glycocholate. It is the presence of these salts in normal bile which keeps the cholesterin normally present, in solution. Should cholesterin be present in excess, and so out of proportion to the amount of the salts, or should the salts be reduced in amount, the cholesterin remaining normal, precipitation of the cholesterin is very likely to occur. The first of these conditions obtains in old age where cholesterin is formed to excess in the tissues, and found in excess in the bile. The second condition obtains when the reaction of the bile becomes neutral or acid, especially in the uric acid diathesis, and is probably due to the decomposition of the bile salts consequent on the removal of their base, sodium, by the excess of acid, thus reducing the amount of solvent necessary for the cholesterin.

Another prominent constituent of gallstones is bile pigment. This substance, known as bilirubin, is soluble in alkaline, but not in acid liquids, and is, therefore, like cholesterin, also precipitated from bile in which an acid reaction has developed. Reduction in the amount of sodium salts generally, and concentration of the bile consequent on retention for any cause, also favor the precipitation of these substances.

The third important constituent of gallstones, lime, although occurring normally in bile to a small amount, is derived chiefly from the mucous glands of the gall bladder, etc., being formed in excess as a result of deranged metabolism, accompanying the formation of calculi generally.

The remaining constituents of gallstones, already mentioned, occur in small quantities only, included in the mass of the stone.

The process of formation, then, consists in precipitation from the bile of cholesterin and bile pigment, and of an excessive manufacture of lime salts by the mucous glands of the hepatic tract. These substances so precipitated tend to form upon any small solid particle previously present ; successive depositions occurring at intervals result in the gradual enlargement of the calculus, at the same time giving to it that laminated structure which is generally so conspicuous. A number of such calculi, formed and growing at the same time, will, by mutual pressure, become faceted. Fusion of such while small accounts for the occasional discovery of multi-nucleated stones.

The physical characters of gallstones vary with their composition. Stones of pure pigment are small, granular, homogeneous, and black or greenish black in color. Stones of pure cholesterin, on the other hand, vary in size, and may be quite large, are laminated, the laminæ presenting radiating striæ, crystalline in fracture and crystalline in appearance when fresh, though becoming opaque on exposure to the air. They are light, have a soapy feel, and are whitish in color. Pure lime stones are often larger, generally single, very hard, have an earthy fracture, are laminated, and may be whitish or grayish in color. Pure stones are rare, however ; mixtures of at least two of these substances are more common. In most cases, all three are found, together with other matters in small amount, as already mentioned. Such stones present three distinct parts, as a rule, a central nucleus, a concentrically laminated mass surrounding the nucleus, and a thin shell enclosing the whole. The nucleus, generally single, but occasionally multiple, is dark in color, and consists usually of a mixture of bile pigment, mucin, and lime ; rarely of cholesterin crystals, or blood clot. Foreign bodies have been found occasionally as nuclei ; parasitic worms, a needle, quicksilver in a case of mercurial inunction, and once a plum stone. This last was found in a calculus which had formed in an hepatic abscess, due to adhesion and perforation from the stomach in a case of gastric ulcer. The body of the stone is usually cholesterin, and is laminated and light in color. The shell is dark and hard, and consists of pigment and lime.

Gallstones, once formed, may disappear by passing onward, *per vias naturales*, into the intestine ; rarely by gradual solution on the return of the bile to its normal composition ; possibly by attrition. In the ducts or gall bladder they may lie quiescent for years, or may set up local inflammatory ulceration, often leading to adhesion and perforation, the stone then passing from its original place into various parts of the body, as the liver, the lung, the urinary bladder, the stomach, the small and the large intestine ; or they may become encysted, or form abscesses in the liver or

peritoneum. Finally, they may pass outward through the skin. The numerous and interesting secondary results, and their symptoms and diagnosis must be left, however, to the other speakers.

The recognition of gallstones when passed per rectum is simple. The fæces should be mixed with water, shaken well, and decanted, the stones being then found deposited at the bottom of the vessel. Or the liquefied fæces may be strained through a coarse sieve of any kind. Their physical characters have already been described. Chemically, the presence of cholesterin may be determined by pulverizing the stone, shaking the powder with alcohol, and then boiling the mixture. The cholesterin is thus dissolved, and if the alcohol is allowed to cool slowly is re-precipitated and may be recognized under the microscope, forming thin, colorless, transparent rhombic plates of different sizes, and presenting one or more notches cut from one corner. A very striking chemical test for cholesterin may also be performed. Treat the pulverized calculus with chloroform. The cholesterin is dissolved. If now the chloroform solution of the cholesterin is taken up with a pipette and allowed to flow gently out again upon the surface of strong sulphuric acid, a brilliant blood-red color develops at the junction of the two liquids.

Bile pigment is soluble in hot chloroform, and may be extracted from the calculus, precipitated with alcohol dissolved in a weak solution of potassium hydrate, and tested for as in uranalysis.

SOME HISTOLOGICAL CHANGES IN THE LIVER IN TYPHOID FEVER.*

BY JOHN A. AMYOT, M.B. TOR.,

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THERE is very little mention of changes in the liver in typhoid fever in the text-books. It is strange, too, for some effects must be produced by lesions so gross as are found.

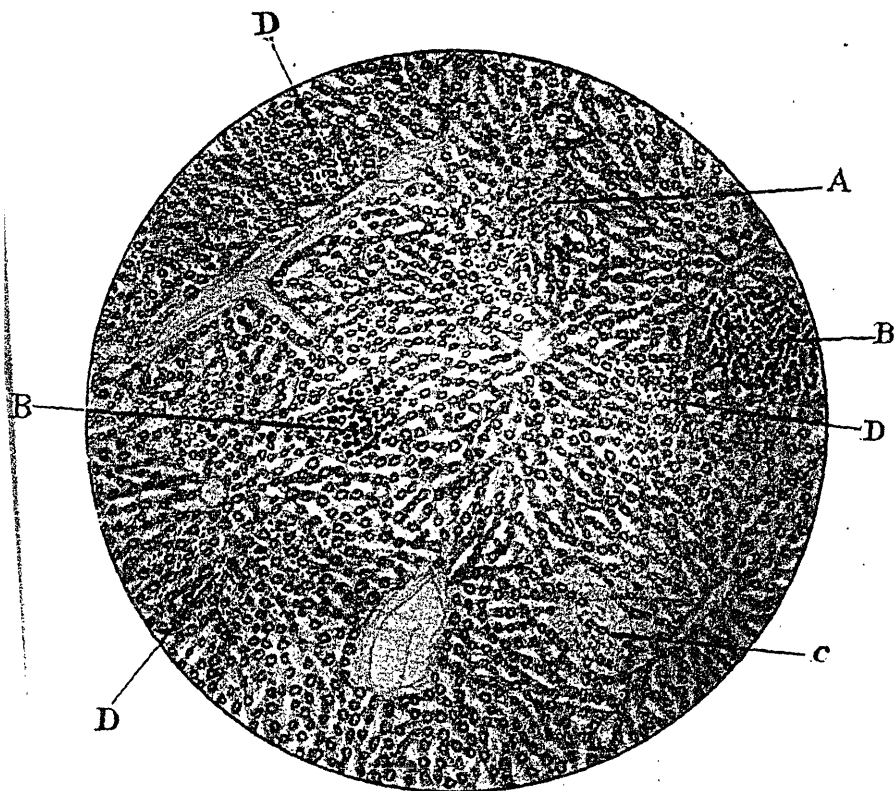
The specimens I present you are from seven cases of typhoid fever. Four I have the clinical history of. The other three have been gotten wherever I could.

The macroscopic appearances of Nos. 1, 2, 4, and 7 were the same. They were not enlarged. No. 3 was enlarged perceptibly. The cut surface of all was mottled. All gray. The lighter colored portions yellowish, as if fatty. No nodules could be seen anywhere. Laudet speaks of nodules of a light grayish color, rather waxy-looking, being found, these varying from a pin-head to a pea in size. Gall bladder unchanged, grossly, at least, in any of them.

All specimens prepared in alcohol. They were taken from those parts which seemed to be most affected grossly. Microscopically, in all seven specimens little nodules were found ; in some specimens in small numbers, in others in comparatively great numbers. The nodules vary from about one-fortieth to one-fifteenth of the size of the lobules, and are distributed in no regular fashion. Sometimes found in portal-vein zone, sometimes in intralobular-vein zone, but most frequently in middle zone. Nodules in the *same specimen* all look alike (resemble one another closely), with the exception of those in No. 4, where two kinds are present. These nodules may be divided into two classes, the lymphoid and the necrotic. Some of the authorities mention the one, some the other. Neither of them seem to be of new growth. There is no sign of expansile pressure on the surrounding tissue. The columns of cells are not deviated. The cells are not flattened. The

* Read before the Pathological Society of Toronto.

capillaries are not narrower than farther away from the nodule. All the nodules seem to have been first alike. They became invaded afterwards to a greater or lesser extent by lymphoid cells. Against this, it is true, all the nodules in the same specimen are invaded alike. This might be explained by saying that the damage was all done at the same period, so the invasion took place to the same extent in all. I can offer no other explanation for



A, Necrotic Area. B, Lymphoid Area. C, Area of Capillary Dilatation. D, Cell Infiltration. Lutz 1+3. X 57.

the similarity. The specimen in which the two forms were present would have had two invasions of toxic materials. The patient died on the fourteenth day of the first attack. The nodules are made up of masses of unstained granular protoplasm, the size of, or much smaller than, hepatic cells. In some of these masses the nuclei are still visible, though unstained; some are stained, but the cell protoplasm even then is nearly invisible. Some of the nuclei, are broken up into several

fragments, chiefly round, which stain diffusely. The capillaries of the nodules are filled with granular material. Lymphoid cells are found in the capillaries chiefly, some few between the hepatic cells. The so-called lymphoid nodules differ from this only in the difficulty with which the former cell elements are seen, and on account of the great number of lymphoid cells present. The nodules are sharply cut off from the surrounding tissue. The cells nearest the edge are most nearly normal in their staining qualities. Some of them are multinuclear. In some of the nodules the lymphoid cells are very few in number, in others there are so many present that one would almost take them for hypertrophied, previously-existing lymphoid masses, such as normally exist in the liver. The cells are too widely apart, though, and the trabecular network has other constituents besides lymphoid cells, and, again, the nodules are in the lobules, where lymphoid masses are not seen in normal specimens.

Besides these nodules there are present areas of capillary dilatation with only the nuclei remaining in the hepatic cells. These areas are of varying size and location, but are generally larger than the nodules before described; generally roundish; not so sharply marked off from the surrounding tissue as the necrotic nodules; present in four out of the seven specimens. It is not *nutmeg* change. There is no pigmentation. The other changes in these specimens are *nutmeg* change, atrophy, and pigmentation of hepatic cells and dilatation of capillaries in the intralobular-vein zone; marked in two and slight in one out of the seven specimens. Fatty degeneration of the cells in the portal-vein zone in two out of the seven specimens, but this is not present in the *nutmeg* ones. One form of degeneration seems enough for one. Beyond granulation, there is no change in the protoplasm of the cells. The nuclei contain a good deal of chromatine, and are large. Multinucleation in all, but most marked in No. 4. The greater number of large nuclei are found in this specimen too.

There is not sufficient change in the cells of these specimens to account for the mottling in the gross. Laborde attempts to explain this by saying that it is most likely due to an uneven filling of the capillaries from nerve influence on the vessels; dilate in one part and contract in another. Have not been able to confirm this on account of my specimens being prepared in alcohol, thus washing out the blood and leaving all the capillaries practically alike, and it would not require much difference in calibre to give a difference in color.

Have done nothing from the bacillar side of the question. Osler says no definite relation of the bacilli to these nodules have so far been made out. When Legry found bacilli in the liver he found them chiefly in the capillaries and hepatic veins, and sometimes even in the bile. He was able to get cultures in six out of eleven cases. He found them in sections

in six of the eleven cases, but not necessarily from those from which he got cultures. Pavone, by injecting into mammals the bacilli and their toxins, got granular-cell degeneration, but the nuclei were not destroyed, and the cells would thus recover. If injected into the portal vein in healthy animals, no effects were produced. From this he concludes that healthy liver arrests the typhoid bacilli and toxins, and that later in typhoid the reason such changes as have been described are produced is that the liver is functionally weakened in the course of the disease. Legry found that liver substance destroyed about half the toxicity of typhoid dejections.

Legry made cultures of Eberth's bacilli from the liver of a six months' foetus that was expelled during a typhoid attack of its mother. He makes no mention of there having been any lesions in this foetus' intestine.

Selected Articles.

THE MODERN TREATMENT OF PULMONARY PHTHISIS.*

BY C. THEODORE WILLIAMS, M.D., F.R.C.P. LOND.,

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THE treatment of phthisis has undergone various changes during the past eighty years, changes by no means so sweeping and revolutionary as those of its pathology, and it is a hopeful sign of medical progress that during the last fifty years, whilst divergent, and, indeed, antagonistic, doctrines have successively prevailed as to the origin and nature of tubercle, the treatment of phthisis has been more steadily carried on on the same lines, viz., those of fortifying and sustaining the resisting power of the patient. In early days Laennec preached the specific nature of tubercle, and Broussais maintained its inflammatory origin, in which he was supported, at a later date, by Addison, Niemeyer, and others. Then came the experiments of Villemin, confirmed by those of Simon Marcet, Andrew Clark, and Lebert and Zablonus, which established the doctrine of the specific nature of tubercle, this, again, being apparently overthrown by the experiments of Burdon Sanderson, Wilson Fox, Cohnheim, and Fraenkel, who seem to have produced tuberculosis in animals by inoculation with non-tuberculous material; but, at a later date, these results were proved to have been attained through the experiments being performed in a contaminated atmosphere, and similar experiments by Watson Cheyne and Dawson Williams, subsequently carried out in an aseptic atmosphere, failed to produce tuberculosis. Then came the wonderful discovery of the bacillus tuberculosis by Koch, which placed the specific character of the disease beyond all question, and reduced all forms of tubercle to the same category. But Koch's brilliant discovery, whilst it has largely assisted diagnosis, cannot be said to have contributed much to the progress of treatment. It was the signal for an enthusiastic

* Inaugural address delivered at the opening meeting of the Midland Medical Society at Birmingham on November 1st, 1894.

outburst of antiseptic or bacillicide measures. The unhappy phthical patient was muzzled with antiseptic respirators, he was surrounded by antiseptic atmospheres, and he had to submit to what Daremberg terms "orgies of creasote and guaiacol." Antiseptics were injected hypodermically, antiseptics were administered per rectum, and all efforts short of destroying the patient were directed to slaughter the tubercle bacillus. But it must be admitted that it is one thing to arrest the spread or development of this bacillus in a test-tube or on a cultivation-plate, and another to attack it in the tissues of the delicate human body, where, except at a few exposed surfaces, such as the mouth or throat, it is out of reach of local manipulation. Many of the antiseptics used have not even the recommendation of having been proved to be fatal to the bacillus tuberculosis, but were tried on purely theoretical grounds. But, after all, supposing these means had succeeded in destroying the bacilli then present in the lungs, what was to prevent other tubercle bacilli in greater numbers from entering and falling on the soil (proved to be vulnerable), then settling and multiplying, and thus rendering the last state of that patient worse than the first? There is, nowadays, much discussion on the contagious nature of phthisis, and the possibility of preventing much of the disease by notification and isolation; but, while it is our duty to disinfect and destroy the sputum and other secretions of phthical patients which have been proved to be sources of danger, any complete system of isolation would be quite impossible in so common a malady, and, moreover, as the evidence for its necessity is very weak, indeed, it would be uncalled for and cruel.

The next event in the history of the treatment of phthisis was the employment of Koch's tuberculin injections, which turned out to be a failure, but from which many wholesome lessons may be learnt, one of which was that any treatment which promotes, not conservative, but destructive changes, as shown in breaking down of the lung tissue and its appearance on a large scale in the sputum, cannot be otherwise than detrimental to the patient, as the area of infection, instead of being limited, is thereby considerably widened. Another lesson was that certain morbid poisons possess a distinctly elective affinity for certain organs, and appear to select old lesions in those organs. The quickness with which the lupus spots and tuberculous lesions in the lungs became the seat of active change was very remarkable, and the rapidity with which tuberculous masses of long standing broke down and cavities were formed was even more so.

Now, it seems to me that all these specific modes of treatment ignore one great factor—nay, the greatest factor of all—viz., the resisting power of the organism to disease, and it is to this that the physician should lend his aid and support; for, if his means are effectual, he can ward off disease, or, if a patient has already been attacked, he can limit its inroads,

and possibly arrest it altogether. A glance at the history of the treatment of phthisis will show that whatever success has been attained has been achieved by strengthening and fortifying treatment, whether by diet, climate, or medicines, and not by so-called specific treatment. Life in the pure air, judicious exercise, a light, nourishing dietary, and such aids as cod-liver oil and tonics, have effected more than all the bacillicide treatment put together. But these all act on the old principle of helping nature to help herself against her foes and reducing the vulnerability of the patient to attack. Now, what are the weapons of resistance with which nature works in the human body in dealing with invaders like the tubercle bacillus? On this point the brilliant researches of Metchnikoff, pursued for a long series of years, have thrown considerable light. It would appear that the invasion of any organism by microbes induces an afflux of leucocytes, or "phagocytes," as Metchnikoff terms them, to the invaded region, and these have the power to absorb bacilli, which are to be observed afterwards in their structures. The more malignant the bacillus, the rarer its presence within the phagocyte. In some instances the phagocytes overwhelm the bacilli, in others the bacilli devour the phagocytes. There are two principal forms of phagocytes—viz., (1) the macrophagus, a large uni-nuclear leucocyte, generally of epithelial or endothelial origin, with a prominent nucleus, lobed or reniform, staining well with aniline dyes, and possessing much protoplasm and active amoeboid movements; and (2) the microphagus, a smaller form, also staining well, multinuclear, or with one nucleus in the process of breaking up. Both these have the power of devouring bacilli, but not always the same kind, and in some instances, as in the streptococci of erysipelas, after the microphagi have devoured these the microphagi themselves are again swallowed up by the macrophagi. This bactericidal action of phagocytes is often an instrument of defence, and, in many cases, is the cause of immunity to the individual. The intervention or the non-intervention of the phagocytes seems to depend on their being attracted by some organisms and repelled by others, as they are described as having a positive chemiotaxis or attraction for certain kinds and a negative chemiotaxis or repulsion for others. Where negative chemiotaxis develops, the bacilli are unopposed, and induce the death of their host. We must remember that Metchnikoff includes a great variety of cells in the phagocyte class—not only leucocytes of the blood, but both epithelioid and giant cells. He holds that tubercle is composed of a collection of phagocytes, mesodermic in origin, which move towards the spot where the tubercle bacilli are situated and englobe them; these phagocytes either remain epithelioid in type or are converted into giant cells, which may be regarded as a further attempt on the part of the organism to protect itself against bacillary attack. The mononuclear variety of phago-

cytes seem to have the greatest influence in bacillary destruction. Thus Metchnikoff tells us that, after inoculating marmots with avian or human tubercle, he observed a characteristic degeneration of the bacilli in the interior of the epithelioid and giant cells of these animals, owing to their being but little susceptible to tuberculosis. The bacilli under the influence of these cells swell up and gradually lose their power of retaining coloring reagents. Sometimes the peripheral part, but more often the central part, of the bacillus is the first to lose its coloration. Later, the bacillus becomes converted into a sausage-shaped body enclosing a very delicate canal, and the altered bacilli collect to form a conspicuous brownish mass resembling a fragment of amber. Metchnikoff remarks that these changes are never observed in artificial cultivations, or anywhere outside the tuberculous cells. It is in diseases which possess a decidedly chronic development, like tuberculosis and leprosy, that the specific bacteria are most readily taken up by the phagocytes, and where, at the seat of the disease, we find great numbers of these phagocytes. The other side of the question is where the tubercle bacilli gain the ascendancy and destroy the phagocytes, either in the form of epithelioid or giant cells, as has been depicted by myself and others, where, at the close of the battle, no trace of cells remains, but the lines of distribution of their conquerors. Another destroyer of bacilli is the serum of certain animals, such as the rabbit, though the evidence of this bactericidal action is by no means so complete as that of phagocytosis; for, though it has been demonstrated in test-tube experiments, the effects are much less marked in the experiments on living animals, and especially if the microbes have been closed in capsules of filter paper so that they may be acted on by the serum alone without the interference of the phagocytes, for most of the serum used for inoculation contains phagocytes. Metchnikoff thinks that the serum, though incapable of killing microbes, may dilute and destroy their toxins or poisonous secretions. A third method of destruction of the tubercle bacilli is to be seen in the process of fibrosis so largely present in chronic phthisis, though we must remember that the giant cells, which Metchnikoff claims as a form of phagocyte, often become converted into fibroid tissue, as Hamilton has well shown. In a lung from a case of fibroid phthisis there generally exists a dense fibroid tissue where all alveolar structure has disappeared, enclosing a few caseous nodules in which some tubercle bacilli may possibly be detected; but the fibroid tissue may be searched through and through for them, and always with a negative result. The striking way in which, after fibrosis has affected the walls of a cavity, the bacilli disappear from the tissue has been often noted by myself and others, and the inevitable conclusion seems to be that fibrosis is incompatible with bacillary life.

Such are the weapons used by nature to fight the battle of existence against so formidable an invader as the tubercle bacillus. In a well-organized, well-developed, and, therefore, well-protected individual, the bacilli are overwhelmed by the afflux of phagocytes at the point of entry, and immunity is the result. In one of less defective power they may enter and be carried along by the lymphatics to the lymphatic glands where they undergo digestion and destruction, for Hankin's researches have shown the secretions of these glands to have distinctly bactericidal properties. When, however, the tubercle bacilli gain an entrance and settle, and destroy the tissues, as in the case of the lung, the most that can be hoped for is either that the progress may be obstructed by fibrous growth—a truly pathological process—or that, through developing and expanding the healthy, though often by no means adequately developed, lung in the neighborhood, pressure may be brought to bear on the diseased portion, inducing a drying process incompatible with bacillary life. This process is encouraged by living at high altitudes.

Reflecting on the above sketch of the elements of defence against tuberculous attack, it would seem that the problem of treatment resolves itself principally into means to increase the number and activity of the phagocytes, and thus render more probable the destruction of the tubercle bacilli. Moreover, whatever improves the quality of these phagocytes would also improve and enrich the blood and lymph serum, of which they form a principal part. The third factor, fibrosis of the lung, supervenes in a large proportion of cases, but it is difficult to say its growth is promoted; my impression is that the breaking down of lung tissue and the rapid evacuations of tuberculous material from that organ hasten its spread. To this conclusion I was led by careful examination of the Koch treatment cases, where tuberculous masses broke down and were evacuated more rapidly than is the rule in chronic phthisis and lung fibrosis, causing contraction of the thoracic walls, and displacement of organs supervened. Besides this problem, there is another which it is desirable to keep in view. While the use of purely bactericidal agents is not urged, partly on account of their inefficiency and partly because they sometimes injure the patient, there is no reason why we should not surround the patient with those natural agencies which have been shown to be highly unfavorable to bacterial life. These are sunlight and fresh air. Ransome and Delépine's* experiments on the conditions which modify the virulence of the tubercle bacillus showed that this virulence was reduced by exposure to daylight and fresh air, and was rapidly lost. But, to return to the first problem, How can we promote the formation of lymph and of blood rich in leucocytes? All experience teaches that a large quantity of oleaginous food, supplied under

* Proceedings of the Royal Society, vol. lvi.

conditions which promote its absorption and assimilation, is the surest method, and among this class cod-liver oil is pre-eminent on account of its penetrative power and the ease with which, with pancreatic juice, it forms a rich emulsion capable of absorption. It is probably this which has caused cod-liver oil to do so much good in the treatment of phthisis ; and, when we reflect on the number of poor phthisical patients, as seen in the out-patient departments of hospitals, who enjoy no advantages of climate, whose surroundings are the reverse of sanitary, whose food is scanty, and whose trade or occupation is by no means salubrious, who yet hold their own by steadily persevering for months and years with cod-liver oil, it must be admitted that it does, in some subtle way, supply the requisite nourishment and augment the resisting force of the system ; the diminution of the usual phthisical symptoms and the rapid gain of weight and strength confirm this. With regard to substitutes for cod-liver oil—and they are legion—I have given a fair trial to most of them, and have not yet found any at all comparable ; but the combination of the oil with the preparations of hypophosphites and preparations of phosphorus and arsenic have proved very useful. The introduction of a large amount of milk into the dietary is to be aimed at. If cow's milk, however, fails, ass's and goat's milk should be tried, which are more easily assimilable ; or, if these are not available, by peptonizing or preparing cow's milk it is rendered more easily digested. In some cases koumiss and kéfir will—for a time, at any rate—supply the patient with what is required. It is a curious fact that, although wasting is the leading feature of this affection, there are few patients who so readily gain weight as phthisical subjects, when secured from over-exertion and supplied with appropriate food. At the Hospital for Consumption and Diseases of the Chest, Brompton, it is no rare occurrence to see patients suffering from acute and advancing tuberculous disease, characterized by high afternoon temperatures, nevertheless gain weight owing to the large amount of suitable food taken. In phthisis, gain of weight is by no means incompatible with progress of disease ; all it signifies is maintenance of appetite and the avoidance of exertion. But the most important factor in the system of treatment is pure air, and on its thorough application to the system of the patient most success depends. Sunshine and pure air are the best bacillicides. It must not be forgotten that it was the indoor occupations, like those of milliners, dressmakers, and tailors, formerly carried on in crowded, unventilated rooms, which furnished the largest number of cases of phthisis. On the other hand, the wild tribes of the desert, living in tents like the Arabs, are exempt from the disease ; but it was noted that, when these were confined in French prisons, they died of phthisis at the rate of fifty per cent.

Now, in this country, though there is a great deal of talk about the virtue of fresh air, and boasting of going out in all weathers, in the case of invalids the doctrine of MacCormack and Henry Bennet is not carried out as thoroughly as it ought to be. A leaf might, with advantage, be taken out of the book of some of our Continental friends, and fearlessly trust phthysical patients to a little more open-air life than is at present done. Undoubtedly the treacherous climate of the British Isles, especially in winter and spring, is the great excuse. At most English health stations a wet or snowy day means confinement to the house, and generally to the fireside, for the whole twenty-four hours, the usual plea being the great tendency of phthysical patients to catch cold and contract fresh catarrh. When what goes on at Davos, St. Moritz, and Falkenstein is taken into consideration, the probability of catching cold, if ordinary precautions are taken, is very doubtful. At Davos and St. Moritz phthysical patients almost invariably sleep with open windows throughout the winter, when the thermometer not uncommonly registers 4°F. , or 36° below the freezing point, care, of course, being taken to heat the rooms with stoves, to provide plenty of blankets and coverlets, and to see that the current of external air is not directed on to the patient, but always first ascends to the ceiling. The universal testimony of medical men is to the effect that no harm, and much good, results from this practice. One effect is that patients accustom themselves to live at a lower temperature without noticing it. I remember a talented literary friend of mine who used to sit, sleep, and compose at Davos in a house of which the temperature did not exceed 40° , whilst his healthy, but unhappy, guest was sitting shivering at his side. A female patient at Davos in winter astonished me by undressing with the window open, snow lying deep on the ground at the time. I shut the window, which, I was informed, had been open for six weeks, and without harm. But it is to the practice carried on by day at the sanatoria at Davos, Ley sin, and Falkenstein that I would specially draw attention. At each of these places there are covered terraces, or long, sheltered corridors, open on one side to the air and protected from wind, where a large number of phthysical patients, in various stages of disease, recline on couches for the greater part of the day in all weathers. These galleries are deep and lofty, sheltered from too much sun, and from rain and snow by curtains. The patients lie on well-cushioned basket work or bamboo couches, like the Japanese ones used at the Hospital for Consumption and Diseases of the Chest, Brompton, for from seven to ten hours daily, only leaving them for meals or exercise. In the winter there is no heating apparatus, and warmth is kept up by fur clothing and abundant covering. At Falkenstein, on the slopes of the Taunus, about 460 feet above sea level, this seems to be sufficient, and during a recent visit Dr. Hess, Dr. Dettweiler's

assistant, informed me that hot bottles were rarely called for, but at Davos, where the temperature falls to 15° below freezing point in the shade, they are frequently needed. The galleries generally face south, and are at Falkenstein, from their horseshoe distribution, complete sun traps on bright days, and here the invalids recline in all weathers, for they are not allowed to sit up, it being found more difficult to keep them warm in the sitting than in the recumbent position. Several of them told me that they felt the cold at first, but soon got accustomed to it, and what they did dread were the white mists that prevail in autumn. Besides these terraces at Falkenstein there are a number of pavilions in the park-like gardens, some holding two or four invalids, which rotate so as always to ensure protection from wind and rain. The patients seem quite at their ease, and may be seen reading, writing, knitting, playing cards and games all day. They can keep warm even at Davos, as I can testify, having visited Dr. Turban's sanatorium on a hard, frosty day in January, 1892, and purposely shaken hands with a number of invalids as they lay on their couches after sunset reading their books by lamplight. Their circulation seemed to be excellent. In these sanatoria this treatment is by no means confined to incipient cases or to those with limited lesions, but is ordered even to patients in a condition of great prostration, and to well-marked pyrexial cases. Dettweiler holds that the open-air treatment is the best method of treating the pyrexia or phthisis, and his plan is as follows: After keeping a case of this kind in bed for a week, under diaphoretics and antipyretics, with cold water applications and dry rubbings, if the pyrexia does not abate the patient is placed under the open-air treatment, and this has the effect of gradually reducing the fever and improving the appetite and strength. The open-air treatment has been largely in vogue in Germany since the Franco-German war, when the treatment of fever and of surgical cases in tents, and in more or less open sheds, was found to be so satisfactory, and most of the new German and Swiss hospitals have covered balconies or galleries adjoining the wards, where the patients can be wheeled, and where they can lie in the open air for most of the day. The same is done in some of our English hospitals if, as at St. Thomas' Hospital, the construction admits of it.

The advantages of this treatment for those suffering from phthisis are obvious, as it means the complete application of the finest antiseptic in the world—fresh air—to the lungs and systems for most of the day; but the objections are twofold. The recumbent position is not the best for expectoration, and where there are cavities, and the power to expectorate is feeble, there is some risk of fresh lung infection and the promotion of secondary cavities. This is met by adopting a position in which the head and shoulders are more or less raised, as is possible with most of the

bamboo couches. Again, there are the want of exercise and the tendency to chilliness which such a practice involves. This is a point on which I differ from our German confrères, for, while they dwell on the importance of air, they do not attach sufficient importance to exercise, even in the initial lesions of phthisis. For the cases of consolidation or of excavation with pyrexia exercise is undesirable, and a continuously recumbent position the best ; but in cases of limited apical lesions and limited cavities without fever, it is desirable for the patient to take as much exercise as his strength will permit in order to develop and extend the healthy portions of the lung, and to increase the muscular power. This, however, need not prevent the patient from spending the resting times of the day in the recumbent position in the open air. Then the difficulty of carrying out this practice in London and Birmingham, and other great cities, is considerable on account of the smoke, and, in winter and autumn, of the fogs ; but there is no reason why it should not be tried more fully at our health resorts, like Ventnor and Bournemouth, Torquay and Hastings. The south coast sanatoria of England should, as Dr. Herman Weber suggests, have covered terraces or balconies in which patients might lie on couches ; and in the numerous villa gardens of Bournemouth and Torquay convenient rotatory shelters, capable of being turned at will to keep out wind and rain, might be erected and the verandas be more utilized.

And now I would close with a few remarks on treatment, suggested by thirty years' experience of the disease. Cough should always be treated by promoting expectoration, one of the best forms of expectorant being the effervescing carbonate of ammonia draught night and morning, which will generally clear the bronchial passage for several hours. If there be a good deal of fruitless hacking before expectoration, causing annoyance to the patient, the addition of a few minims of dilute hydrocyanic acid and half a drachm of syrup of poppy or codeia will do no harm, and considerably allay the reflex irritation. Where the cavities are large, or deep, or basic, and consequently require great expiratory effort to clear, combinations of sal volatile and spirit of ether with camphor water, as in the form of the pharmacopœia of the Brompton Hospital, answer admirably, while for old or feeble persons champagne will often serve the same purpose. But the most satisfactory way to reduce the cough of chronic phthisis is by counter-irritation to the chest wall—best by blistering. It will be found that relief will follow in proportion to the amount of serum drawn by vesication, and fly blisters or acetum cantharidis, or the strong but very efficient liquor epispasticus, answer the purpose. Night sweats, when they are a mere flux from the vessels or lymphatics, and not a relief of pyrexial processes, ought to be checked, and this can generally be done by arse

niate of iron, $\frac{1}{8}$ gr. to $\frac{1}{3}$ gr., at bedtime, or picrotoxine, $\frac{1}{80}$ gr. to $\frac{1}{30}$ gr., or nitrate of pilocarpine, $\frac{1}{20}$ gr., or the old-fashioned oxide of zinc in from 3 gr. to 5 gr. doses, which generally succeed and do no harm. Preparations of belladonna and atropine, though they are effectual controllers of night sweats, are less satisfactory, because their continuance for a long period often induces dryness of throat and mouth, dilatation of the pupils, and disturbance of sight accommodation. The treatment of pyrexia depends very much on its cause. Where it accompanies tuberculization it will probably subside of itself when the tuberculous process quiesces, and even if persistent will only prevail in the afternoon. An effervescing saline, with a few drops of tincture of aconite or a few grains of quinine, is all that is then wanted. But pyrexia accompanying acute excavation, or acute excavation and tuberculization, is very troublesome, and sometimes quite intractable. Antipyretics, of which there are any number, according to my experience, only give temporary relief, and often do harm by depressing the patient's constitutional powers and producing collapse. I have seen the temperature depressed from pyrexia to a subnormal reading by doses of antipyrin or phenacetin, but always with bad results, and after the use of the medicine has been omitted the temperature has risen as high as ever before. The great object in the treatment of this form of pyrexia is to keep the patient quiet in bed or lying on a couch, and, if possible, in the open air, *à la* Dettweiler; to feed him frequently; and to supply alcohol to repair tissue waste, while administering only sufficient antipyretics to keep the temperature within moderate bounds. Quinine in small doses in effervescence before the rise or during the rise of temperature will often suffice, or Henn's well-known pill twice a day. Any one who studies the phenomena of fever knows that temperature rise is only a small portion of the process, and that by lowering the chart we do not get rid of the factors of heat production or of the wear and tear of the tissues, and so our best line is rather to keep up strength and weight by a frequent supply of food. The diarrhœa which accompanies tuberculous ulceration may be checked by sulphate of copper and opium if the ulcerative process be limited in extent, but if there is much ulceration, and it is the ileum and large intestine which are involved, injections are best. The enema opii of the British Pharmacopœia is excellent under these conditions, but I have seen a few of the most obstinate cases yield to large injections of linseed tea, which has a most soothing influence on the irritable ulcers.

Clinical Notes.

FRIEDREICH'S DISEASE.

BY D. CAMPBELL MEYERS,
TORONTO.

Mr. President and Gentlemen:

AS pathological specimens of Friedreich's disease are still comparatively uncommon, I take the opportunity of exhibiting to those interested a microscopical section of the spinal cord of a patient who had suffered from this disease.

In this section I would like to direct attention more especially to the posterior columns, which clearly show that peculiar form of sclerosis which has been described by Déjérine as a pure neuroglial sclerosis.

On examining these posterior columns, and especially the median parts of the columns of Goll with a high power, there is found a peculiar arrangement of the fibrillæ, which cross one another in various directions, or run closely beside one another, in sinuous curves.

These fibrillæ are exceedingly fine, and are for the most part directed horizontally. Since some, however, have an irregular course, and since they arise at different levels, they are seen in the section to be cut transversely or obliquely.

The vessels show no appreciable thickening of their walls, and no processes of the pia mater are found hypertrophied. The difference between the condition just mentioned and that met with in ordinary tabes dorsalis is very marked and exceedingly interesting.

We know from the works of Renaut, which have since been fully confirmed by Ranvier, that the neuroglia is not derived from the mesoblast, as is the ordinary connective tissue, but from the outer layer of the blastoderm, the epiblast.

In this fact we have an important difference between the sclerosis of the posterior columns in Friedreich's disease and the other scleroses, since the former is the only sclerosis which is congenital, and it can consequently be more easily attributed to an alteration in development.

Further, the histo-chemical reactions of this new tissue, as shown by the test of Malassez, is distinctly different from that of any other connective tissue.

In conclusion, I may add that a consideration of the above facts would indicate that the sclerosis of the posterior columns, at least in Friedreich's disease, is not the same as that found in ordinary tabes, contrary to the opinion generally held by authors, that we have in the former disease to do with a special form of sclerosis distinctly different from that usually met with, which is due to a defect in development, and in which the neuroglial elements only are concerned.

This specimen is further interesting since the appearance and histo-chemical reactions of the tissue above described are precisely analogous to those discovered by Chaslin in the brain in certain cases of idiopathic epilepsy.

199 SIMCOE STREET.

MALIGNANT DISEASE, INVOLVING THE ABDOMINAL AND
PELVIC LYMPHATIC GLANDS AND INTESTINE,
WITH SECONDARY LESIONS.*

BY H. B. ANDERSON, M.D.,
TORONTO.

ALEX. S., æt. 65, gardener, admitted into Toronto General Hospital, September 30th, died November 17th, 1893.

Until three months before entering the hospital the patient had been in good health. He then began to fail rapidly, losing fifty pounds weight in three months. At intervals he complained of ill-defined abdominal pains and some tenderness, but these symptoms were not marked. He had no symptoms particularly referable to the alimentary tract. On entering the hospital, the patient showed marked anæmia, wasting, and cachexia. On examination a distinct lump was felt in the right inguinal region, and nodular masses of varying size throughout the abdomen. Nothing else was revealed on physical examination of the various organs.

After entering the hospital, the patient was troubled with constipation, requiring purgatives. He grew gradually weaker, and died November 17th, after four and a half months' illness. There was no history of tumors in his family.

The post-mortem examination showed as follows: On opening the abdominal cavity, there was evidence of chronic inflammation, about a quart of turbid fluid, containing masses of fibrin, being removed from the peritoneal cavity. The peritoneum, both parietal and visceral, was much thickened and covered with fibrinous deposit. On continuing the examination, attention was at once attracted to the mesenteric glands, which were enormously enlarged, so that by their overgrowth and coalescence they formed one nodular mass. The intestines were almost inseparably bound together by inflammatory adhesions and extension of the growth from the glands.

The glands varied in size from a hen's egg (small) to a marble. The larger ones on section were white in color and brain-like in consistence, the softening being most marked in the centre. On pressure, they exuded a whitish juice. The smaller glands were yellowish white and firm, and

* Read before the Toronto Pathological Society.

exuded very little juice. The enlargement and softening had advanced to greatest extent in the glands in the upper part of the mesentery. The retroperitoneal glands were also greatly enlarged, and some of them were softened, although to a lesser degree than the mesenteric. They formed a mass surrounding the aorta and vena cava. Some of the pelvic glands were also enlarged.

The various organs were as follows :

Spleen. Weight five and a half ounces, showed no gross lesion.

Kidneys. The upper one-third of the left kidney was occupied by a soft, reddish-gray mass, apparently mostly blood clot. Right kidney was normal.

Liver was apparently normal, but, unfortunately, it was not saved. Suprarenals were not saved.

Intestines were so matted together that it was with the greatest difficulty any separation could be effected. In the upper part of the jejunum an ulcerated surface four inches long was found. The whole wall of the gut was involved, the edges and floor of the ulcer being ragged and thickened. The wall of the intestine adjacent to the ulcer was uniformly thickened to about three-eighths of an inch, but it preserved the general form of the gut, the growth being, as it were, moulded on the intestine ; and it presented no ulceration. Lower down in the ileum a similar but smaller ulcer was found. In the cæcum the outer coats were eroded by the growth, but the mucous membrane remained intact. The appendix was much thickened.

Duodenum, stomach, and œsophagus, normal.

Pancreas, normal.

Lungs. Right lung showed no gross lesion. The left lung presented along the base inferior and anterior borders, just beneath the pleura, a number of small, flat, superficial, yellowish nodules. The bronchial glands were not enlarged. There was no enlargement of the cervical axillary, mediastinal or inguinal glands, nor of the tonsils. Peyer's patches and the solitary glands away from the intestinal lesions were not materially enlarged. Testicle showed no lesion.

Heart. Showed nothing worthy of remark.

Brain and cord. Not examined.

Microscopic examination. (1) The enlarged glands consist mostly of irregularly-rounded cells larger than leucocytes, separated by a considerable amount of stroma. Besides these there are also a considerable number of spindle cells with elongated nuclei separated by smaller round cells in different parts of the section. Masses of deeply staining round cells, resembling leucocytes, are also seen in the growth, and there are areas of necrotic tissue, unstained. The section shows a considerable amount of fatty change.

(2) Intestine at edge of ulcer. The normal histological structures are replaced by a cellular structure essentially the same as that described in the gland. In the outer part of the wall it shows some larger flat epitheloid cells lying in a fibrous tissue stroma. The necrotic area is here along the edge of the ulcer, and the fatty changes are less marked. At one place it shows where the growth is encroaching on the outer edge of the gut, involving its peritoneal coat. The growth here exhibits a high degree of vascularity.

(3) Intestine away from edge of ulcer. Here the normal structures are, to a large extent, replaced by the same cellular growth. At some places columns of the circular muscular fibres remain. At others they are separated by columns of the infiltrating cells, until at last the muscle is gradually replaced by the cellular growth.

(4) Appendix. The thickening is found to be due to the round cells which replace the outer coats. Beneath the mucous membrane is a layer of small round cells like leucocytes.

(5) Lung. The nodules here are essentially the same in structure as the growth in either parts, consisting of a very vascular cellular structure.

(6) The mass in the kidney consists of small round cells massed in different places, and a large amount of fibrinous material. It also shows considerable amount of brownish yellow blood (?) pigment.

(7) Spleen shows nothing abnormal.

There was no microscopic examination of the blood, so I am unable to state the relative proportion of corpuscles in it.

As to the exact nature of the morbid condition affecting the various organs and structures mentioned, I am in some doubt. It was certainly very malignant in character, causing secondary lesions, and death in about four months' time.

It appears to have been a malignant growth, attacking simultaneously the mesenteric and retroperitoneal glands. The condition in the intestine may have been due to a direct extension and infiltration from the glands, or there may have been a primary overgrowth of the adenoid tissue of the gut itself; or, for reasons to be mentioned, I think that the intestine was probably involved in both ways. There was visible evidence, both gross and microscopic, of the extension of the growth from the glands to the *outer* coats of the intestine, which were much thickened and infiltrated, and in one place showed ulceration, the *mucous* coat in the same part remaining intact. In the appendix the outer coats were involved to the greatest extent. On the other hand, the bowel in two places showed ulceration on the *mucous* surface, the *outer* coats being involved to a much lesser degree.

The enlarged retroperitoneal glands surrounded the aorta and inferior vena cava, and in one place the growth extended through the wall into the lumen of quite a large tributary to the inferior vena cava. This would easily account for the secondary growth in the lung. The growth in the kidney may have been due to extension along the blood vessels, although I could find no direct evidence of this. It was remarkable that, although the intestines and mesentery and their glands were involved to such an extent, no secondary growths were found in the liver or spleen.

For the following reasons I think the primary lesion was in the glands, or, at least, simultaneous with the involvement of the intestine:

(1) It was here that the morbid condition had reached its most advanced stage; many glands already softened and partly broken down.

(2) The general involvement of the glands—mesenteric, retroperitoneal, and pelvic.

(3) There was an absence of all early clinical signs of involvement of the intestines.

In many respects the growth resembled malignant lymphoma, or Hodgkin's disease, a condition by many authorities—Coats, among others—considered as being identical with a lympho-sarcoma. It, however, presented the following differences from Hodgkin's disease, as ordinarily described:

(1) The liver was not enlarged.

(2) The spleen was not enlarged, and showed no microscopic evidence of being affected.

(3) Many of the cells were larger than those found in lymphadenoma.

(4) We do not find infiltration of the surrounding tissues and coalescence of the glands in Hodgkin's disease. (Hamilton.)

(5) The patient was older, and the disease ran a more rapid course than is ordinarily the case.

Hamilton distinguishes lympho-sarcoma from lymphadenoma, and this tumor more nearly corresponds to his description of the former: "A tumor, in structure somewhat resembling a lymphatic gland, usually commencing in and involving several members of a group almost simultaneously. These enlarge and coalesce, so that the original outlines of the individual glands are lost." Bland Sutton, who also distinguishes between the lympho-sarcoma and Hodgkin's disease, places the former as the most malignant of all forms of sarcoma. This quite agrees with the clinical history of the present case.

None of these descriptions of lympho-sarcoma, however, account for the intestinal involvement. Coats, under the heading of malignant lymphoma, or Hodgkin's disease, describes a case which quite corresponds

with the one under discussion, "in which a considerable length of small intestine was replaced by tumor tissue, the general form, including the *valvulæ conniventes*, being repeated in an exaggerated form."

To some it might appear that the case was one of tubercular enlargement of the glands, but the following considerations disprove this :

- (1) There was no tubercular history.
- (2) There was no caseation.
- (3) The growth was not in the form of tuberculous nodules, and it showed no microscopic characters of tubercle.
- (4) It was too malignant in its clinical history to be tubercle.
- (5) There were no tubercle bacilli.

I submit for your examination microscopic specimens of the growth in various organs.

Progress of Medicine.

MEDICINE

IN CHARGE OF

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HÆMATOPORPHYRIN (AND SOME OTHER ALLIED BODIES) IN THE URINE.

The discovery of hæmatoporphyrin in the urine is not only of high physiological interest, but has acquired the greatest degree of practical importance because of the suspicion that the worst cases of hæmatoporphyrinuria may be due to the free use of sulphonal.

When hæmatin is heated with concentrated sulphuric acid it dissolves, and the filtrate is a clear and beautiful purple red fluid. If a large excess of water be added to the filtrate, a brown flocculent precipitate, devoid of iron, is thrown down, and is still further increased if alkalis be added in such quantity as to neutralize the acid. This substance was first prepared by Mulder, in 1844, and was named by him iron-free hæmatin. It was found by Hoppe-Seyler to be a mixture, the main constituent of which he called hæmatoporphyrin, while to a substance present in smaller amount he gave the name hæmatolin. To the latter he ascribed the provisional formula $C_{68}H_{78}N_8O_7$; and to hæmatoporphyrin the formula $C_{68}H_{74}N_8O_{12}$.

HÆMATOPORPHYRIN IN URINE.

The first to call attention to the presence of hæmatoporphyrin in the urine and its distribution in nature was MacMunn, who, in 1880, discovered a pigment in the urine of a case of rheumatic fever, to which he gave the name of urohæmatin. This name he afterwards (1885) discarded for that of urohæmatoporphyrin, because the urinary pigment "bears a very striking resemblance to hæmatoporphyrin, as can be seen by comparing the spectra of its

alkaline and acid alcoholic solutions with similar solutions of hæmatoporphyrin." It is, indeed, true that a Burgundy-red urine from a case of leprosy was examined by F. Baumstark in 1874, and yielded two pigments, one of which was free from iron. But neither of these pigments was genuine hæmatoporphyrin, although probably allies of it. The case is full of interest, and will be referred to in the sequel.

The following are some of the diseases in which hæmatoporphyrin has been detected—not, indeed, as an invariable constituent of the urine, but frequently: Gout, acute and subacute rheumatism, chorea, tubercular affections, lobar pneumonia, pleurisy, cirrhosis of the liver, enteric fever, erythema nodosum, febricula, measles, tonsillitis, parametritis, hysteria, chlorosis, Raynaud's disease, Addison's disease, exophthalmic goitre, Hodgkin's disease, catarrhal jaundice, paroxysmal hæmoglobinuria, lead poisoning, heart diseases, broncho-pneumonia. Of more interest, perhaps, is the occasional discovery of it, in small amount, in the urine of healthy persons. Salkowski did not succeed in finding it in healthy urines, although he estimated that by his method he could detect as little as .035 per mille in urine; but Garrod detected it frequently.—John Priestley, M.R.C.S., in *Medical Chronicle*.

ACNE ROSACÆ.

Dr. Purdon, of Belfast (*Dublin Journal Medical Science*, May, 1894, p. 402), advocates the following plan of treatment in acne rosacæ. The dietary and any gastric derangement having been attended to, the following local plan gives good results: Bathe affected parts with spirits of horse-radish, say, in the morning; and, at bedtime, rub in pretty firmly a pomade of sulphur with a small quantity of carbolic acid. In place of the latter, sometimes good results are obtained by substituting 10 grs. of the green iodide of mercury to the ounce. All comedones should be squeezed out with an "extractor." As a "reducing" agent ichthyol is often better than sulphur.—*Medical Chronicle*.

THE INFLUENCE OF THE LIVER IN THE DEVELOPMENT OF PANCREATIC DIABETES.

Although we have learned that certain lesions of the central nervous system and destructive changes in the pancreas respectively are attended with glycosuria, the etiology and pathology of diabetes mellitus are yet unexplained. Whatever the chemic and metabolic changes upon which the excretion of sugar in the urine depends, there is evidence that no small part in the morbid process is played by the liver, of whose multiplicity of function we really know comparatively little. There is good

reason for believing that under normal conditions the liver either stores up or converts into other bodies a substance allied to sugar, and which, under certain morbid conditions, appears in the urine as glucose. Additional evidence of this influence of the liver in the development of diabetes is furnished by the results of some experiments detailed at a recent meeting of the Berlin Physiological Society by Marcuse (*Munchener medizinische Wochenschrift*, 1894, No. 28, p. 564), who undertook to determine if the diabetes that appears after extirpation of the pancreas manifests itself in case the liver is also removed. As the animals experimented with were likely to die sooner in consequence of the two operations than after extirpation of the pancreas alone, the question arose as to whether or not the animals would live long enough to afford time for the development of the diabetes. To decide this point, a series of observations were made upon nineteen frogs. It was found that in twelve of these in which diabetes developed this appeared within the first day or two, the animals living on an average for five days. The proportion of sugar contained in the urine, as determined by polarization, equalled 0.4 per cent. In a second series of almost parallel cases, both liver and pancreas were removed, with the result that in not one of the animals did diabetes develop. These animals lived for from one to five days after the operation. The amount of urine excreted was considerable, though not so great as in the case of the animals from which only the pancreas had been removed. In explanation of the influence of the liver in the development of the diabetes that follows removal of the pancreas, it is suggested that there is formed in the liver a substance that, while not itself sugar, is yet of importance in the development of diabetes (perhaps a sugar-forming ferment), or that certain elements in the blood that are acted upon by the liver remain in the circulation after extirpation of this organ, and bring about decomposition of the sugar present after extirpation of the pancreas.—*Medical News*.

OBSTETRICS

IN CHARGE OF

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HYDRORRHŒA GRAVIDARUM.

Chazan (*Centralblatt fur Gynakologie*) discusses the causes of hydrorrhœa gravidarum. Although this condition has been long known, yet its nature and causation are still uncertain. It seems a symptom of several conditions; and may come from several sources. In some cases there is a true serous infiltration of the uterine wall, the fluid collecting between it and the membranes. In other cases the decidua is the source, in others the infolded surfaces of the decidua vera and reflexa. Sometimes it seems due to a persistence of the allantoic sac. The author cites an interesting case of a healthy primipara, aged twenty-three years, who consulted him on account of excessive thirst, weakness, and breathlessness. The excessive distension of the abdomen, out of all proportion to the period of pregnancy, caused a diagnosis of hydramnios. Some time after the patient was seized with severe pains in the body and back, and, on examination, showed the beginning of regular uterine contractions. The pains became more intense until the following day, when a profuse watery discharge occurred from the uterus, causing it to become markedly reduced in size. The pains then slowly disappeared, and a period of rest, except for backache, ensued for several weeks, when there was a recurrence of the phenomena, with another period of rest. After the last period a lesser recurrence took place, the os dilated to the size of a dollar, the presenting head settled well into the pelvis, when another period of rest occurred.

Finally, nearly three months from the time of the first attack, the pains recurred, with a small discharge of water, followed by the birth of a healthy female child. An examination of the placenta showed the ovular envelopes scanty, the amnion extensively separated from the chorion. Besides the opening through which the foetus passed, the amnion showed

in its separated part a hole the size of a quarter, this hole having slightly swollen edges.

The author considers that this case shows that the amniotic cavity may be the source of an outflow, and the question arises whether in cases of fluid escaping from this cavity it may not escape from an opening in the upper pole due to variations in coherence, caused by changes in the shape of the lower uterine segment incident to the later months of pregnancy, or whether it can escape through an aperture in the lower pole of the ovum during pregnancy without interrupting the course of the latter. The writer is inclined to admit this latter as possible. In twin pregnancy a second child may come very late after the first, which proves that a partial emptying of the uterus does not of necessity involve the immediate contraction.—*American Journal of the Medical Sciences.*

ECTOPIC GESTATION.*

Dr. Webster, of the University of Edinburgh, gives the following classification of ectopic gestation (*American Journal of Obstetrics*, August, 1894):

Primary tubal in all cases as far as is known.

I. AMPULLAR, in which the gestation begins in the ampulla of the tube. This is by far the most common origin.

1. *Persistent.* In rare instances the tubal gestation may go on to full time.

2. *Rupture may take place early into the broad ligament*—subperitoneo-pelvic, tubo-ligamentous, extra-peritoneal, broad-ligament, gestation.

(1) The gestation may continue to develop—subperitoneo-abdominal.

(2) A secondary rupture of subperitoneo-pelvic gestation may take place into the peritoneal cavity.

(3) The gestation may come to an end:

(a) By the formation of a hæmatoma.

(b) By suppuration.

(c) By mummification, adipocere, or lithopedion formation.

3. *Rupture may take place into the peritoneal cavity.*

(a) Tubo-peritoneal gestation, in which escape of the foetus in the membranes occurs into the peritoneal cavity, the placenta remaining in the tube, its development continuing.

(b) The gestation terminates in various ways: By the formation of a hæmatocele, the patient dying from the shock and loss of blood, or from peritonitis. In some cases absorption of the mass may occur. In others mummification, adipocere, or lithopedion formation may take place in the foetus. Or suppuration may result.

*I do not include cornual pregnancy in this table.

4. *The gestation may be destroyed :*

(a) By the formation of a tubal abortion and its passage through the fimbriated end of the tube into the peritoneal cavity.

(b) By the formation of a hæmatosalpinx.

(c) By the formation of a mole.

(d) By suppuration resulting in a pyosalpinx.

(e) By absorption after early death, by mummification, adipocere, or lithopedion formation.

II. INTERSTITIAL. The gestation may develop in the interstitial portion of the tube :

(1) The gestation may go on to full time.

(2) Rupture of the gestation into the peritoneal cavity may occur.

(3) Rupture into the uterine cavity may occur.

(4) Rupture both into the uterine and peritoneal cavities may occur.

(5) Rupture may occur between the layers of the broad ligament.

(6) After the death of the foetus it may remain in its sac, and possibly may undergo the same changes as in the other forms, *e.g.*, mummification, adipocere, or lithopedion.

III. INFUNDIBULAR. The gestation begins in the outer end of the tube, or in an accessory tube ending. Under this heading are to be included the forms described as tubo-ovarian, and tubo-abdominal, names which appear to me to be unnecessary, since the gestation is a tubal one in origin, the end of the gestation sac merely becoming adherent to the abdominal wall, the ovary, or other of the viscera.

SURGERY

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CASE OF INTESTINAL OBSTRUCTION DUE TO ADHESIONS ROUND THE VERMIFORM APPENDIX, THE RESULT OF APPENDICITIS THREE YEARS BEFORE.

Mr. Jones, in *Medical Chronicle*, August, 1894, reports the following case:

On March 17th of this year the patient (John H., æt. 20) was seized with pain in his abdomen, felt mostly below and to the left of the umbilicus. He was constipated. He took to his bed, and a doctor was called in, who gave him an enema of hot water and turpentine. This brought nothing away. Nine similar enemata were given during the ensuing week, and on one occasion a hard fæcal mass was brought away by the injection. But for this, there was complete constipation; but the patient thinks that he passed some flatus.

On the evening of the 21st patient began to vomit. He describes the vomit as being "reddish" at first, and he noticed no special odor about it, but next day it became brownish, and had a distinct fæcal odor. The abdomen gradually became distended and the pain increased, and he was sent to the Manchester Infirmary. On admission patient was found to be suffering from constipation, fæcal vomiting, and severe abdominal pain. His face was pinched, and had the anxious expression found in abdominal cases. The abdomen was greatly distended, chiefly in the middle, the flanks being unaffected.

Patient stated that he had had an attack of typhoid fever in November, 1890, which kept him in bed for three months. During this attack he had no diarrhœa, but, on the contrary, constipation. He remembered no other illness.

On examining the abdomen, Mr. Jones thought he felt resistance in the right iliac fossa, and, though the pain was not in this region, he determined to open the abdomen here and explore.

Operation, March 24th. Chloroform was given, and a small, hard mass could be felt in the right iliac fossa. An incision, about three inches long, was made in the right linea semilunaris, and the peritoneum was cut through. Adhesions, apparently of long standing, were found round the cæcum. The appendix was as thick as an average-sized finger, and more than four inches long. It dipped into the pelvis, and its extremity was there adherent, causing occlusion of the gut by dragging on it. The adhesions were separated, and about two inches of the appendix were removed. The stump was ligatured, and its peritoneum was stitched over it by means of three Lembert's sutures. The part was washed out with boracic lotion and thoroughly dried, and then the wound in the abdominal wall was closed with silk sutures, no drainage being used. Dry dressings were applied and the patient went back to bed. He made an uninterrupted recovery. The temperature never rose to 100° ; the pain and vomiting ceased. He was fed by the bowel, each enema containing, for the first day or two, a little liq. opii. sedative. The bowels acted naturally on the fifth day after the operation. On April 20th patient was allowed out of bed, and on the 24th he left the hospital. He has been seen twice since, and has continued quite well.

From what was found at the operation, it seems likely that the illness that patient had in 1890 was not typhoid fever, but appendicitis. It is interesting to note that the pain was on the left side of the abdomen, and that McBurney's point was absent. For the notes of the case we are indebted to the dresser, Mr. Paget Moffatt.

[NOTE.—We republish the above case because its clinical aspects are so commonly met with. Many cases of so-called typhoid fever are, in reality, appendicitis. The diagnosis is frequently turned on the absence of McBurney's point, which is by no means a constant symptom. It is very frequently absent. Its presence is diagnostic, but its absence is not proof that appendicitis does not exist.]

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF

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TWO CASES OF INTRAPERITONEAL RUPTURE OF THE BLADDER.

Coats records (*British Medical Journal*, 1894, No. 1751) two fatal cases of rupture of the urinary bladder, and adds the post-mortem records. In studying these cases the following points seemed especially worthy of comment:

The absence of a clinical diagnosis in both. There was no clear history of violence in either case, and the symptoms were obscured by the fact that one patient was maniacal and the other deeply intoxicated.

The seat and size of the rupture were similar in the two cases. The tear was found in the posterior wall of the bladder, a short distance from the fundus, being circular in the first case and transverse in the second.

The interval of time between the rupture and the death of the patient was in the first instance five days, and two to three days in the last. Of 85 cases collected by Rivington, 8 died within twenty-four hours; 15, within two days; 15, within three days; 16, within four days; 10, within five days; 4, within six days; 5, within seven days; 5, within eight days; 1, within nine days; whilst 1 lived twelve days; 1, more than twelve days; 1, fourteen days; 2, about fifteen days; and 1, sixteen clear days.

The absence of peritonitis was a surprise to the author, who states that none of the ordinary evidences of acute peritonitis were present.

Absence of inflammatory reaction in the wound was noted, particularly in the first case, even in the microscopic examination of the edge of the wound and adjacent bladder wall. Ferraton, in 1883, recorded two cases that received external wounds simultaneously with rupture of the bladder; he observed that at the time of death the wounds presented exactly the same aspect as at the time of admission to the hospital—"they presented no trace of a process of inflammation and repair."

The mode of death is directly related, in the opinion of the author, to the absorption of the urine by the peritoneum, and its continuous accumulation in the blood, to which condition Coats applies the term "urinary poisoning."—*American Journal of the Medical Sciences.*

NEPHRITIS FOLLOWING FRICTIONS WITH NAPHTHOL.

In the *Revue internationale de médecine et de chirurgie pratiques* for October 25th, there is an abstract of an article on this subject by M. Baatz which appeared in the *Centralblatt für innere Medicin*. The author relates two cases of nephritis following naphthol frictions for the itch. In the first case, that of a boy nine years old, the nephritis, which was not very pronounced, manifested itself in œdema of the legs, the feet, and the scrotum, accompanied with slight albuminuria. Recovery followed very quickly under the influence of a proper diet and baths. In the second case, that of a boy six years old, anasarca and symptoms of broncho-pneumonia were observed when he entered the hospital. The urine, which was brownish in color, contained albumin, hyaline casts, and red blood corpuscles. Notwithstanding the treatment, which was carefully applied as soon as the symptoms appeared, the situation became aggravated, and the child died four days after his entrance into the hospital. At the autopsy extensive broncho-pneumonia of the left base and parenchymatous nephritis were found. The author thinks that in both cases nephritis had been provoked by naphthol frictions. He recalls the fact that similar cases have been observed before by other authors. Kaposi has published an account of a boy who, after friction with naphthol for prurigo, was taken with ischuria, with bloody urine, vomiting, loss of consciousness, and eclampsia which persisted for several days. The child recovered. Lewier has related the case of a man who, after fifteen days of naphthol frictions, was taken with acute nephritis with albuminuria. Finally, Frohmüller has observed three cases of naphthol poisoning where the principal symptoms were acute nephritis and attacks of mania.

STONE IN THE BLADDER : CHOICE OF OPERATION.

William H. Hingston, M.D., of Montreal, in *Medical News*, says in regard to the choice of operation for stone in the bladder: "Lithotribe in all cases of adults in whom the stone is neither too large nor too hard for the lithotrite; when the urethra is or can be made sufficiently capacious for the crushing instrument; in children, however young, when the urethra permits the introduction of a crushing instrument. In very young children the cutting operation is preferable. The precise age at which lithotribe is possible must vary with the calibre of the canal, which in young children varies greatly in its capaciousness and its capacity. When the urethra in the child is not and cannot be made fit to receive the lithotrite, the cutting operation to be chosen is the lateral method. In cases of stone in the aged, when enlarged prostate not only

prevents the stone being seized, but its dimensions being ascertained, one should act as if the calculus were of large size and incapable of reduction, and proceed to operate by the suprapubic method."

Surgical interference in cases of calculus in the female remains the same. The method employed years ago by Erichsen, Thompson, and others, has since been followed, and stones of large size are removed generally *per vias naturales*, after dilatation.

In exceptionally large calculi the lithotrite commonly suffices; and rarely, indeed, is the surgeon obliged to resort to the knife in the case of females.

SUPRAPUBIC PROSTATECTOMY.

Robson (*British Medical Journal*, July 14, 1894) reports twelve cases of operation by this method. He considers this operation in properly selected cases one attended with less danger than is usually thought, and that if thoroughly and completely performed it is capable of affording such relief as may be in many instances genuinely termed a cure, and that in a class of cases which until a few years ago were looked on as incurable. As a method of diagnosis he strongly recommends bimanual examination. In regard to the selection of cases, whenever a patient has no large amount of residual urine, and can be made comfortable by the passage of a catheter at night or night and morning, and where catheterism is well borne and not difficult or distressing, operative treatment is unnecessary. In complete muscular atony, operation is advisable if the atony have existed only a short time; months duration precludes successful operation. The presence of a large amount of residual urine associated with fair vesical contractility, and not diminishing after regular catheterism, if the patient is in a fair condition and is not sufficiently relieved, is a decided indication for prostatectomy. Cystitis associated with pain and irritation during catheterism is an indication for the operation, as is also the presence of calculi or calculous material. Contraindications are, advanced kidney disease, especially associated with greatly diminished secretion of urea; chronic atony; glycosuria; well-marked degeneration of the blood vessels associated with general senile debility or other organic disease that would render any major operation unwise. In addition to external antiseptics and washing the bladder out with boric solution, the author advises five to ten grains of boric acid and a little saccharin thrice daily for a few days before the operation, so as to render the urine aseptic if possible. He introduces at most only four to six ounces into the rectal bag, in order not to over-distend the rectum and cause rupture or inflammation. The bladder is filled with boric lotion till it is felt above the pubes. The peritoneum can

usually be avoided; but when it must be cut into, it should be dissected up and sutured before the bladder is opened. McGill's scissors or Jessop's cutting ring-forceps are used to remove the portion of prostate desired. Suprapubic drainage has been found sufficient in all cases. In the after-treatment boric acid is given thrice daily, and the bladder is washed out by syringing a solution of boric acid through the urethra to the drainage opening. The drainage tube is removed on the third day, if possible, and the patient is allowed to sit up within a few days after the operation. Recovery follows without general disturbance.—*American Journal of the Medical Sciences.*

PÆDIATRICS AND ORTHOPÆDICS

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A CASE OF PERIPHERAL PARALYSIS FOLLOWING VARICELLA.

The case is reported by William Guy (*British Medical Journal*, 1894, 1, 679). The attack of varicella was mild, but about a fortnight after he was found in the morning to be completely paralyzed in his lower extremities. No paralysis in other parts. For three weeks there was no improvement. Shortly after this he made attempts at walking, but recovery was slow. At the end of three months he could walk fairly well. In addition to the complete muscular paralysis, there was considerable sensory loss. All the muscles of the lower limbs were involved, but the extensors were more profoundly affected. Knee-jerks and plantar reflexes were absent. Abdominal reflexes were active. The child, which was two and a half years old, was slightly rachitic, but there was no sign of syphilis.

INFANTILE SCURVY.

In connection with a paper on infantile scurvy, Dr. Fruitnight reports the following case (*Archives of Pediatrics*, August, 1894). A boy, nine years of age, had, for a long time, subsisted on a diet made up chiefly of salted meats, dry rye bread, and black coffee. When seen by the author he had complained greatly of pains near the knee joints, which his mother termed "growing pains." There were oval swellings about both knee joints; they were very sensitive to pressure, and the boy made no attempt to walk, retaining the same position constantly on his chair, except when he would lie down. His gums were spongy, sore, and swollen, and bled very easily. He showed many minute ecchymotic points. His teeth were loosened and covered with tartar. Breath very foul. He had

alternate constipation and diarrhoea, and was very anæmic. He was put upon anti-scarbutic diet, potatoes, fresh vegetables, fruits, lemonade, beef, and mutton, with five grains of citrate of iron and quinine, with dilute muriatic acid three times a day. Within ten or twelve days he was practically well.

THE ETIOLOGY AND NATURE OF DIPHTHERIA.

In a recent report to the International Congress of Hygiene at Budapesth, Professor Leoffler arrives at the following conclusions with reference to the etiology and nature of diphtheria :

(1) The productive agent of diphtheria is the diphtheria bacillus. Dispute as to the etiological definition of this bacillus exists no longer. We can, therefore, henceforth indicate as diphtheria such forms of disease as are infested with the bacillus.

(2) Not infrequently cases appear in the early stages to the clinical observer as true diphtheria, which, however, are caused by other organisms, as streptococci, staphylococci, pneumococci, and in light or graver form may be mistaken for diphtheria. But the differential diagnosis can be effected through bacteriological research. Statistical compilations on the epidemic spread of diphtheria, as well as on the character of diphtheritic epidemics, cannot represent an exact definition so long as the bacteriological investigation of cases suspected of diphtheria fails to mark a division between true diphtheria bacillus and cases merely resembling diphtheria.

(3) Diphtheria epidemics show a various character, as do many other epidemics of infectious disease. The course of the epidemics is often very light, but also much more severe, indicated by the high figure of the death rate, the rapid infection of the larynx and the nose, and by severe heart and kidney affections, and consecutive paralyses. But also in the same epidemic instances of severe and light forms of disease frequently alternate irregularly.

(4) The variation, of course, will be determined by several factors :
 (a) By differences in the number and the virulence of the diphtheria bacilli ; the causes of the latter are not yet absolutely known. (b) By concomitant bacteria, and, indeed, as much by pathogenic as saprophytic ; the processes of infection with regard to the diseased mucous membranes in the passages and in the nose appear to influence the course of the disease unfavorably, in part by increasing the virulence of the bacilli, in part by weakening the body through absorption of decomposition products.
 (c) By individual tendencies not yet thoroughly recognized.

(5) The diphtheria bacillus can appear in the passages, especially of nose, of separate individuals without causing indications of sickness, which it first induces when it has actually established itself. Lesions of the mucous membranes, small eruptions, catarrhal changes, are favorable to its residence. In brief, meteorological conditions, giving admission by the first approach of catarrh, especially cold, damp weather, appear to favor the sickening from this cause. But this influence has to be more closely observed.—*British Medical Journal*.

RAYNAUD'S DISEASE WITH COMPLICATIONS.

The following account of a case of this rare condition is given by T. K. Monro (*Glasgow Medical Journal*, xli., 267): The patient, a girl, when first seen was twenty months old. She had marked hydrocephalus. There was a striking discoloration of the skin, which was said to have been present at birth, and at one time had existed over the whole body. Cold and crying rendered the discoloration more conspicuous, while heat rendered it less so. At present there are blue mottled patches on the face, legs and arms, and the back. There was extreme lividity or actual gangrene of portions of the extremities, especially of the second left toe and of the second right toe. Apparently there was little or no pain.

The patient was again seen five and a half months later, and two months after that, there being at both times a slight improvement. Three weeks later she was decidedly worse, owing probably to the cold weather; and a slight swelling immediately above the sternum was noticed on crying, which proved to be a diverticulum of the trachea, and a vertical slit in the wall of the trachea could be felt. She now suffers considerable pain, and is constantly crying. A dark-blue, almost black, spot is commonly present on each cheek. The reddish color is well marked on the hands and wrists, the back, and the hip. The second toe of the left foot is decidedly worse, and viewed from above the distal half is of pure blue (not black and not purple) color. The plantar surface is almost entirely blue. There is no blackness on the right foot, and there has never been any on the fingers. Nothing abnormal has been detected with regard to the heart, and the urine contains no albumin, no blood, and no sugar. There is no clubbing of the fingers, no muscular palsy or wasting, and no loss of sensation or swelling of the joints. There is no fever, no urticaria, and no scleroderma.

PATHOLOGY

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TUBERCLE BACILLI IN NOSE.

Straus has demonstrated completely the occurrence of virulent tubercle bacilli in the nasal cavities of healthy persons who had been frequenting localities in which phthisical patients were habitually present.—*Archiv de Médicale Experimental.*

VARIOLA AND VACCINIA.

One would think that it should be a comparatively easy task to determine whether variola and vaccinia are the same disease or not. Such, however, does not seem to be the case.

Jenner believed that vaccinia or cowpox was the result of inoculation of cattle with infectious material from the disease of the horse known as "grease," and thought it probable that smallpox had originated from infection of the human being with cowpox.

Turenne noticed a resemblance between some cases of syphilis and cowpox, and Creighton believes that the cases of supposed infection with syphilis by means of vaccination really shows the reversion of cowpox to its original form of a bovine syphilis.

Crookshank, in 1889, says: "We have been led to regard vaccination as inoculation of the human subject with the virus of a *benign disease of the cow*, whereas the viruses in use have been derived from several distinct and severe diseases in different animals." He further states that the true analogue of cowpox in the human being is syphilis, and that vaccination is of no avail against smallpox.

Some time ago Chaveau and the Lyons commission failed entirely to show experimentally that variola could give rise to vaccinia, or *vice versa*.

More recently Ducamp and Pourguier attempted the settlement of the same question, and, though using all precautions in their work, they, too, have not given a decisive answer. Their inoculations of a calf with human smallpox virus gave rise to the lesions of neither smallpox nor cowpox; but, as further experiment showed, protected the animal against inoculation with cowpox.

A NEW METHOD OF DIFFERENTIATING EBERTH'S TYPHOID BACILLUS FROM THE BACILLUS COLI COMMUNIS.

Gorini says: In gelatine, to which 2 per cent. of urea has been added, the typhoid bacillus grows as usual for the first few days. On the third or fourth day the gelatine, which had been rendered somewhat cloudy by the added urea, clears up, and exhibits all through it small white, evenly-distributed granules, apparently crystals of carbonate of ammonia. The bacillus coli, on the other hand, causes formation of crystals, which are arranged in little heaps along the needle stab only. In addition, numerous gas bubbles are to be seen in the upper clear gelatine, which are apparently formed by the breaking up of urea into carbon-dioxide and ammonia.—*Centr. f. Bact. u. Parasit.*, October 20, 1894.

PATHOLOGY OF TETANY.

Dr. John T. Carpenter, of Pottsville, Pa., read a paper before the American Medical Association in June last upon the above subject. After a short historical sketch, in which he credits Dance with having first noted the disease, he defines it as "a nervous disorder, evidenced by tonic spasms of an intermittent character, which may involve any or all the groups of voluntary muscles from the extremities to the jaws, and which may be reproduced at will, during a period of intermission, by compression of the nerve trunks or great vessels which supply the muscles which have been involved in the spasm." The pathology of the condition has been almost completely unknown, mainly, perhaps, from the rarity with which a fatal termination is seen, but also because of the "various forms under which it has been observed to appear, and the various conditions and circumstances which attend its development." Four forms are spoken of by the writer as having been established, viz.: (a) Rheumatic, or epidemic; (b) a chronic form, due to some debilitating condition—*e.g.*, prolonged lactation; (c) gastric, due to dilatation of stomach; (d) surgical, following removal of thyroids. The first two are very seldom fatal, whilst the last two are commonly so. Surveying the conditions under which tetany develops, we find that they present one feature in common, viz., the opportunity for septic infection. "Tetany, as a general rule, follows upon such

diseased conditions of the system as are observed to produce morbid discharges from mucous surfaces whose absorption is known to cause symptoms in remote parts of the body, due to the circulation of septic poison," and, summing up, "In all cases of recorded observations of morbid processes antecedent to tetany, a probable sepsis may be inferred, and no other cause common to them has, so far, been discovered. It is, therefore, logically necessary to assign the causation of tetany to this fundamental peculiarity as the antecedent factor, and to consider tetany, not as an independent disease, but as a disorder consequent upon some one of those diseases which generate septic poison."—Abstract of paper as published in *Journal of the American Medical Association* for August 4, 1894.

INDURATIVE MEDIASTINO-PERICARDITIS.

The following is an extract from a series of papers published by Thomas Harris, M.D., F.R.C.P., in the *Medical Chronicle*:

Cases are occasionally observed which, clinically, often present great difficulties of diagnosis, and where, at the autopsy, is found an adherent pericardium, with an increase of fibrous tissue in the mediastinum; the increased mediastinal tissue is united to the external surface of the pericardium, and both it and the pericardium are united to the left, and may be also to the right, lung. Such cases have been described by various observers, notably by Kussmaul,* to whom the profession is indebted for being the first to bring the subject ably and prominently before its notice, under the term of "Indurative Mediastino-Pericarditis." They are not commonly seen, but, I think, cannot be so rare as is frequently supposed. Well-marked examples of the affection present a very interesting clinical history, and one which is sufficiently distinctive to allow of the recognition of them before they reach that place of accurate diagnosis, the post-mortem department. I do not propose to consider the acute affections of the pericardium, nor the condition of acute mediastinitis. I desire to refer only to the chronic inflammatory states of these parts, and at the outset ought to explain that I employ the term *chronic* in the sense that the cases run a chronic or prolonged course, and at the post-mortem examination fibrous tissue is the chief morbid product found. Such cases may or may not have an acute onset, just as we see a case of acute pericarditis terminate in firm pericardial adhesions, and it is in the sense in which we speak of an adherent pericardium being a chronic case that the word chronic is here employed.

Pathologically, but probably not clinically, we may recognize three classes of cases of chronic inflammatory conditions in relation to the pericardium and the mediastinum.

* Kussmaul (Prof. Dr. A.), *Berliner klinische Wochenschrift*, Jahrgang, X., 1873, s. 433.

Class 1 comprises cases where there is an adherent pericardium, with marked increase of fibrous tissue in the mediastinum, not infrequently associated with a caseous affection of the lymphatic glands of the mediastinum, and where there is adhesion of the exterior of the pericardium to surrounding parts; a condition which is accurately termed *indurative mediastino-pericarditis*.

Class 2 comprises cases of an adherent pericardium with thickening of the sac and adhesion of the exterior of it to surrounding parts (sternum, costal cartilages, and lungs), but with very little and sometimes no general mediastinitis, a condition which has been termed *pericarditis externa and interna*. Cases of this nature are probably more common than those belonging to Class 1.

Class 3 comprises those rare cases where there is an increase of fibrous tissue in the mediastinum, without any internal pericardial adhesions. To cases of this class the term *chronic mediastinitis* is appropriate.

These cases, as I have said, represent three classes of chronic mediastinal and pericardial affections, which may be separated by the pathologist, but which the physician will have, in the present state of our clinical knowledge, much greater difficulty in separating during life. We may, probably, during the life of our patient, separate cases belonging to the third class from those belonging to the other two, but I think even the most experienced physician will have great difficulty in separating cases belonging to Class 1 from those belonging to Class 2, so as to be able, for instance, to predict that the pathologist will find the appearances of pericarditis externa and interna, and not those of indurative mediastino-pericarditis when the case terminates fatally. It appears also, from a consideration of the records published by various observers, that some of the cases described as representatives of indurative mediastino-pericarditis really belong, not to Class 1, but to Class 2, and would be more accurately described as cases of pericarditis externa and interna.

Editorials.

MANUFACTURERS' METHODS OF APPROACHING THE MEDICAL PROFESSION.

A COPY of the following circular (typewritten) was recently sent to each physician in Toronto :

“DEAR SIR,—If you have not been writing prescriptions for spectacles, we would like to have you begin. You can do much good by doing so, and it will be profitable to you. All you need to do is to write the patient's name on the blank we send you, and we will give you twenty-five per cent. of what the patient pays us for the glasses. We have added to our store our own grinding machinery, and can now grind to order any glass for any complicated case in a few minutes.

“In the past the writing of doctors' prescriptions has been confined to eye specialists.

“We have in our house an expert optician graduate in optics, who tests each eye with the Javal ophthalmometer and the ophthalmoscope. If you send your patients to us, we will benefit them with glasses at a reasonable price, and give you one-fourth of what they pay us. This will be all clear profit to you. And you get credit of prescription.

“We have everything in spectacles in stock, from the cheapest to the best.

“Hoping you will give us a trial, we remain,” etc.

The impudence of this production, which is signed by a Philadelphia Manufacturing Company, is almost sublime. Our doctors are coolly asked to take part in a fraudulent transaction by giving bogus prescriptions to patients, and, after practising such deceptions, to accept commissions on sales of glasses. We sincerely hope that no physician can be found in Toronto who will, for one moment, think of engaging in business so dishonest and so disgraceful.

PRELIMINARY EDUCATION FOR STUDENTS IN MEDICINE

DR. HERBERT SPENCER, in his recent address in the Faculty of Medicine of University College, expressed his opinion that those who intended to study medicine should receive "an education in which science and modern languages form a considerable portion of the study." The *Medical Magazine* says "this advice is sound," but at the same time condemns the methods of teaching mathematics which at present prevail in England. We quote from the *Magazine's* article as follows: "There is no need for the future student to be a specialist in mathematics; but surely a little more should be demanded of him in that direction than hitherto. Personally, we cannot help thinking that the *proper* study of mathematics is at least quite as efficient a discipline for the mind as the study of classics. By *proper* we mean the logical continental method of teaching mathematics, as opposed to the absurd cram system, which, we are sorry to say, still obtains in this country, and which, needless to add, simply sickens the young mind, and brings the budding intelligence down to the level of a penny-in-the-slot machine."

We are inclined to think that both Dr. Spencer and the *Magazine* are treading on dangerous ground when they encourage intending medical students to neglect the study of classics in their efforts to read French and German; but when we find a scholarly and cultured man like Dr. Spencer, and a thoroughly high-class journal like the *Medical Magazine*, in conservative old England, exalting the modern languages, we feel strongly inclined to ask Professor Hutton, of the University of Toronto, what he thinks about the matter. Again we quote from the article before referred to: "Latin has had its day. In the struggle for revival it went to the wall as a language, and any attempt to resuscitate it would, we are convinced, only result in failure. English, French, and German are now struggling for the mastery, and English is surely and steadily distancing its two rivals. Inevitably, the Anglo-Saxon tongue will be the language of scientific congresses of the future. Others put forward claims for Greek with as little justification. It is a fact that the great majority of English medical men at the present moment have but a very superficial knowledge of the classics. . . . We admire the enthusiasm of those who plead for a return to Latin or Greek as the language of medicine, but we are bound to say we see no prospects whatever for their ultimate success. As to Volapuk and other absurdities of the kind, they have been neatly disposed of by *Punch*: What is Volapuk? The universal language. Who speaks it? Nobody."

PHYSICIANS AND THE INDIGENT POOR.

WE publish in this issue a letter from Dr. T. E. Kaiser, of Oshawa, giving details of his experience in looking after a destitute family during a prolonged illness. It may be thought by some that the doctor did not receive very fair treatment from the reeve and council of East Whitby ; but, before jumping at a conclusion in that direction, it may be well to consider their actions carefully from start to finish.

In the first place, the action of the reeve in the interest of the unfortunate family was very kind and considerate, and his pledges to Dr. Kaiser, considering the urgency of the case, were quite justifiable. We presume from the tone of the letter that the doctor thinks the action by the reeve and council in subsequently ignoring these pledges was scarcely just or honorable. So it might appear on a cursory glance, but a careful examination of all the circumstances of the case throws much light on the matter, and ought to carry weight with those who desire to form an independent opinion.

It is only fair to assume that Mr. George Mowbray is a just and honorable man. He is a Patron, and we have been told by a member of that body that the Patrons are all honorable men. Mr. Reeve Mowbray and his council, moreover, were good enough to consider the matter carefully at two different meetings. They were almost persuaded to act honestly ; but, unfortunately, there was a colossal obstacle in the way—a precedent. This honorable body of wise and good men, after mature deliberation, decided that it would be dangerous to establish the precedent that it was right to redeem a pledge given to a doctor (no matter how reasonable or just that pledge might be). After all, we must confess that Mr. George Mowbray has shown that he has a great head. His cuteness and diplomacy almost reached the dizzy heights of some form of modern statesmanship. Probably his constituents will be proud of the way he *did up* Dr. Kaiser ; perhaps they will send him to parliament some day.

Dr. Kaiser did not accept the position like a reasonable man, but was innocent enough to think that he could get justice in a court of law. We have no desire to criticize the judgment of the court ; we presume the judge's interpretation of the law was correct, but we think that in this instance law and justice were two very dissimilar things.

We have received no intimation as to what Dr. Kaiser's course will be in the future, but we think we can tell. It may be that he has registered some rash vows with reference to the "indigent poor" ; but, when he receives a message some day that the only child of poor, but deserving, parents is dangerously ill, he will forget all about East Whitby's representative Solons, and go at once to the afflicted family, and do all that he can to assist them in their hour of sore distress. Physicians are not saints, but there is a certain amount of good in them.

Correspondence.

PHYSICIANS AND THE INDIGENT POOR.

To the Editor of THE CANADIAN PRACTITIONER:

SIR,—I desire to bring before the notice of my fellow-practitioners, through the columns of your valuable journal, a matter somewhat practical in nature, the result of which may be of benefit to some one who, under similar circumstances, may be led at some future time into the same pitfall that I stumbled into. During these times of financial depression, it seems to me almost as necessary for the physician to be posted on the proper methods of collecting accounts as it is to be versed on the latest statistics of antitoxine. My unfortunate experiments in the field of money investigation may be instructive, even though they proved a failure. I will briefly outline the case to which I desire especially to refer; it is one of "the indigent poor." A family of this class fell into my hands in the spring of 1893. From April till August several members were taken ill at different times with a variety of ailments, inflammations, diphtheria, etc. In August, however, typhoid fever broke out in the ranks of the family circle, and at one time there were *four* cases in the house. This last calamity reduced them to the verge of necessity, and it was seen that some organized effort must be put forth or the family would die of neglect, as father, mother, and two children of nine and twelve years respectively were the victims of this disease. Being residents of the township of East Whitby, the reeve of that municipality, Mr. George Mowbray (a Patron, by the way), was asked to come to their relief. This he did, calling at my office during the early part of the siege, which lasted for thirteen weeks. He visited the cottage with me, and assumed, on the part of the township, the financial responsibility of the outbreak, arranged with a neighbor of the family to provide the necessities for the house, engaged a nurse, whom he paid one dollar a day, and also her board bill in a house next door. He charged me to see that the nurse did her duty by the afflicted, and assured me that I would get my pay from the council, as the case was an extreme one. "Stick to them" was his command, and I did so, fully

thinking that I was then working for the corporation of East Whitby. The cases ended in recovery, and all debts were paid by the council—*except the doctor*. Now comes the “tug of war.” The doctor’s bill came before the council (most of the members of which I am personally acquainted with, and this I am bound to say, *individually* they are a very decent lot of fellows, but *collectively* they are as mean as a man without a soul or without a heart). The affair was discussed, and they decided that, although the case was one of an extreme nature, as they never yet consented to pay a bill presented by a doctor they were determined not to establish a precedent. The affair was laid over for consideration, and at a subsequent meeting they voted the magnanimous sum of fifteen dollars towards payment for *drugs*, which was handed me for my work in these long, tedious cases. I protested, and finally decided to sue in the Division Court, which I did on December 4th, 1894. Every feature of the case was gone into, and it is the judgment and rulings of the case that I desire to emphasize. The judge reserved judgment in the case in order to deliver it in writing :

(1) He rules that if my claim is maintainable at all, it can only be from the time of the reeve’s first visit, notwithstanding that he paid other debts from the beginning of the outbreak.

(2) After reviewing the evidence as to what had passed between me and the reeve, the judgment says : “ But putting the matter in the most favorable light for the plaintiff, I cannot find that the reeve had any authority to bind the council at all.”

(3) “ It was argued that because the defendants paid for the nurse that, therefore, they should pay the doctor. This does not follow.”

(4) “ It is also suggested that the defendants acknowledged their liability by paying \$15.00 on account. . . . No effect, therefore, can be given to this contention.”

(5) “ I dismiss the action ; I give no costs to either party.”

In the judgment delivered I read as follows : “ Without minutely going over the authorities cited, the following propositions of law as to the liabilities of municipal corporations may be deduced therefrom :

“(1) All such contracts must be by by-law under seal.

“(2) Where there is no by-law, and work has been done for the corporation, it is liable if they have received the benefit of such work.

“(3) They are liable for a breach of statutory duty.”

With respect to these points the judgment says in my case : “ There is no *pretence* that the defendants are liable under the first head.” As to the second, it is stated that the only possible claim could be in the fact that the restoration to health saved the corporation one or more pauper funerals, and my claims are waived under this heading. My claims under the

third heading are overruled also, so that necessarily my only possible means of getting recognition would be under the first. From this we learn that, in case of accident or emergency to the poor, a doctor can only claim corporation pay when the council gives the "contract by by-law under the seal." Meanwhile, what becomes of the patient if the doctor must wait till the council meets and grants the contract? It does look like a farce to me that a reeve, in case of distress, can make a doctor believe the corporation will pay him, till the case is over, and then bid defiance to him and all the laws of creation.

I would like to know the methods adopted by other townships in such cases, and, if this is the common lot of hard-working, self-sacrificing country practitioners, the sooner the Medical Council takes up the matter and gives us some more satisfactory legislation on the subject the better it will be for all concerned. This is a subject which might well call forth some of the powers of the war-horse from Division No. 12.

T. E. KAISER.

Oshawa, Dec. 20, 1894.

Meetings of Medical Societies.

MARYLAND CLINICAL SOCIETY.

STATED meeting held December 7th.

Dr. Rohé read a paper entitled, "Clinical Observations upon the Relation of Somatic Diseases to Mental Derangement." This was followed by a paper from Dr. Preston on the "Etiology and the Pathology of Hysteria."

Dr. Wilmer Brinton read a paper on

THE INDUCTION OF LABOR IN NEPHRITIS,

with report of cases :

I have been induced to bring the subject of the induction of labor in nephritis to your notice by the reading of a paper on "The Significance of Albuminuric Retinitis in Pregnancy," written by Dr. R. L. Randolph, of this city. Dr. Randolph reports five cases of albuminuric retinitis occurring in pregnant women whom he has seen during the past two years, in which cases he decided, by ophthalmoscopic examination, whether it was the proper treatment or not to induce labor for the purpose of saving the eyes, and perhaps the life, of the woman. In the cases related not only were the eyes saved where labor was induced, but in the cases where he advised the continuation of pregnancy the women escaped eclampsia. Judging from the first case reported by Dr. Randolph, there must be some difference of opinion even among oculists as to when premature labor should be induced, for the report of this case which I shall now read will show that the first oculist consulted advised a different method of procedure from that recommended by Dr. Randolph.

CASE. Mrs. M., æt. 31 years, three children living, and up to the fourth month of her third pregnancy had enjoyed good health. In the early part of the fifth month she began to have violent headaches, which could only be relieved by strong anodynes. They persisted for two weeks, when she noticed that her sight was growing dim. It continued to grow worse, until she was practically blind in one eye, and the sight in the other but little better. At this time an oculist was called in, who pronounced it albuminuric retinitis, and found the urine rich in albumin

and some casts present. The induction of labor was advised, performed, and a dead child born. The woman had convulsions, but recovered, with complete restoration of sight. One year later she again conceived, and in the fourth month was attacked with similar headaches. Fearing that her sight would again become bad, she consulted an oculist, who advised that if she waited for normal labor she would lose her sight, and, probably, her life. Dr. Kelly was sent for to induce labor, but referred the case first to me. I found the vision $\frac{20}{12}$ in both eyes, and a low grade of hyperopic astigmatism. I found absolutely nothing to denote progressive disease in the fundus. The question was whether or not to induce premature labor. There was a faint trace of albumin in the urine, but no casts. I concluded that the evidence did not justify the operation. My advice was followed, and the patient sent home, to give birth, a few months later, to a boy.

The conclusions were as follows :

(1) Visual disturbances occurring in the first six months of pregnancy, and especially when associated with violent headaches, frequently mean albuminuric retinitis, and, if this condition is found, to save sight pregnancy should be at once terminated.

(2) Visual disturbances showing themselves in the last seven weeks of pregnancy, while indicating the same retinal lesions, are of less gravid import in so far as sight is concerned, and, unless they are very pronounced, and associated with widespread ophthalmoscopic changes, should not, in themselves, call for the induction of labor.

(3) The occurrence of renal retinitis in one pregnancy does not mean that the woman will be likewise affected in a subsequent one. And, even though headache be present and albumin found, so long as the fundi are free from signs of existing retinitis the question of sight will not be considered.

The very grave prognosis in cases of eclampsia occurring in the pregnant woman, the woman in labor, or the parturient, makes the question of nephritis a very interesting one to the obstetrician. Experience and statistics prove that women who have chronic nephritis conceive and carry their children to full term without having convulsions. Indeed, it seems that, if they do not abort, they are less liable to eclampsia than women who for the first time develop kidney disease during pregnancy. Cases of nephritis occurring in the pregnant woman, whether chronic or acute in character, must make the physician in charge anxious about the outcome of the case, for the rates of mortality vary from 25 to 40 per cent. for the mother and from 50 to 75 per cent. for the child, when we have eclampsia occurring during pregnancy, or before the completion of pregnancy. The question comes to us for decision whether we shall follow conserva-

tive treatment, which, at best, will only ward off impending danger, or whether it is best to place the patient at once in a position of comparative safety by the induction of premature labor. Dr. Lusk says: "The weight of authority seems to me favorable to procrastination, the interruption of pregnancy being regarded as an extreme measure, justifiable only in case of utmost peril. But my own convictions are clear that, so soon as grave cerebral symptoms develop, the period of folded hands has passed."

The four cases I shall report have come under my notice during the past eighteen months, and, while in only two cases was premature labor induced previous to convulsive movements, yet in the other two, although only seen first when in convulsions, premature labor was induced, as they were not at full time.

CASE 1. Mrs. R., mother of nine children, and between seven and eight months advanced in her tenth pregnancy. Her physician had watched her closely for some weeks, and made diagnosis of nephritis. He found albumin and casts in the urine; specific gravity, 1010. Eyesight very much impaired, and rapidly growing worse; headaches violent for days, and several times had had convulsive movements. At my first visit we decided upon premature labor, and, under strict antiseptic precautions, I introduced a bougie at 4 p.m. on Friday afternoon. At midnight of the next day she was delivered of a living child. During the time of the induction of labor she had to be kept under the influence of potassium bromide and chloral hydrate. For a week or two both mother and child did well, but finally all her symptoms grew worse, she became totally blind, went into coma, and died, two months after the birth of a child.

CASE 2. Mrs. A., æt. 40 years, pregnant for the ninth time, and supposed to be eight months advanced. She was blind, œdematous, pulse rapid, and urine full of albumin. There were very marked indications of beginning convulsions. Treatment had been: Infusion of digitalis, compound jalap powder, and chloral hydrate and bromide of potash. I introduced a bougie as in Case 1. Hot vaginal douches were given, and some eleven hours after the mother was delivered of a living child. Some nine months after her physician writes me that the child died within a month, but that Mrs. A. recovered with good sight.

CASE 3. A colored out-patient, with a history of eleven convulsions before my assistant saw her. An examination showed pregnancy of eight months. Child living, woman aged seventeen. She was removed to the hospital, and chloroform, bromide of potash, and chloral hydrate given to control convulsions. Bougie was introduced, but later we had to dilate with the finger. Simpson's forceps were applied, and, after great traction, a dead child delivered. The mother never regained consciousness; died four hours later, having had fifty or sixty convulsions.

CASE 4. Mrs. V. C., in her first confinement. During her pregnancy had been well. Had been on the street the day previous and slept well that evening. In the morning, while at breakfast, she suddenly clapped her hands to her head, and cried, "I cannot see," and fell to the floor in violent convulsion. Within thirty minutes she had six more. Chloroform was given during convulsions, and chloral every hour during the intervals, when the patient had intelligence enough to swallow when told to do so. With the assistance of Dr. Watson, dilatation was made by the finger, Simpson's forceps applied, and a living child delivered. The woman had, in the next thirty-six hours, about ten severe convulsions, and was practically unconscious for forty-eight hours afterwards. Hypodermics of morphia of one-third of a grain were used, and we saw marked results for good after each dose. She gradually grew better, but complained of bad sight and violent headaches for nearly two weeks. She has done well ever since.

In the brief report of these cases I have only mentioned a few of the many methods of inducing premature labor, but in closing I wish to commend the method of dilating the cervix with the finger.

Dr. Michael: This question calls always for quick action, and delay is dangerous. I wish to say a word about the diagnosis. It is made often by the ophthalmologist. A doctor should make the examination of the kidney lesion himself, and it should be so well known to the obstetrician that he should not let the patient go to blindness. I should feel shabby if an ophthalmologist had to tell me of the existence of the disease. As to the treatment, I disapprove of Dr. Brinton's method of producing labor, that of using the bougie when the woman is having convulsions. Rapid dilatation by the finger is the safest and best method of bringing it on, though it is a difficult and troublesome plan. When the hand is used, you run no risk of getting into the wrong place or doing any damage. The two remedies I like best are morphia and venesection. I do not know what venesection does except bring out a lot of bad blood, but it most surely produces good results. He believes the results are better on the both extremely satisfactory, and that the latter has not been properly tried.

Dr. William T. Howard is a strong advocate of it. Before coming to Baltimore he had treated seven cases by free bleeding, and saved them all. The next six cases he saw here were treated differently, and all died. The next one was bled and got well. I believe the results are better on the average than are to be obtained in any other way.

Dr. Hiram Woods: The question of the eye-symptoms is apt to be misunderstood unless you bear in mind that there are two varieties of blindness associated with albuminuric conditions in pregnancy. One is the sudden failure of sight, such as described by Dr. Brinton, where there is no retinal lesion; the other a case of true inflammation, with white

plaques and decided retinal changes. The question is whether in any of Dr. Brinton's cases there was true albuminuric retinitis. There were no ophthalmoscopic examinations made, and in all he said the blindness was sudden, and, with one exception, all got well. I can recall a patient in my care who had albuminuric retinitis in her first pregnancy, and her sight was reduced to a very small point. I followed her through four or five pregnancies, and, although nearly blind in each, her sight was always restored to the point it had been left during the first pregnancy. Four of Dr. Randolph's cases had these changes, the other did not. The first case of his which was referred to Dr. Brinton was not properly diagnosed. With a woman in her first pregnancy with ensuing albuminuric retinitis, the question suggests itself: Is premature labor in the fourth or fifth month justifiable? I should think it was, but how would that be regarded from an obstetrical point of view?

Dr. Todd: I find that in New York the custom among the physicians is to justify the operation for the saving of life, but not simply to save eyesight.

Dr. Norment: I wish to mention two cases seen recently. One in her fourth pregnancy. In her first she had eclampsia five or six weeks prior to labor, and conservative treatment was adopted. She was delivered of a child which had evidently been dead for some time. In her second, she had eclampsia during labor, and was delivered by forceps of a living child. In her third, she had a perfectly normal pregnancy and labor. In the fourth I was sent for, and found her in eclampsia in the eighth month of pregnancy. She was very large, weighing 240 pounds. There was no evidence of the onset of labor, and the difficulties of inducing labor, the condition of the patient, and the fact that she had been through the thing before successfully, led us temporarily to postpone the induction of labor. We followed Dr. Michael's plan and bled her freely. She was stone blind, and I found any number of white plaques in the retina. Five weeks later she was delivered of a stillborn child. There was little return of vision until after labor, but later it came up to about one-third normal.

CASE 2. I found a woman eight months pregnant in eclampsia for several hours, recognizing no one, and complaining of pain in the head. I bled her freely, she became conscious at once and was altogether better. She had been perfectly blind, but soon was well enough to read the newspaper. She was afterwards delivered of a dead child. She had, I think, uræmia without retinitis; I found no albumin in the urine.

Dr. Brinton: Where we have time certain methods can be used for inducing labor, but when in a hurry the use of the finger is best. We did use morphia in one case, and with good results. I once reported four cases in which I had bled, and three recovered. In the next three, treated in the same manner, all died.

PATHOLOGICAL SOCIETY OF TORONTO.

THE first regular monthly meeting of the winter was held in the Biological Building, October 27th, 1894, the president, Dr. Greig, in the chair. After the transaction of some business introduced by the executive, the following programme was proceeded with :

(1) "Rupture of the Heart," with specimens. Drs. Wm. Oldright and R. J. Dwyer. Discussion by Drs. Wm. Oldright and H. Hill.

(2) "Hæmorrhagic Pachymeningitis," with specimens. Dr. J. Fotheringham. Discussion by Drs. Graham and McPhedran.

(3) "Pulmonary Tuberculosis," with specimens. Dr. J. Caven.

(4) Microscopic specimens from a case of malignant disease. Dr. H. B. Anderson.

(5) Specimens of diphtheritic membrane forming casts of the turbinated bones, presented by Dr. J. Fotheringham.

Dr. Dwyer presented an extremely interesting specimen of rupture of the left ventricle, occurring in a female of advanced years, due to local fatty degeneration of the muscle, secondary to gradual occlusion of the coronary artery supplying the region of the tear, from atheromatous changes, part of a general arterio-capillary fibrosis. The specimen was discussed by Drs. Amyot and Barnhart.

The papers of Drs. Oldright, Fotheringham, and Hill are held for future publication.

Owing to the absence of Dr. Caven, his paper was not presented.

Dr. Anderson's specimens were held over until his paper could be presented.

Specimens of diphtheritic membrane removed from the nasal passages by the use of a pyrozone spray were presented by Dr. Fotheringham.

The meeting then adjourned. The following are the officers of the society for the current year: President, Dr. King; vice-president, Dr. Nevitt; treasurer, Dr. Primrose; corresponding secretary, Dr. Barnhart; acting recording secretary, Dr. Hill.

The second regular monthly meeting was held in the Biological Building, as usual, on the last Saturday of the month, November 24th, 1894, the president, Dr. Greig, in the chair. The attendance was good, and an interesting programme was presented, as follows :

(1) "Uterine Mole," with specimen. Dr. Carveth.

(2) "Histological Changes in the Liver in Typhoid Fever," with specimens. Dr. Amyot.

(3) "A Case of Malignant Disease of the Intestine," with specimens. Dr. Anderson.

(4) "Friedreich's Disease," with specimen. Dr. Meyers.

(5) "Bacillus of Bubonic Plague," with specimens. Dr. J. Caven.

Dr. Carveth's specimen, removed by the finger from the uterus of a woman of thirty-six, who had been suffering from metrorrhagia, more or less, for three months previously, consisted of a grayish membrane moulded over an elongated blood clot. Dr. Scadding thought that villi were present at one part of the outer surface, and referred to the erosion of the uterine walls sometimes accompanying the formation of uterine moles. Dr. Fotheringham suggested that the formation of a clot in a membrane such as that presented might occur in membranous dysmenorrhœa.

Dr. Caven's paper included some historical notes of the plague, with an account of its symptoms and morbid anatomy. The specimens presented were from a case occurring during the recent outbreak in Canton.

The papers of Dr. Amyot, Dr. Anderson, and Dr. Meyers, presented as initiatory addresses, will be published hereafter.

Dr. Anderson's specimens were referred to a microscopic committee for further examination.

Specimens from a case of ununited fracture of the femur were presented by Drs. Wm. and H. Oldright. The patient, an old man, had sustained a fracture of the upper end of the shaft by a fall from a tree. He had also suffered from cystitis. At the post mortem, conducted by Drs. Dwyer and H. Oldright, general peritonitis was found. The bladder wall was immensely hypertrophied, and the ureters dilated, especially on the right side, where there were also pyelitis and hydronephrosis. The left kidney and the bladder presented the slaty pigmentation of chronic inflammation. Posteriorly, the bladder wall was softened. The middle lobe of the prostate was enlarged.

Dr. Caven thought that the whole condition of the urinary tract might be accounted for by the presence of the enlarged middle lobe of the prostate. The peritonitis was, no doubt, secondary to the septic processes in the urinary tract.

Dr. Peters accounted for the non-union of the fracture, in spite of the formation of both ensheathing and pin callus, to the septic condition of the patient. He considered dilatation of the bladder more common than hypertrophy, as a result of enlarged middle lobe of the prostate.

Dr. Greig referred to a case recently reported by Mansell Moullin. The patient, a man over seventy years of age, had suffered from cystitis, associated with enlarged prostate, for years. On removal of the testicles, marked improvement occurred within a week, due to diminution in the size of the prostate. Considering that the prostate becomes congested during sexual excitement, and that chronic enlargement frequently occurs in those indulging sexually to excess, the pathological connection of this operation with the disease is plainly seen.

Dr. Oldright had obtained a history of faulty catheterization of his patient, which he considered accounted for the cystitis.

The executive recommended that an open meeting of the society be held. After some discussion, it was decided to hold an open meeting on January 25th, 1895. Corresponding members are invited to communicate to Dr. Barnhardt, Little York, corresponding secretary of the society, any interesting subjects which they may desire to present on that date.

The meeting then adjourned.

The third regular monthly meeting of the Pathological Society of Toronto was held in the Biological Building, December 29th, 1894, the president, Dr. Greig, in the chair.

The following specimens were presented :

Dr. Peters presented two specimens. The first was a neuroma developed in the stump of a left arm amputated on account of a bad crush in a railway accident. After the operation there had been some suppuration. Healing followed, however. About one year later pain was felt in the distribution of the median and ulnar nerves in the hand. The neuromata could be readily felt at the site of operation, and the thickened nerve cords traced to the subclavicular region. There was local tenderness of the stump. On operation, the tumors were easily found and removed, as also were most of the branches of the brachial plexus. The artery was merely a fibrosed cord. Improvement followed. The local pain and tenderness disappeared, but some pain persisted, referred to the palm of the hand. The proximal end of the excised nerve was healthy. Dr. Peters introduced Mr. Hunter, an undergraduate of Toronto University Medical Faculty, who had examined the specimens microscopically. Mr. Hunter presented a detailed report of the conditions found. The tumors consisted chiefly of broken-up nerve fibres and fibrous tissue.

Dr. Graham thought that this condition was similar to that found in keloid, and in some cases of molluscum, and that the occurrence of neuromata was probably due to some constitutional peculiarity of the patient.

Dr. Peters then presented a sarcoma of the thigh removed from an Irish setter. The tumor had been growing for several weeks at the upper part of the femur, and was hard and pulsating. The foot was much swollen, and lameness had, of course, resulted. On dissection the growth appeared to have commenced near the neck of the femur, perhaps subperiosteally. The tumor was massive, whitish, soft, and homogeneous. Fresh teased preparations showed cells of various sizes and shapes, some spindle, but more irregularly round; also muscle fibres. Hardened specimens showed on section a well-marked sarcomatous growth, in the mass of which lay muscle fibres. Dr. Peters considered these as remnants of the original muscle which had been extensively

infiltrated by the new growth, and considered that the specimen demonstrated the occurrence of infiltration in sarcomata. Secondaries were not found, but a complete post mortem was not held.

Dr. Primrose thought that while a sarcoma originating in fibrous tissue would expand and compress the fibrous tissue about it, thus forming a capsule and failing to infiltrate, yet a growth originating in other tissues might, as in this case, infiltrate freely.

Dr. Caven referred to the comparative frequency of the occurrence of sarcomata in the lower animals, especially in the extremities, and pointed out their tendency to mucoid degeneration, their feeble malignancy, and the usual absence of secondaries. In the cow and horse melanotic sarcoma, which is very malignant in the human, is not very uncommon, nor is it particularly malignant.

Dr. Primrose then presented a leg removed from a boy of 13 years. The leg was absolutely useless from infantile paralysis, hanging loose, and sometimes knocking the patient's crutches from under him. There had been complete paralysis of all the leg muscles, and the psoas appeared to be the only muscle in the thigh capable of movement. Dissection showed apparently complete conversion of the soleus and gastrocnemius muscles into fibrous tissue. The posterior tibial nerve was extremely small. There was a very large amount of subcutaneous fat, contrasting with the complete absence of inter-muscular fat. Dr. Primrose suggested that this condition supported the view that the trophic nerves of the skin were distinct from those of the muscle. It was held by some authorities that the former passed out of the cord through the post root, the latter through the anterior. Sections of the nerve and muscle are to be presented later.

Dr. Caven suggested that the deposit of subcutaneous fat might be simply a provision of nature to preserve the contour of the limb, compensatory to the atrophy of the muscles, and referred to the large deposit of fat occurring in the pelvis of an atrophied kidney, especially in cases of unilateral atrophy, where the fat helped to fill up the space formerly occupied by the kidney.

Dr. McPhedran thought the condition more likely due to a local anæmia, which generally favors fat deposit, pointing out that in infantile paralysis the local circulation was poor and nutrition low.

Dr. Oldright suggested that the nutritive material which, under normal conditions, would have supplied the muscular tissue might, in atrophy of the muscle, be stored up as fat subcutaneously.

Dr. Graham referred to the deposit of fat between the muscles in cases of acute muscular atrophy, as also in pseudo-hypertrophic muscular paralysis. He thought that the existence of separate trophic centres for the skin and the muscle improbable.

Dr. Primrose pointed out that the deposit of fat, if due to local degenerative changes, would have been more diffuse.

Dr. Caven then presented a specimen and photographs, showing tubercular cavities in a human lung, with exposed vessels traversing it, some of which exhibited aneurismal dilatations. He pointed to this as a frequent source of hæmorrhage in phthisis. Also a second fresh specimen, showing bronchiectases, associated with abscess of the brain. Dr. Graham supplied the clinical history. The case will be reported in full later.

Dr. Anderson submitted a microscopic specimen of colloid matter removed from the uterus by curetting. Six months ago, a large amount of colloid material had been obtained, and a similar large amount recently. Between the two curettings a thin colloid discharge had been constant. He considered the case one of colloid carcinoma, and referred to the glandular polypoid growth described by Thomas and Munde as springing from the cervix.

Dr. Barnhart's specimens were not ready. Dr. Barnhart referred to the ataxic symptoms presented by young puppies before their eyes were open, and stated that he had found the cord in such cases not fully developed. He proposed to present a complete account of the histological features later.

Dr. Cameron's specimens were presented in his absence by Dr. Primrose. They consisted of an ovarian cystoma removed from the right side and an ovarian papilloma from the left side of the same patient, a married woman of about 46 years, who had borne two children. A tumor had first been observed on the right side in September last about the size of a goose egg. The cystoma was adherent by soft, easily broken adhesions to the anterior abdominal wall at all points of contact and to the great omentum, necessitating ablation of a portion of the latter on account of hæmorrhage. The surface of the cyst was soft and friable, giving way under forcipressure, the pedicle breaking spontaneously when subjected to the weight of the cyst wall. The papilloma occupied Douglas' cul-de-sac, and was non-adherent.

Dr. Caven thought the cystoma probably sarcomatous in origin. Sections will be presented later.

Dr. Hill presented gross and microscopic specimens of caseous matter found in urine on two occasions from the same patient. On each examination the urine was clear, acid in reaction, and quite free from albumin, pus, or blood. The particles found were whitish or yellowish, soft and cheesy, varied from the size of a pin's head downward, sank quickly in the urine after being shaken up, and were insoluble in acetic acid. Under the microscope they presented a granular appearance, and at intervals crystals resembling those of neutral calcium phosphate, conical in outline, and sometimes arranged in rosettes. The bacillus tuberculosis was

detected in some of the particles. The statement of Von Jaksch that material, apparently caseous, is found in some cases of non-specific inflammation of the genito-urinary tract was referred to, and the explanation offered that these conditions might have been tubercular, the particles examined having, nevertheless, been free from bacillus tuberculosis, as in some of those in the present case. The history of the patient could not be obtained further than that rapid emaciation had occurred. Owing to the absence of albumin and pus, a tubercular condition had not been suspected.

Dr. Caven mentioned the opinion of Malassaz that typical tubercular processes were occasionally found due to a peculiar coccus growing in zooglœic masses. Courmont believed that a similar condition might occur as the result of the action of a bacillus distinct from Koch's bacillus tuberculosis; and referred to the difficulty of finding the bacillus tuberculosis in some cases of undoubted tubercular caseation in lymphatic glands, in the liver, and, in cases of acute miliary tuberculosis, in the lungs. He referred also to a bacillus found by himself in a case of ulcer of the thigh, which gave the stain reactions for bacillus tuberculosis, but not the typical appearance. The ulcer had healed under a course of iodides and mercury.

Dr. Peters believed that in many cases where the bacillus could not be found on examination inoculated guinea-pigs would develop tuberculosis.

Dr. Cameron agreed with this, and referred to inoculations made with bodies from knee-joints and tendon sheaths, which had produced tuberculosis, although the bacillus had not been otherwise demonstrated.

Dr. Graham referred to similar experiments in cases of sero-fibrinous pleurisy, and to the investigations of a Russian observer, who found the bacillus absent in only very few cases of pulmonary phthisis.

Mr. McKenzie thought that spores might be present in material where bacilli were not found, thus accounting for its infectiveness on inoculation into animals. He referred to certain granular bodies recently noted as retaining the differential stain in cases where bacilli were absent, and which were by some observers regarded as spores; also to a case where, in alkaline urine containing pus, but no caseous matter, he had found a bacillus giving the stain reaction of bacillus tuberculosis, but differing from it in appearance, which he believed to have been the smegma bacillus.

The report of the microscopic committee was withheld, being incomplete.

The meeting then adjourned to examine the microscopic specimens presented.

In accordance with a resolution passed at the last regular monthly meeting, an open meeting will be held on the last Friday of January,

1895. Corresponding members of the society are invited to give notice to Dr. Barnhardt, corresponding secretary of the society, Little York, of any specimens or papers which they wish to present to the society on that date.

TORONTO CLINICAL SOCIETY.

THE twentieth regular monthly meeting of the Toronto Clinical Society was held in St. George's Hall, Elm street, Toronto, commencing at 8.30 p.m., January 9th, 1895.

Dr. Ryerson, the president, occupied the chair.

There were present Drs. Aikins, Meyers, Graham, Baines, Grasett, E. E. King, Leslie, Spencer, J. A. Temple, Chas. Temple, Atherton, Cassidy, Fotheringham, Ross, Johnson.

The minutes of the nineteenth regular monthly meeting were read by the secretary and approved.

Dr. Leslie presented a case of

DISLOCATION OF THE ACROMIAL END OF THE CLAVICLE UPWARDS, which showed an excellent result. In reference to the case the doctor said :

This young fellow was thrown out of a buggy in June last. My only excuse for showing him is that so very few cases recover without some displacement, and they very seldom have such perfect use of the arm as this man has. He is an hostler, and consented to stay in bed for a longer time than usual, because he requires the use of his arms so much above his head. He has got the perfect use of the arm. The fracture was first put up with strapping, but he was so thin that it cut through his flesh, and it could not stand anything but an ordinary bandage after that. When I looked at it last it did not seem to be any higher than the other one, but I see to-night it is a shade higher than the other side. There was considerable displacement at first. They sometimes have a little loss of power in their upward movements.

Dr. Grasett : Only when it is very bad, I think, in all the cases I have known. I think you will see it stated in surgical works as well. I have not looked it up for some time. A man may have a good deal of displacement, and if he gets good treatment, and it gets anywhere near the original point again, he gets almost the perfect use of his arm—at any rate, good use.

Dr. Atherton : In cases of this kind, a broad strip of adhesive plaster passed around the elbow, and carried over the back and around over the shoulder, and brought across the displaced bone so as to make a pressure somewhat upon it and keep it steady ; they claim good results from that treatment. It is better than keeping in bed, which is very irksome.

Dr. E. E. King presented a specimen of

OSTEO-ENCHONDROMA.

The case I wish to show to you is one I reported on about two years ago (CANADIAN PRACTITIONER, February, 1893). It is a case of osteo-enchondroma of the hand, of which I left two fingers, and we did not at that time remove this growth, owing to the fact that I was not sure as to the ultimate result of a removal of a portion of the growth from the bone; but as you will see in the photograph that over the knuckle of the index finger was a growth of considerable size, I should say about equal to half an ordinary egg, and, as the extensor tendon of the forefinger was involved in it, I separated the tendon as much as possible and shaved the growth down as nearly to the normal size of the bone as I felt justified in doing, without running too great a chance of destroying the whole bone. Since that time the little finger has regained a considerable amount of motion, and the growth on it has increased only slightly. I think the little portion we left on the index finger of the upper part has even got smaller. The question arises, since that remaining on the little finger is growing only slowly, as to the advisability of any surgical interference with that growth at the present time. He is a man who at that time did very heavy work. He was on the railroad, and when he had those lumps on his hand he could wield the hammer and hold a chisel, and since that has been removed he has gained a great deal more use of his hand. I asked him to come up this evening, so that I might present it and get the opinion of the society on the condition that is remaining there.

Dr. Grasett: These growths are always very slow, and as he has good use of his fingers he should wait and keep it under observation. I do not think you can take any active operation on it at the present time. It can be removed at any time, if necessary.

DISPLACEMENT OF THE LIVER.

Dr. Graham: This patient I present to-night is a case of abdominal disease, in which there appears to be a displacement of the liver to the left side; the displacement, as far as we can make out from the history of the case, has been the result of an injury. There is nothing special about the family history. The boy was raised in the city of London, England, and after working in various places in London, on the Thames embankment, afterwards in a newspaper office, finally went to Mr. Fegan's Home for Boys, and was sent out to this country. Last April he came to Canada, and was sent to the Boys' Home, on George street, in this city, and on May 1st he was sent to Oakville, where he engaged with a farmer and did farm work. He says he did not work hard, has always been healthy, never had a day's sickness until he crossed the Atlantic. During the latter part of last July the patient met with a severe accident while driving a

wagon loaded with stone. He slipped off the front of the wagon between it and the doubletree, landing in front of the wagon wheel. The wheel passed completely across his body from right to left, fracturing several ribs on the left side. The wheel struck the body, he thinks, just below the border of the ribs on the right side and passed completely across, breaking seven or eight ribs. He was unconscious when picked up. Dr. L. H. Aikins was called and dressed the fractured ribs. He attended frequently, the patient being under his care for three weeks, and he says that after that he returned to the Boys' Home in this city early in September. He was without medical attendance since, although he has never fully recovered from the accident, suffering more or less pain continually. On November 19th he engaged with a tanner to learn the business. He, however, found it impossible to continue at this employment, suffering severe pains in the upper part of the abdomen. His employer took him to see a doctor, who said he was suffering from ascites and advised him to return to the Home. He was seen by Dr. Thorburn at the Home, and he was sent to the hospital. The patient complains very much of a distended abdomen. The patient is only fairly well developed; there are signs of neglect in the child; small limbs in proportion to the body and somewhat dwarfed. He has rickety nodules on the ribs. He has somewhat the appearance of having been a badly nourished child. There is no special morbid appearances except those. These nodules on the ribs are quite marked, showing he had rickets as a child. He was put under diuretics and purgative treatment. The result was that the ascites disappeared in about two weeks so that it was entirely gone. The abdomen was still tender, but the fluid had disappeared. We then stopped the treatment for a few days and found the fluid formed again. We then continued the treatment again for about a week, and left off about two weeks ago, and the fluid has not formed again. After the fluid disappeared we found that there was an absence of dullness in the hepatic region here on the right side, and that large organ seemed to exist on the left side extending around the body. The other day I inflated the colon with air and found that the colon passed up here in front of this large mass, which we considered to be the liver, and down on to the other side. The stomach is evidently pushed upward and towards the left side, and I think that this large organ here cannot be anything else than the liver pushed over from its proper position in the right side. Of course, we are not positive that this is the result of the accident, because we do not know what the position of the liver was before the accident, but the wheel came over just in the direction it would push the liver over.

Dr. Atherton suggested a section for examination.

Dr. Grasett: I do not think there is any doubt but it is a displace-

ment of the organs from the extreme dullness. There is no history of enlarged spleen ; the symptoms are not those of enlarged spleen.

Dr. Atherton : If the liver is found on the left side congenitally, you would think the stomach would be on the right. And Dr. Graham, I suppose, from his examination, thinks the stomach is on the left. Therefore, if it is the liver which has been displaced by the injury, that it can be displaced by the injury and not return to the original position and not kill the boy I cannot believe. I cannot believe it is either spleen or liver.

Dr. Graham : I was so satisfied about the position of the stomach that I did not inflate it.

Dr. Grasett : There is only a line of dullness to the extent of one finger's breadth. Below that it is all clear.

Dr. Graham : I think that is the intestine ; it is not the colon. It must be the small intestine, because the colon was distinctly mapped out.

Dr. King : There is quite a tender point on the left side about on the tenth rib near the border of the growth or body that I would like to have explained if it is the liver.

Dr. Graham : He is doing so well I thought he was getting along as well with his liver on the right side as on the left, so I have not touched him. If the ligaments that bind the liver in its proper position were torn, there is no reason why it should go back. It would stay where it was, and form again in the new place.

Dr. Grasett : Would not the tendons tend to draw it back ?

Dr. Atherton : It seems to me, from the description of the accident, the boy was on the left side, and the wheel went just below the ribs. If it had fractured the ribs on the right side, possibly the liver might have been displaced to the other side ; but the wheel passed below the edge of the ribs on the left side, so I cannot see how in the world that pressure would press it over to the other side. It would possibly press it up against the diaphragm. The ribs were fractured on the left side, and not on the right.

(To be continued.)

Book Reviews.

HEART STUDIES, CHIEFLY CLINICAL. No. 1. By Wm. Ewart, M.D. Cantab; F.R.C.P. Lond.; M.R.C.S. Eng.

The present number of the "Heart Studies" treats of the "Pulse Sensations." It appears to be quite exhaustive, embracing both theory and practice. The illustrations, chiefly diagrammatic, are very numerous, and the book is put out in good style. The publishers are Bailliere, Tindall & Cox, of London.

A MONOGRAPH ON DISEASES OF THE BREAST: THEIR PATHOLOGY AND TREATMENT, ETC. By W. Roger Williams, F.R.C.S. London: John Bale & Sons.

This is a good book upon an important subject. It shows the results of careful work and of large opportunities for observation, which have been made much of. It is a work of a kind that too few of our general practitioners pay any attention to, specializing, as it does, in a field upon which every medical man must enter. The publishers' part has been fairly well done, though many of the illustrations are not such as should be found at the present day.

A TEXT-BOOK OF HYGIENE. By George H. Rohé, M.D., Superintendent of the Maryland Hospital for the Insane; Professor of Therapeutics, Hygiene, and Mental Diseases in the College of Physicians and Surgeons, Baltimore, etc. Published by the F. A. Davis Co., Philadelphia.

This is a book of over 500 pages, royal octavo, in the same clear typography as the "Annual of the Medical Sciences," by the same publishers. It deals with the subjects taken up in other works on hygiene we have had occasion to notice. The chapters on "Food" and "Quarantine" are very full, the latter occupying over 100 pages. The various regulations, maritime and interstate, and the mode of carrying them out, are fully set forth.

LOCAL ANÆSTHETICS AND COCAINE ANALGESIA: THEIR USES AND LIMITATIONS. By Thos. H. Manley, M.D. 180 pages. St. Louis: J. H. Chambers & Co., 1894.

For many years Dr. Manley has, when the opportunity offered, urged the substitution of cocaine for the systemic anæsthetics, in some of the major, as well as in many of the minor, operations, claiming that the difficulties and dangers attending these procedures would thereby be reduced.

While the comparison drawn of the risks attending the use of cocaine as an anæsthetic with that of chloroform or ether is rather strained to the advantage of cocaine, still it must be admitted that, as the action of cocaine becomes more generally understood, and the best means of meeting the toxic symptoms, when they exist, appreciated, fatalities will rarely occur at the hands of competent persons; whereas, with chloroform, and, to a lesser extent, with ether, the experience of the past will practically be the experience of the future.

We are in hearty accord with the author when he presses the claim of cocaine as the anæsthetic in strangulated hernia, especially if the patient be advanced in years, or the strangulation of some standing; the diminished shock and lessened pulmonary irritation (ether) would seem to give the patient a distinctly better chance for life.

Dr. Manley deals with the subject of local anæsthetics and analgesias, locally applied, the indications and technique for local anæsthetics, the method of employing cocainization in the different departments of surgery (operations and injuries), the dosage for the different parts of the body, as well as the steps to be taken in case an overdose be administered.

We advise those in the habit of employing cocaine as a local anæsthetic to read the book.

A MANUAL OF MODERN SURGERY, GENERAL AND OPERATIVE. By John Chalmers DaCosta, M.D. Demonstrator of Surgery, Jefferson Medical College, Philadelphia; Chief-Assistant Surgeon, Jefferson Medical College Hospital; Surgical Registrar, Philadelphia, etc. One very handsome volume of over 700 pages, with a large number of illustrations. (Double number) price, cloth, \$2.50 net.

In his preface the author explains that "the work seeks to stand between the complete but cumbrous text-book and the incomplete but concentrated compend"; that the effort has been to present the subject in a form useful alike to the student and the busy practitioner. Ophthalmology, gynæcology, rhinology, otology, and laryngology have not been considered. Only the specialist is competent to write upon each of these branches. In orthopædic surgery are discussed those conditions which must, in the very nature of things, often be cared for by the surgeon or general practitioner.

Dr. DaCosta, in his "Manual of Modern Surgery," supplies us with what is largely a compilation—a good compilation—of the recent contributions upon this subject. The work is suggestive, not exhaustive; too suggestive for a student who has no previous knowledge to draw upon, not sufficiently exhaustive for the practitioner who, after he has expanded the means usually relied upon, is looking anxiously for further light, that he may be enabled at once to save his patient and protect his reputation. The elimination of so much surgical work on the ground of its being specialized materially reduces the value of the work to the rank and file of the profession. In the main, the descriptions of the operative procedures discussed are clear, though brief, but we miss the indications for the different forms of treatment suggested, and also some caution as to the dangers to be encountered, with a hint as to the best way to meet them, as well as suggestions upon the important subject of after-treatment.

The book has a decided value, but chiefly to the graduate of some years' standing, who is honestly endeavoring to assimilate the many important lessons of modern surgery. What adverse criticism we feel called upon to offer is directed against what the book does not, rather than what it does, contain.

ASEPTIC SURGICAL TECHNIQUE, with especial reference to Gynæcological operations, together with notes on the technique employed in certain Supplementary Procedures. By Hunter Robb, M.D., Professor of Gynæcology, Western Reserve University, Cleveland, Ohio. Illustrated by 25 plates and 47 woodcuts. Crown 8vo., 246 pages. Philadelphia: J. B. Lippincott & Co., 1894.

Dr. Robb has done the American surgeon of to-day good service in providing him with a work upon antiseptic surgical technique which, while modest in size, contains all the specific directions necessary to a complete handbook in his special department.

The surgeon commonly finds it no easy matter to convince assistants who have not enjoyed the advantages of a bacteriological training of the real importance of each step of the accepted technique of to-day. This work will assist him, and, presenting the details in a most usable form, is likely to become the popular handbook upon this subject.

The title of the book is, to some extent, misleading, for the author has stepped aside from his subject, and introduced useful chapters upon 'anæsthesia as an aid to diagnosis, examination of the interior of the female bladder, and catheterization of the ureters (being an account of Howard Kelly's recent work), bacteriological and clinical examinations in surgery and gynæcology, and pathological examinations.

The work proper includes chapters upon bacteriology, sterilization, materials and their preparation, drainage, instrument cases and other furnishings, post-operative care, operations in private houses, where the technique must be more or less imperfect.

The usefulness of the book would have been increased had the technique of general surgery received some attention, yet this was hardly to be expected from a pure gynæcologist, and a technique which will stand the gynæcological test, while it must undergo some modifications in the matter of dressings, etc., will, in point of security, meet the requirements of general surgery. Altogether, the book is a most satisfactory one, reflecting credit upon author and publisher alike.

A TEXT-BOOK OF THE THEORY AND PRACTICE OF MEDICINE. By American teachers. Volume I. Philadelphia: W. B. Saunders.

This work, as the preface sets forth, is a practical one, and, therefore, will be looked forward to by the general practitioner with great interest. Professor William Pepper, the editor, has associated with him many of the most eminent teachers of medicine on this continent. The first volume is composed of articles written by Billings, Pepper, Whittaker, Thompson, Wood, and Osler. The work opens with a very thorough article on hygiene; disinfection receiving special attention. The rest of this volume is taken up with the discussion of

the specific infectious diseases and diseases of the nervous system. The work is freely illustrated. The practising physician will find this text-book, as it is called, to represent the present-day treatment of the leaders of the American profession. Amongst the articles on specific infectious diseases, we specially note that on influenza as giving information which, as yet, is not common to the ordinary text-books. The bacillus of Pfeiffer, the micro-organism which is now accepted as the effective cause of influenza, has never been shown to be present in any other malady. It is found most abundantly in the sputum, and also in the blood. A full description of the bacillus with methods of differential stain will be found in this article.

All physicians who have had much experience with pneumonia as a complication of influenza will appreciate the author's remarks regarding its symptoms and physical signs, its insidious onset, the tendency to spread, the feebleness of the respiratory murmur, both before and after consolidation, as well as great abdominal distension, and a typhoid state, characters which have led to an erroneous diagnosis of enteric fever. We might also add the bright red appearance of the sputum, often seen throughout the attack in place of the usual rusty or prune juice expectoration.

Under the head of scrofula, W. Gilman Thompson devotes a chapter to the morbid condition characterized by inflammatory enlargement, with caseation or suppuration of the lymph glands, and tending to tedious inflammations of the skin, mucous membranes, bones, and joints.

Actinomycosis and anthrax are both fully dealt with by Whittaker. The colored illustrations are good.

Under the vaso-motor and trophic disturbances, by Dr. Osler, will be found short accounts of Raynaud's disease, angio-neurotic œdema, acromegaly, and scleroderma, a description of which one will look for in vain, except in the very latest text-books. We have no hesitation in recommending this work as a very valuable addition to any physician's library.

Medical Items.

DR. L. F. BARKER is still at Johns Hopkins, working chiefly at pathology.

DR. T. H. HALSTED (Tor., '87) was in Toronto, December 28. He was on his way to his home in Syracuse.

DR. L. M. SWEETNAM, of Toronto, left for Baltimore, January 14th. He will remain there two or three weeks as the guest of Dr. Howard Kelly.

DR. OSLER, of Baltimore, delivered an address at the formal opening of the new building of the Medical Faculty of McGill University, January 8th. After spending a couple of days he paid a short visit to Toronto.

DR. FRANK BEEMER (Tor., '84), who has been one of the assistant physicians in the Asylum for Insane, Hamilton, for some years, left that city, December 27, for London Asylum, where he is likely to remain for some time.

DR. JAMES T. CAMPBELL (Tor., '89) passed through Toronto, December 24, on his way to Whitby, where he spent a few days at his old home. He reports favorably of the Toronto contingent in Chicago—all well, and doing well.

DR. THOMAS S. CULLEN, who had been spending a portion of his holidays as a guest of Dr. Sweetnam, went to Baltimore with the doctor. Dr. Cullen is likely to remain at Johns Hopkins Hospital for at least two years longer.

DR. J. ALGERNON TEMPLE and Dr. Albert A. Macdonald have formed a partnership, which will not include their ordinary practices, but simply the work in Bellevue House, which has been more generally known for some years as Dr. Temple's Private Hospital for Diseases of Women.

THE first issue of the *Canadian Medical Review* is to hand. It is a very neat journal. The staff, consisting of Drs. W. H. B. Aikins, A. B. Atherton, J. H. Burns, G. Sterling Ryerson, J. Ferguson, Albert A. Macdonald, and D. W. Montgomery, were all formerly connected with the *Dominion Medical Monthly*, and whose retirement we noticed in our last issue. We wish the *Review* success.

SENSATIONALISM IN PROFESSIONAL JOURNALS.—The praiseworthy effort of the *British Medical Journal* to expose the scandals connected with the notorious massage establishments of the metropolis is somewhat marred by the manner in which the subject is laid before its readers. To the professional man, to whom alone the *British Medical Journal* should appeal, such an exposure would be quite as valuable and conclusive if set forth with somewhat less blatant flourish of trumpets, and if unaccompanied by the accessories of special type and somewhat spun-out details. If the case is a good one, as against many of these establishments it doubtless is, it can answer no good purpose to give this so-called report of the "commission" such a prominence in a periodical which lies on the table of many a public library and scientific institution where others than medical men may be impelled by curiosity to read the details of this, the latest scandal. It is but too likely that such a report, while it damages the business of the honest establishments, gives an additional advertisement to those which it is intended to suppress. In any case, this kind of departure from the sober current of professional news, information, and comment, seems hardly worthy of the official organ of a great association. It suggests the kind of journalism which finds its expression in certain of the evening and Sunday papers, which we hardly look up to as models for our imitation.—*Medical Magazine*.

MUNIFICENT GIFTS TO COLUMBIA UNIVERSITY.—Within the last six weeks Columbia University has received gifts for new buildings representing more than a million dollars. In addition to the two buildings at Bloomingdale, for which \$500,000 was given some time ago by, as yet, secret benefactors, provision for a number of buildings for the College of Physician and Surgeons has been made by members of the Vanderbilt family, in the sum of \$350,000. The Vanderbilt clinic on Sixtieth street will be enlarged by the erection of a building five stories high and 100 x 50 feet. Another building, 50 x 80 feet, will be erected on Fifty-ninth street, east of the present main building.

Another important gift in connection with the medical school is one of \$200,000 from Mr. and Mrs. William D. Sloane for the enlargement of the Sloane Maternity Hospital to nearly double its present size. Mrs. Sloane has also agreed to provide the additional money necessary for the maintenance and endowment of the enlarged institution. The new building will have a front of seventy feet on Fifty-ninth street.

These new buildings will completely fill the Fifty-ninth and Sixtieth streets fronts of the block occupied by the medical school, and will provide an equipment for Columbia far in advance of any other American medical school. The architects are already at work on the plans, and construction will be begun without delay. The property and the main building of the College of Physicians and Surgeons were given by the late William H. Vanderbilt; the clinic bearing his name was erected as a memorial by his children; while his daughter, Mrs. Sloane, endowed the maternity hospital.—*Medical News*.

CARE OF THE MOUTH IN SICK PERSONS. — Rosenbach says that in many illnesses there is almost sure to be secondary trouble in the mouth if preventive measures be not taken (*The British Medical Journal*). A warning sign is dryness and redness of the tongue and mucous membrane of the mouth, with difficulty in swallowing; further signs are an evil odor from the mouth, coated tongue and gums, bleeding of the gums, etc. Just as special care of the mouth is required in patients with carious teeth, smokers, and chewers of tobacco, so it is also in the case of unconscious or paralyzed persons; patients with fever or suffering from chronic digestive complaints; those taking medicines, such as mercury or iodides, or who, on account of general weakness, have to take strong alcoholic drinks; but, perhaps, the most important class of those in whom special care of the mouth must be taken are patients with fever. Parasites are always present in the mouth, but it is only when the tissues are weakened that they undergo invasion by these parasites, which become then really pathogenic. There is nothing which one can do for sick persons which is unimportant, and by neglect in the care of the mouth convalescence may be retarded. Rosenbach concludes with the following rules: (1) Patients with good digestive powers, free from fever, and with no loss of consciousness require no more than the ordinary care of the mouth. (2) In children and very old patients the less solid food taken the greater should be the care with the mouth. They should rinse the mouth out several times a day with lukewarm water containing a little common salt, tincture of myrrh, or eau-de-Cologne added to stimulate secretion. When there is a tendency to bleeding of the gums, or when the teeth are bad, a pinch of powdered boric acid may be twice daily rubbed in between the lips and gums. Patients with false teeth should remove their false teeth when, owing to the loss of appetite or chronic gastric disturbance, they cannot take solid food. (3) In patients with partial loss of consciousness the mouth should be examined several times a day for small sores, such as may arise from the pressure of the teeth on the lips, etc. Such sores should be powdered with a little boric acid or chlorate of potash, and the cracks at the corners of the lips heal quickly if dried with a clean towel and treated with boric acid or vaseline. The mucous membrane may be stimulated by wiping the tongue and mouth, and pressing on the tongue with a moist towel every two or three hours; if necessary, the hinder part of the tongue should be cleaned with a wad of cotton-wool fastened to a stem. If the patient sleep with the mouth open the air in the room must be kept moist; a moistened layer of muslin laid on the mouth may be of some service. (4) Patients with fever should have something to drink—cold water or weak lemonade—at least every hour; one must not wait until the patient asks for drink. Besides preventing dryness, the fluid maintains the activity of the glands and the whole function of the mucous membrane. Many patients are prevented from drinking by a painful, dry, and cracked condition of the lips, and therefore all feverish patients should, from the commencement of their illness, have their lips rubbed several times a day with vaseline or fat. In protracted cases of fever the mouth may also be swabbed out with oil, fat, or greatly diluted glycerine.—*N. Y. Medical Record*.

OBITUARY.

EDWARD AARON MCGANNON, M.D.—We learn from the *Montreal Medical Journal* that Dr. E. A. McGannon, of Brockville, died in the month of October last, at the age of 41. He graduated at McGill University in 1881, and, after practising for a time in Lowell, Mass., removed to Brockville, where he soon built up a large practice. He was Grand Trunk surgeon at Brockville, and last year was elected vice-president of the Association of Railway Surgeons of North America.

DR. WITHERS MOORE, D.C.L., M.D., F.R.C.P.—Dr. Withers Moore was one of the best known physicians in the south of England. In his earlier years after graduating he practised in Doncaster, Yorkshire, but removed to Brighton in 1841. Patients came slowly for a few years, but, almost suddenly, fame and success reached him. He was a prominent and active member of the British Medical Association, and was vice-president of that society at the time of his death, which occurred December 5, after a few days' illness, from angina pectoris. He was seventy-one years of age.