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VOLKMANN'S CONTRACTURE.*

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T F., aged 9, male, was admitted to the Hospital for Sick Children on November 1st, 1907. Has had no previous illness. Two years ago he fractured the right tibia; treated by splints for one month with perfect recovery. On August 21st, 1907, he fell while vaulting a gate, sustaining a fracture of the left humerus a short distance above the elbow joint. The fracture was set under an anæsthetic and the arm was tightly strapped with adhesive plaster, the elbow being acutely flexed; the



adhesive passing over the shoulder of the injured side, down around the elbow and up over the shoulder of the sound side. This strapping was removed in four days under an anæsthetic, when the hand was seen to be much swollen and a dead-white area, surrounded by a dark ring, was seen on the inner side of the dorsum of the wrist. The arm was then bandaged close to the chest for two weeks, the elbow being moderately flexed. At this time (eighteen days after the accident) the bandages were removed, when it was found that the hand was "clawed" and there were no movements of the forearm and hand possible. The boy suffered no pain

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throughout. The arm was then put in a simple sling for a fortnight. The condition did not improve, so five weeks ago a surgeon ill-advisedly explored the median nerve about the elbow and found it normal.

Present Condition: The left arm is flexed at a right angle. There is sound union of the broken humerus without any shortening. Comparative measurements of the two arms show the whole injured member to be about one-half inch smaller in circumference than its fellow, except just above the elbow, where the two arms are equal in size. This is easily accounted for. By palpation and also by an x -ray examination, a mass of new bone is found around the seat of fracture, being more marked on the inner side. This prominence limits the range of active movements in the elbow joint from 75° in flexion to 95° in extension. The slight atrophy present is no doubt due to disuse, for the arm has not been used for three months. The forearm is held in a semi-pronated position. The arm can, however, still be actively pronated and supinated to a limited extent, the biceps being mainly used in supination. The hand is flexed to a right angle at the wrist, but can be actively flexed and extended through an arc of 10° . The flexor tendons are very tense as they cross the wrist, especially the palmaris longus. The first phalanges of the fingers are slightly hyperextended, the second and third being flexed, those of the ring finger most and the middle finger hardly at all. The thumb is held quite straight, only feeble movements of flexion and extension are possible. The interphalangeal joints of the fingers can be voluntarily moved, the flexors being much stronger than the extensors. There is no movement in the distal interphalangeal joints of the ring and little fingers. The wrist and fingers cannot be extended at the same time, but after strongly flexing the wrist the fingers may be straightened. The muscles of the forearm feel very hard, almost board-like. The interossei muscles feel soft and are functionless, all power of abduction and adduction of the fingers being lost. There is very slight wasting, however, in these muscles, the lean appearance of the hand seen in ulnar nerve paralysis being absent. The thenar and hypothenar eminences are much flattened and feel soft. There is total anæsthesia of the skin on the dorsum of the hand supplied by the radial and ulnar nerves and also an area on the palm of the hand corresponding exactly to the distribution of the ulnar nerve. On the inner and posterior aspect of the wrist there is a red, thin, glazed scar with a small broken area near its centre. This is the result of pressure due to the tightly applied strapping twelve weeks ago. The radial and ulnar pulses are normal in volume, although the circulation in the hand seems poor, the skin becoming blue and mottled when the hand is dependent. There is a perpendicular scar four inches long on the front of the upper arm running down to the elbow, the result of the operation on the median nerve. All the muscles of the arm, with the exception of the interossei

and small muscles of the thumb and little finger, can be felt to contract voluntarily, yet the movements are exceedingly limited indeed, their forcible efforts being almost fruitless. The sensitiveness of the skin of the whole arm seems somewhat blunted. The electrical reactions of the muscles were tested with the following results: The flexors were found normal, the extensors and small muscles of the hand gave the reaction of degeneration, not responding to a faradic current, but contracting to galvanism. It was not found possible to use a sufficiently strong current for the purpose of eliciting contractions, without causing severe pain, so that the typical reaction of degeneration in the muscles tested is still doubtful.

Diagnosis: Volkmann's contracture or ischæmic paralysis with coexisting pressure neuritis.

This serious deformity, first described by Volkmann¹ in 1875, receives only a brief notice, if any, in our modern text-books on medicine and surgery. Yet it is not a rare affection, for there are many reported cases in the literature. Up to 1896, twenty-five cases were reported by the German surgeons. In 1896 Heule² described a case in the service of Mikulicz where the bones of the forearm were resected, with good results. Battle³ reported the first British case in the same year, to be soon followed by others: Dunn⁴, 1897; Johnson⁵, 1898; Davies-Colley⁶, 1898; Owen⁷, 1898; Clarke⁸, 1899; Page⁹, 1900; Littlewood¹⁰, 1900; Wallis,¹¹ 1901; Barnard¹², 1901. Dudgeon¹³ in 1902 collected and tabulated the reported English cases and wrote a valuable paper, giving an excellent account of the disease. He also added three other cases in 1903¹⁴. Edington¹⁵ reported three Scotch cases in 1903 and Rowlands¹⁶, 1905, wrote a monograph based on Dudgeon's study, and added a case of his own. Three American surgeons, Bernays¹⁷, 1900, Ferguson¹⁸, 1906, and Powers¹⁹, 1907, have also contributed to the literature of the subject and report several cases. This makes, in all, nearly sixty cases.

Etiology: Volkmann's contracture is a contraction of the fingers and sometimes of the wrist, which comes on rapidly, with loss of power which is not absolute, in the forearm muscles, after a severe injury, usually a fracture in the neighborhood of the elbow joint, generally in young children. The deformity is due to changes in the muscles, caused, in most cases, by tight bandages and the pressure of splints. The dressings may not be too tightly applied at first, but no allowance is made for swelling. Pain is not always complained of, and cannot be relied upon as indicating undue pressure.

In nearly 50 per cent. of the reported cases there was a fracture of the humerus or a separation of its lower epiphysis, which may have caused pressure on the brachial artery between the splint and the end of the upper fragment of bone, leading to ischæmia of the parts below. Many cases

have, however, been caused by splint pressure exerted on the forearm alone, and that only for a few hours.

Pathology: Surgeons who have examined the contracted muscles all agree that they are firm, pale, and fibroid. Microscopic sections of portions of muscles removed also confirm this, showing a diffuse fibrosis. It is not likely this fibroid condition is secondary to nerve injury, because the flaccid type of paralysis does not precede contraction, as it always does in nerve lesions. There are rarely any changes in the electrical reactions of the nerves or any action of degeneration in the contracted muscles which remain capable of producing voluntary movements, if only their tendons be relatively or actually lengthened so as to allow of a range of movement.

The fibrosis is probably the result of a myositis caused by either malnutrition from prolonged anæmia or from direct splint pressure. Those fibres which are directly compressed between the splints and the bones are the most likely to suffer. When the splints are removed the blood enters the damaged muscles and inflammation follows, to be followed later by degeneration of the muscles into fibrous connective tissue. In addition, the inflammatory exudate surrounding the muscular fibres, when organization takes place, will augment the amount of fibrous tissue present.

Other causes which may lead to this condition are direct traumatism to muscles, extensive cellulitis, injury to the main artery of a limb, pressure of Esmarck's bandage, and cold.

Diagnosis: With the history to guide us and characteristic deformity present, it is difficult to mistake Volkmann's contracture for anything else. The simultaneous appearance of paralysis and contraction are of great diagnostic value, because this distinguishes the condition from the contractures following lesions of the peripheral nerves or of the central nervous system, in which paralysis precedes contracture by a long interval. The normal electrical reactions of the muscles which are contracted are also valuable aids in diagnosis. Late ulnar paralysis with the "main en griffe" may simulate the deformity under discussion. In this paralysis there is wasting and degeneration in the muscles supplied by this nerve only. The wrist is not flexed and there may be sensory and trophic disturbances of the skin. Median nerve paralysis can hardly be confounded. In musculo-spiral palsy, although there is drooping of the wrist, it is due to paralysis of the extensors and not to contraction of the flexors, as in Volkmann's contracture, and besides, the flexion may be easily overcome by passively extending the wrist. The involvement of the supinator longus and triceps in some cases, with the reaction of degeneration in some cases, is sufficiently characteristic for a correct diagnosis.

As pointed out by Dudgeon, electrician at St. Thomas' Hospital, that although these points are generally sufficient for diagnosis between the deformity in question and peripheral nerve palsy, yet it is highly probable

that the nerves are also affected in some of the cases of Volkmann's contracture. For instance, we see in some of the cases reported loss of sensation corresponding to definite nerve areas, while in others there have been trophic ulcers. In several cases where the reaction of degeneration was found, it is highly probable that on the one hand there is pure ischæmic myositis, and on the other hand ischæmic myositis plus peripheral nerve palsy, producing complete or partial reaction of degeneration.

Cases of anterior poliomyelitis, infantile cerebral monoplagia, and functional disease may with care be excluded.

Prognosis: Volkmann gave these sad cases an almost absolutely bad prognosis. Mr. Ward²⁰, however, mentions that he has never seen or heard of any adult with Volkmann's contracture due to and persisting from injury in childhood. Many mild cases have been cured by long continued massage, active and passive movements, and electricity. In the majority of cases some operation is necessary to allow of a more extensive range of movement for the diseased muscles and correcting the deformity at once will enable the treatment by active and passive movements to be thoroughly carried out. It is too much, however, to hope for a complete recovery of the affected muscles, for many of the fibres are permanently lost and the movements of those that remain are greatly hampered by the surrounding fibrous tissue.

Operations: Stretching or tearing the contracted muscles under an anæsthetic or dividing the muscular bellies, have been proved useless. Multiple tenotomies cures the deformity, but involves a permanent disability. Two methods of operations have been carried out with success, tendon lengthening by the splitting method, and secondly, excision of portions of the radius and ulna and wiring the fragments together. Good results have followed both methods of procedure. The time involved in lengthening ten small tendons and the frail nature of the same renders this operation a disadvantage in small children and, moreover, it does not correct the troublesome fixation of the hand in pronation.

Excision of portions of both bones of the forearm was first practised in England by Raymond Johnson and has since 1898 been performed many times. Its only disadvantage is the danger of non-union of the fragments. It is an excellent method of at once correcting all deformity and takes much less time than tendon lengthening.

In conclusion, I wish to thank Dr. Primrose, under whose care this boy was admitted into hospital, for the privilege of presenting this case to you and also to Dr. C. R. Dickson, who kindly tested the electrical reactions of the muscles for me.

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HÆMORRHAGES AFTER APPENDICECTOMY.*

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IN a brief review of the literature on this important subject, one finds little beyond isolated reports of cases, and for a general understanding of the subject is directed to what may be gained from the consideration of the broader subject of post-operative gastro-intestinal hæmorrhage.

This is a complication which is not infrequently seen after abdominal operations, and in some mysterious cases may follow any form of operation. That it is more likely to occur following operations upon the stomach, the duodenum, or the gall bladder and bile ducts is a fact well established.

As to the cause of the rare variety following operations other than abdominal, conjecture only provides such explanations as anæmia, cholæmia, other altered blood conditions, or personal idiosyncrasies, including hæmophylia, cirrhotic conditions, nervous influences, anæsthetic after-effects or possible injury to the abdominal viscera from position or accidental pressure. But the importance of these is *nil* as compared with those following abdominal operations.

Of these latter various causative theories have received support from different authorities, and for a discussion of causes one is largely indebted to Moynihan, in his valuable work on abdominal surgery, and to Dr. J. E. Summers, whose collaborative contribution on this subject appears in the *Medical Herald* of November, 1906.

*Read at the Toronto Academy of Medicine.

Some cases have been attributed to the anæsthetic, but they have been observed to occur after local anæsthesia as well as general.

Sepsis, according to Dr. W. L. Rodman, as the causative factor, has appealed to Mr. Moynihan as most likely, though often other obvious evidences of sepsis are wanting? They believe that in many cases the infection is so virulent as to produce rapidly fatal toxæmia without local evidences such as peritonitis.

Mayo Robson speaks of reflex nervous influence as a cause, but is criticized by Purves, who claims that if such cause exists, sepsis would determine the onset of the reflex, would prolong its duration and render its effects more serious.

The cause which seems to be most devoid of theoretical clothing is the one which has to do with the determination of an altered relation between the blood vessels and their contained blood.

Acting thus, traumatism, often, no doubt, of the most gentle variety, is most potent, though certainly one can readily believe that in combination with sepsis it would be still more powerful.

The experiments of Litten and Hoffman on the mesenteric and omental vessels respectively tend to prove that constriction or trauma of these vessels may be followed by gastro-intestinal hæmorrhage, in some cases resulting from a venous or arterial thrombosis with hæmorrhage by diapedesis as in the early cases, and in others, as in the later cases, from a retrograde arterial thrombosis with consequent cutting off of nutrition either directly or by progress into a terminal artery or by infarction and subsequent necrosis from digestion.

In connection with Hoffman's experiments it is interesting to note that after ligation of the omental vessels in various animals the occurrence of gastro-intestinal hæmorrhage was much more frequent in the guinea pig than in the rabbit and more frequent in the latter than in the cat or dog, and also that its frequency was greater when the vessels were ligated near the gastric attachment of the omentum. He concluded from this that the larger arteries of the large animals were less likely to present retrograde thrombosis and that the nearer the traumatism was to the stomach the greater was the chance of retrograde thrombosis extending to the gastric arteries.

Coupling with this the clinical fact that post-operative gastro-intestinal hæmorrhage occurs more frequently after operations upon the stomach, the duodenum and the gall bladder and bile ducts, where the element of proximity is present as well as an unavoidably large degree of manipulation, a considerable amount of support is lent to what might be summed up as the vascular clothing method of causation.

The names of Schnitzler, Nelman, Kukula, von Eiselberg, Kehr, and Prof. Frederick are prominently connected with the work on this subject.

In his contribution, Dr. Summers concludes that practically all cases are in some way due to traumatism, either avoidable or unavoidable, and that in operative manipulations involving either the omentum or the mesentery it is most important to be as gentle as possible.

To one who is always as careful and as gentle as his ability permits, all of such hæmorrhages are unavoidable.

When the hæmorrhage is strictly intestinal, as is the case after some operations for the relief of hernia, strangulated or even otherwise, or of appendicitis, it would seem that the mesenteric vessels alone are involved. Hæmorrhage after appendicectomy where an abscess has been drained is due no doubt to the ordinary causes of secondary hæmorrhage, namely, vascular thrombosis and sepsis, and in one recently watched to a fatal termination, a case of a retro-peritoneal appendiceal abscess complicated by suppurative pylephlebitis in which several profuse hæmorrhages occurred from the wound during the second week after operation.

In other cases hæmorrhage follows the operation of appendicectomy from causes which might perhaps be classed as avoidable. In the majority of these, according to the views of Dr. Wyeth, expressed in the *Journal of the American Medical Association*, July 13th, 1907, the cause is one of faulty technique and especially in the means employed to secure permanent hæmostasis.

He is still a firm believer in the silk or linen ligature for both the appendix and its mesentery, and from a variety of case reports in which post-operative hæmorrhage was a feature he is inclined to condemn the purse-string suture and catgut, as interfering to some extent with the safety of the patient so far as the complication under consideration is concerned.

In this, no doubt, he would receive support from many competent surgeons and would as surely be opposed by many others.

One cannot but feel, however, that in suitable cases an absolutely safe operation may involve the application of a purse-string suture, even of catgut. Applied carefully, before the detachment of the appendix, with a proper needle reaching to the resistant submucous coat and including the cut end of the appendiceal mesentery, and when carefully tied without constriction, the ligated base of the severed appendix and the cut end of its mesentery being carefully invaginated, the effect is commendable and the subsequent formation of adhesions is most unlikely.

Crushing alone, of the base of the appendix or of its mesentery as well, previous to invagination, does not yet impress one as a means of hæmostasis, with the feeling of security that comes from the use of the ligature, and especially when one remembers that in a considerable percentage of cases an artery of decidedly appreciable size runs in the wall

of the appendix, either taking the place of the artery in its mesentery or existing in association with it.

Following are brief notes of a case of hæmorrhage after appendicectomy :

R. S., clerk, age 20 years ; habits good and always healthy except for children's diseases. Referred by Dr. J. T. Fotheringham, Toronto. Seen on August 4th, 1905, during the subsidence of a second acute attack of appendicitis with localized peritonitis and the formation of an adhesive mass. There were no symptoms nor signs of any account save the palpable mass. Operation was advised, to take place later after the interval had well begun.

August 7th, he was admitted to the Toronto General Hospital and the operation was performed on the following morning, Dr. Fotheringham administering the anæsthetic. The appendix was embedded in a mass of adhesions and though easily located was difficult to separate. The cuff operation was performed, with ligation of the appendix and its mesentery by silk ligatures. The stump was carbolized and covered by the cuff. Considerable oozing of blood occurred and the cæcum was markedly congested. Hæmostasis was readily effected by hot sponging and the wound was closed. The operation was borne moderately well and he was fairly well throughout the day, with but little nausea. Late that evening the pulse went up rapidly to 160; temperature, 98° F. He was blanched, but not restless, and thirst was intense. Examination revealed no evidence of intraperitoneal hæmorrhage, neither was blood vomited nor passed per rectum. Rectal salines were given and retained, also heart stimulants, including morphia, gr. 1-16 by hypodermic injection.

August 9th. Improved slightly. Pulse, 140; temperature, 101.4° F. Taking hot water sips, predigested beef, rectal salines and hypodermic as before.

August 10th. Condition about the same. Respiration, 22; pulse, 140; temperature, 101° F. Passing flatus. Morphia discontinued. Taking peptonized milk and whiskey.

August 11th. Improved. Respiration, 20; pulse, 96; temperature, 99° F. Given calomel and later sal Rochelle and a simple enema. Slight movement but very little fæcal matter. Slight abdominal distension, relieved later by turpentine enema and rectal tube. Vomiting a little greenish fluid occasionally.

August 12th. Not so well. Respiration, 24; pulse, 110; temperature, 99.4°. Slight vomiting. Considerable distension of upper part of abdomen. Liver dulness obliterated. Relieved by gastric lavage and free movement by enema of mag. sulph., glycerine and water. Nutrient

enemata given and mostly retained. At midnight a large bloody stool was passed. This was about the color of catsup, was not tarry, but microscopical examination showed the corpuscles much disintegrated.

August 13th. A.M. Condition about the same. Respiration, 20; pulse, 116; temperature, 101.3°. Three bloody stools passed. Gastric distension relieved by lavage. P.M. Six bloody stools passed. Respiration, 20; pulse, 136; temperature, 103° F. Morphia, adrenalin chloride and calcium chloride given.

August 14th. A.M. Slightly improved. Respiration, 22; pulse, 120; temperature, 100.2° F. Gastric distension relieved by washing. Retaining nourishment, and very little vomiting. P.M. One bloody stool. At this time the wound, which had been examined daily, was found to be bulging. Opened; a lot of gas and dark fluid blood escaped; drained by gauze. Two hours later, dressing saturated and changed. Still a little later the dressings were again saturated. The wound was opened in its entirety, the clots removed and the cavity packed with acetanilide gauze saturated with adrenalin chloride (1 in 2,000). Nourishment retained. Liver dulness still obliterated.

August 15th. A.M. Condition much worse. Respiration, 20; pulse, 160; temperature, 103.2° F. Interstitial salines given and absorbed very rapidly, improving the quality of the pulse. An intravenous saline, 30 oz., was also given. P.M. Slight improvement. Respiration, 36; pulse, 150; temperature, 104.3° F. Packing of wound changed. Later the packing was again removed and before repacking the cæcum, which was black, was opened and washed out and by means of a long catheter the whole large intestine was flushed out with normal saline until it came away clear through the wound and through the anus. Respiration, 36; pulse, 150; temperature, 103.2° F. Nourishment retained and very little surgeons' distension.

One can 16th. 1.30 a.m., delirious. Respirations rapid and shallow; safe operation possible. 3 a.m., much quieter. 4.15 a.m., died.

of catgut. At 11, the patient was bright as could be, until the delirium a proper needle. No abdominal pain nor tenderness was complained of. the cut end of the relievable by gastric lavage. There was no hiccup, constriction, the lig the bowels were active. These features of the case its mesentery being in view of the post-mortem findings.

the subsequent formation examination revealed a diffuse, dry, gangrenous

Crushing alone, of the cæcum and ascending colon and of part of a well, previous to invagination intestine which was herniated through a space hæmorrhage, with the adherent to the abdominal wall and the ascending ligature, and especially attended tightly opposed to the liver and the right centage of cases an artery of this loop explained the obliteration of

liver dulness. Blood was found around the cæcum, in the meso-colon and lower part of the mesentery, at the volvular loop and between the liver and the diaphragm. Gravitation from the volvular loop was the probable explanation of the presence of the blood in the last situation. The stump of the appendix was intact. The bowel was intact, except for the artificial opening into the cæcum. No thrombosis of the mesenteric vessels was discovered except in the small vessels in immediate contact with the gangrenous colon. The mucosa of the cæcum and ascending colon was pale, not much swollen, and presented linear erosions which were, however, not extensive. The mucosa of the volvular loop was intact and showed a slight amount of inflammatory change. No other post-mortem feature of special interest was observed.

In this case it is almost certain that intestinal hæmorrhage occurred the evening following the operation and that the blood was retained in the cæcum and ascending colon in a fairly recent state on account of the inactivity of the bowels and stomach until the bowels were actively moved. There was no history of hæmophilia or other condition that would favor hæmorrhage. The operation performed was the time-honored cuff operation with ligation by silk of the appendix and its mesentery.

From one's recollection of the congested state of the cæcum and the difficulty of isolating the appendix, one cannot but feel that the necessary manipulations may have produced sufficient traumatism to give rise to thrombosis in the congested vessels of the walls of the cæcum, and that this was the determining factor in the early intestinal hæmorrhage which followed. The hæmorrhage into the peritoneal cavity was no doubt a continuation of the process, and the hæmorrhage at the volvular loop was a likely result of constriction of the mesenteric vessels supplying the loop, which at the post-mortem examination was found to be twisted upon itself one and a half times.

The prognosis in such cases as the one related is extremely grave, an average estimate placing the mortality at between sixty and seventy per cent., though this is probably rather a high estimate.

The treatment is essentially medical, and is usually conducted along the lines indicated in the case report. If vascular clotting is the essential causative factor surgical treatment could not avail except perhaps in an occasional case of late hæmorrhage due to infarction and ulceration, but even then, if medical means fail, a fatal termination is most likely to ensue.

EMPHYEMA.—PATHOLOGICAL ASPECT.*

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IN opening a discussion of the subject of empyema from the standpoint of the pathologist, one is at once struck with the difficulty at the outset of separating the inflammations of the pleura from one another so that one's contribution shall bear more especially upon the purulent type.

No doubt it will be acknowledged at once that no hard and fast line exists; that the inflammation which has become purulent has been in its earliest stages fibrinous or sero-fibrinous and that the same organisms are the causal factors in all forms of pleural inflammations, even when we admit that some of them are more apt to produce purulent fluids than others.

The physical conditions of the pleural sac are such that, more than in the other serous cavities, fluid exudates are favored, and consequently we find that the exudate in empyemata always contains a large amount of fluid, the amount which may be present varying considerably according to the intensity of the reaction and the stage of the disease. It is probable that certain bacteria are more actively chemiotactic and, as a result, stimulate the formation of a more cellular exudate, whereas on the other hand, under favorable conditions, by partial absorption the fluid part of the exudate may diminish more rapidly in proportion to the cellular elements.

The fluid in empyemata practically always has a specific gravity of over 1.018. It is usually much higher than this, often running up to 1.030 or over. It is distinctly higher than in sero-fibrinous exudates and owes this not only to an initial higher sp. gr., but also because it becomes loaded with the products of the autolytic digestion of the cellular elements. Chemically the fluid exudate shows either an acid or a neutral reaction, or sometimes, where litmus is used, it is slightly alkaline. An amphoteric reaction to litmus is supposed to be due to acid phosphates, but one must remember that these fluid exudates contain quantities of CO₂, which will account for the acidity. This acid reaction, as we shall see later, is of importance in influencing the autolysis which occurs.

In regard to the chemical constituents, one finds, in addition to many of the normal constituents of serum, evidences of the products of the disintegration of the fibrin and the cells in the form of peptones and albumoses, and often fatty acids, droplets of neutral fats, rarely cholesterol. These are the results of the active autolysis.

The cellular elements in empyema fluid have not the practical diagnostic significance which they have in the serous and sero-fibrinous effusions. Whereas in the latter we may obtain valuable information

* Read before the Toronto Academy of Medicine.

from a study of the cells of the exudate, in empyema the stage of doubt is past, we know that the condition is purulent. It is most probable, however, that careful study of the cells will be of importance in aiding us in appreciating the changes which are taking place. That is in the proportion of large mononuclear to polymorphonuclears, the degree of degeneration of the polymorphonuclears both in their nuclei and in their cell. Bernheim has attempted to draw conclusions for diagnosis and prognosis from a chemical examination of the fluid; a low percentage of albumen indicating a protracted course. As yet, however, we have insufficient data for drawing conclusions, and the cellular studies have been directed chiefly to differentiating tuberculous exudates from those due to other organisms or to new growths, in the case of serous or sero-fibrinous effusion.

An examination at autopsy of the pleural cavity of a case of empyema, where the cavity had been unopened, presents all the appearance of an acute fibrino-purulent inflammation. The cavity is filled with a larger or smaller amount of fluid, varying in density from mere opalescence to one heavily loaded with pus cells; these may have dropped to the lower portions, leaving a more or less clear fluid above. The surface of the parietal and visceral pleura is covered with exudate which always contains some fibrin, often a great deal. In older cases organization of this layer of exudate may have taken place and in empyemata of long standing the visceral and parietal pleurae becomes converted into thick, scar-like masses of fibrous tissue. At the same time the lung will show all the changes due to the accumulation of fluid, from a slight superficial collapse towards the base to complete collapse and compression of the lung, which, in old cases, may represent only a mere rag of deeply pigmented tissue.

Before taking up the question of etiology, I might just touch for a moment upon the changes which may occur should the exudate not be removed by surgical methods or have made a way for itself to the outside (empyema necessitatis).

As will no doubt be pointed out in the further discussion, certain types of empyema may undergo complete absorption and may subsequently leave little trace of their presence. This happy issue depends partly upon the self digestion of the exudate (autolysis) very much also upon the integrity of the absorptive paths, viz., the lymphatics. The character of the infection perhaps also plays a part.

The longer, however, the exudate remains unabsorbed, the more the lymphatics become interfered with, not only by direct extension of the inflammatory process along them, but also by the scar-like masses of connective tissue which forms upon the pleura, so that ultimately a wall

is formed which cannot absorb the most fluid exudate and it consequently becomes encapsuled and remains.

I recall one instance of an encysted effusion of the left side lying between the diaphragm and the lung, in which the connective tissue wall measured a centimetre in thickness. The fluid was pale, straw-colored slime and quite free from pus, but evidently represented the ultimate results of autolytic change. When, however, the fluid is more completely absorbed, then we may get calcification of the remaining exudate or even, as a final result, ossification. The specimen which I pass around and which was obtained in the dissecting room this winter, is a good example.

I recall also an interesting autopsy which I made on an asylum patient in which, at the bottom of the right pleural sac, was a large finger-like mass of bone, all that was left of an old empyema, but beneath the diaphragm of the same side were a mass of old adhesions in the centre of which lay the right kidney, a mere remnant, whilst the left kidney was enormously hypertrophied. The whole history of this case was clear at the autopsy, yet, it had occurred so many years before that no clinical record of it could be obtained.

Of very great interest from the standpoint of general pathology is the question of how a sero-fibrinous exudate becomes purulent. We must recognize, of course, that primarily this may be due to the form of infection. The question has quite recently been studied experimentally at the Rockefeller Institute by Opie. Opie studies the changes which take place in sterile pleural exudates which had been produced either by the injection of aleuronat or turpentine. As a result of his studies he has shown that the breaking down and self-digestion (autolysis) of an exudate, whether in the pleura or in an abscess, is due to two enzymes, at first to one derived from the polymorphonuclear leucocyte, which he calls leucoprotease, and which on acts in an alkaline solution, and succeeding this an enzyme derived from the large mononuclear cells, which he calls lymphoprotease, which will only act in the presence of an acid. In the early stage of an experimental exudate the leucoprotease predominates, in the later stage the lymphoprotease. Both these enzymes are inhibited by substances present in the blood serum, and Opie has found that in a sero-fibrinous fluid in experimental pleuritis there are practically all the inhibiting substances of the serum. We see, therefore, that in a sero-fibrinous exudate there are two influences at work—one, the enzymes dissolving and digesting the fibrin, the other the serum stopping this digestion. If the digestion of the fibrin is delayed, organization of it takes place, connective tissue invades it and adhesions are formed. If the serum inhibition is slight and diminishes, then autolysis becomes more active and not only do these enzymes act upon the formed elements of

the exudate, but they act also upon the surrounding tissue so that tissue destruction results. The tissue solution in an abscess is due chiefly to the lymphoprotease.

Opie succeeded in converting his sero-fibrinous exudate into empyemata in two ways: (1) By injecting a second dose of turpentine into the pleural cavity at the height of the effusion from the first dose; this, by its chemotactic activity increased the cellular elements, converting a sero-fibrinous into a purulent exudate (2) by withdrawing all the serum from the cavity where the effusion was at its height, that is, he removed the serum which inhibited autolysis.

In both cases he got either extensive empyemata or encapsulated abscesses and the interesting fact was discovered that the serum of the empyema no longer showed inhibition of the proteases. It was exactly like the serum of an abscess in differing from the blood serum. I have referred to this work of Opie's because it strikes me as suggestive in indicating the difference between a sero-fibrinous effusion and an empyema. In the first condition the serous fluid contains most of the normal constituents of the serum, those not only which inhibit the activity of leucocytic enzymes, but probably all the protective substances of the serum, especially the *opsonins*, consequently there is the possibility of the normal protective functions of the body acting. When, however, the fluid becomes more and more purulent it approaches more and more the character of an abscess and, as Wright and others have shown, the serum from an abscess is peculiarly deficient in all the protective substances of the blood. As a result, not only does the empyema not contain within itself the means for its own resolution, but it becomes more and more a factor of danger to the surrounding tissues from the increase of the digestive proteases produced from the cells.

In closing I wish to say just a word in regard to etiology; I shall be very brief because the bacteriology of empyema is so important for the subject of treatment and prognosis that it is better taken up there. Empyemata are practically always secondary to infection elsewhere, consequently the organisms found are the organisms of the primary infection. In man they are always due to definite organism, and so-called sterile empyema fluids simply indicate that the organism has not been demonstrated.

A great variety of organisms have been found in empyemata. The commonest are the bacilli of tuberculosis, the pneumococcus, streptococcus, staphylococcus and others such as the typhoid bacillus or the influenza bacillus have been found there rarely. It is probable that the streptococci and the staphylococci are more apt to produce empyemata which are more abscess-like in character, consequently the presence must affect prognosis and treatment. The typically secondary empyemata

are probably most often due to the streptococcus pyogenes; especially is this true of those secondary to scarlet fever and diphtheria in childhood.

EMPYEMA.—MEDICAL ASPECTS.*

HAROLD C. PARSONS, M.A., M.D., M.R.C.P., Lond.

IN speaking of empyema, the general question of effusions into the pleural cavities must be broadly considered. The physical signs are in a great measure common to all, the etiology is to a certain extent alike, and, as far as we know, many purulent exudates pass through a serous phase. As in any infection, it is a matter of degree of infection on the one hand and the amount of resistance on the other. The source of infection is most commonly (1) from the lung, and comprehends lobar pneumonia, by direct infection of the visceral pleura; broncho-pneumonia of various infections; septic foci, abscess, or septic infarction, which are all expressions of the same thing, some having a local and some a general reason for their existence; tuberculous foci, and gangrene. (2) Extension of infection from surrounding structures, from the mediastinum, bronchial glands, phlegmon or abscess of the chest wall, or from below the diaphragm, as subpleuric abscess (abscess of liver very rarely), appendicitis and general peritonitis (Holt); (3) punctured wounds, and (4) infectious fevers.

Thus four general sources are described, but if the truth were known the last named probably first produces foci in the lungs, which are the immediate cause of the infection of the pleura.

While in rare instances an empyema may appear to be a primary condition, in the vast majority of cases it is merely an accident in the course of some other malady.

If empyemata are to be classified, the only useful basis for such would appear to be the bacteriological findings. Not only is this of value in prognosis, but also as a guide in treatment. In empyema a sequel to pneumonia, the pneumococcus is the most common infecting organism. Holt considers that 90 per cent. is a fair estimate in children, alone, or in combination with streptococcus.

Streptococcus is found alone (Prudden and Levy), streptococcus and staphylococcus, staphylococcus (Prudden).

Tuberle bacilli are notoriously difficult to demonstrate in exudates, either in coverslips or culture, and the larger the exudate the greater the difficulty of detection. Animal inoculation is often useful, but it takes time. If the fluid be negative on culture there is fair reason to suspect tuberculosis, but it is by no means absolute. Examination of the sputum

* Read before the Toronto Academy of Medicine.

may be of assistance. Of the rarer organisms, typhoid bacilli have been found in pure culture in an empyema following typhoid fever (Weintraud); colon bacilli, alone or associated; bacillus *ærogenes capsulatus* has also been demonstrated. In empyemata secondary to gangrene of the lung a large array of organisms may be found.

I should like to emphasize the importance of the knowledge of the bacteriology of empyemata. It assists in prognosis, directs in treatment, and may give valuable hints as to origin when that is obscure.

SYMPTOMS.

Characteristic prodromes are rare. The onset may be abrupt, with a chill, and the signs of acute pulmonary involvement, a sharp rise of temperature, painful rapid breathing, with distressing painful cough. With the advent of effusion, these are modified, and though the patient be more comfortable, signs of infection persist, as evidenced by an irregular evening rise of temperature, pallor, and in rare cases, sweats, etc. The physical signs are those of an effusion.

An empyema complicating or following a pneumonia may be masked until the time of the expected crisis or after a crisis has occurred. The temperature may rise again either abruptly or slowly, and definite evidences of sepsis make their appearance. I recall a case of this kind that I saw in consultation out in the country some years ago. A boy, 14 years, had passed through what was described to me as a typical attack of lobar pneumonia. There was no crisis, the temperature assumed an irregular type with a sharp evening rise and marked morning remission. He had been ill for six weeks when I saw him. There was marked loss of flesh, sallow color, hectic flush, cough not severe but short and at times distressing. There were frequent sweats, pulse small and of poor quality. The right pleura was full of pus.

Again, the onset may be very insidious, the condition developing in the course of some of the infective or infectious diseases, or the origin may be difficult to discover. There may be no pain, little or no cough, no marked dyspnoea, except on exertion. If the patient be confined to bed during the development of the effusion, and this occurring slowly, the shortness of breath may be not noticed, even though the chest be almost full of fluid.

I remember being asked to see a physician in consultation, in whom this particular point was most striking. He had been confined to bed for ten days or two weeks with vague pains in the chest and abdomen of doubtful origin. There was slight fever. As I was talking to him I noticed that when he spoke for any length of time he became short of breath, but when I spoke of it he said that such was not the case and

quite resented my remarking it, and my suggestion. His left pleural cavity was full of fluid to the second rib, and his heart much displaced. It is remarkable how much effusion can be borne with comparative comfort when it has developed slowly, and many of us can doubtless recall cases having come to our offices with a pleural cavity well filled with effusion and suffering little inconvenience. When, however, the development of such effusions is rapid the distress may be extreme.

Empyema as a sudden complicating factor in an acute disease, either as a pyothorax or a pyopneumothorax, calls for an immediate recognition and possibly its immediate relief.

A girl 10 years of age was admitted to the service of Mr. Cameron in the Hospital for Sick Children, December 11th last, with acute osteomyelitis of the tibia. Operation was performed the same night. Some days later the breathing became rapid and there were all the signs of pulmonary involvement. On December 18th, at 8 a.m., severe pain was suddenly complained of, in the left side of the chest; dyspnoea was extreme; the respirations rose to 70 or 80 per minute, and there was marked prostration, ashen color, and cold, clammy sweats. I was asked to see her at 11 o'clock and found a complete pneumothorax of the left side. The natural inference was that an abscess of the lung or a septic infarction (which is the same thing) had opened into the pleural cavity and a pyopneumothorax had developed. The cavity was opened and drained by Dr. Starr a few hours later, and pus and air evacuated. In forty-eight hours breath sounds were good all over the front and axilla; in ten days the opening had closed and to-day one would hardly know that such a fatal event as an acute pyopneumothorax had ever existed.

In children the greatest number of cases of empyema appear to be those following pneumonia. The course is similar to those already spoken of. After or during the infectious diseases the advent of empyema is intimated by cough, rapid breathing, and other signs of lung involvement. In the so-called primary empyemata the onset is sudden, with high fever and all the symptoms of pneumonia, local and general.

It is remarkable how rapidly purulent effusions may develop. The chest may be full by the third or fourth day from the beginning of the acute symptoms. In children also there may be an insidious development with slight fever and cachexia, usually in older children.

A few symptoms may be referred to in particular. The cough is usually of a short, suffocative character. While the patient is at rest there may be little or none, but on being moved or on any exertion it is induced, particularly is this so when turned on to the unaffected side.

Dyspnoea is usually in proportion to the extent of the effusion. With small effusions it may be absent when at rest, but on exertion there is almost always a certain degree of discomfort; again this is more notice-

able when the patient is turned on to the unaffected side and is associated with more or less cough.

On sitting up, attacks of faintness are common, more common than we see in other conditions much more severe in every way, and where respiratory distress is correspondingly greater. This is not alone with the great effusions, but with comparatively small ones. It was a striking feature in a child recently under my care; there was little or no displacement of the heart and little dyspnoea. Sudden death may occur on exertion.

An expiratory grunt is rarely present after effusion has taken place. During the painful stage of a pleurisy it may be present.

These symptoms apply to effusion, whether serous or purulent, and have no particular value as differentiating points.

PHYSICAL SIGNS.

Immobility of the affected side; flatness on percussion; lessening, or loss of tactile fremitus; distant, enfeebled breath sounds of tubular quality; bleating or distant voice sounds; displacement of organs, are the cardinal signs always in our minds as the signs of an effusion.

Immobility of the side is almost constant.

The flatness is wooden, the resistance to the percussing and pleximeter finger is great. Above the flatness the note is often Skodaic. In children the whole lung is often flat (or at any rate dull) or at the base behind and in front (Holt). It is very striking in children how an area of consolidation in a lung, or an effusion, though quite small, will alter the percussion note over the entire lung. Above the effusion behind the note has a raised tone, usually strangely tympanitic, and the same may be noted over the whole front of the lung in a more or less modified form.

Loss of tactile fremitus is a matter of degree; in greater effusions it is absent, in the lesser it is feeble. In rare instances it is said to be transmitted along lines of adhesions. In the adult it is undoubtedly one of the most important signs of effusion, but in children it is notoriously uncertain. It is well known how a thickened pleura of long standing will modify the fremitus.

The breath sounds may be suppressed or feeble, distant, and usually of a tubular quality, mostly in expiration. As a rule there are no adventitious sounds. Above the line of effusion the breath sounds are loud and puerile, in proportion to the amount of effusion and the compression of the lung. In children the breath sounds may be loud and characteristically bronchial, and if rales be present they are equally loud and resonant, the so-called pseudocavernous sounds which are most misleading.

Voice sounds, as transmitted through the exudate, have a very characteristic bleating quality, or a nasal twang. They sound far away, rarely they are distant and enfeebled without the marked alteration in quality. In children where the breath sounds are loud and bronchial the voice sounds are equally loud and near the ear—clearly bronchophonic. Whispering pectoriloquy is not heard through a purulent effusion (Bac-celli). Speaking of pseudocavernous sounds, I saw a child two weeks ago, supposed to be suffering from pneumonia. There was a history of pleurisy about two months previously. Over an area from the third to the fifth rib in the anterior axillary line on the right side and extending two inches laterally, was an area of most intense bronchial breathing, the voice sounds were greatly increased and the rales were loud and resonant. The percussion note was dull. Over the base behind there was dulness, the breath sounds loud and amphoric, and the coin sound was well marked. The signs were distinctly cavernous, and the presence of the coin sound alone gave the clue as to the true condition. It was a pyopneumothorax limited to the base and axilla, the area of bronchial breathing first mentioned arose from consolidation at the anterior limit of the main lesion.

Displacement of organs is a most valuable sign. It is also a matter of degree. When the effusion is on the right side, displacement is not so evident, though the cardiac dulness and apex beat may be somewhat dislocated, and in marked cases the liver may be depressed. In a left-sided effusion I have seen the apex beat below the right nipple; visible pulsation in the third, fourth and fifth right intercostal spaces; the spleen palpable; and evident enlargement of the left side, with bulging of the intercostal spaces. In less marked cases the heart may be situated behind the sternum, the apex beat neither seen nor felt, and the point of greatest intensity of the heart sounds may be the only means of deciding its position. Visible pulsation in the right intercostal spaces is not commonly mentioned, I have seen it well marked on two occasions.

Other points worthy of note are:

Edema of the chest wall. This is rarely if ever seen when the effusion is serous.

The subcutaneous veins are sometimes prominent as compared with the healthy side.

Moveable dulness is rare with purulent effusions as compared with serous.

The leucocyte count. Emerson records 89 cases of acute pleurisy of which 26 had 10,000-15,000 per c.mm., only one exceeded 15,000. In 12 it was below 5,000. In empyema the leucocyte count is usually much increased. Dr. Osler mentions a fatal case with 115,000 per c.mm.

DIAGNOSIS.

In many cases it is clear. The so-called unresolved pneumonia is a stumbling block. A case has been, or has been diagnosed pneumonia, at the expected time the crisis does not occur, or, only to a certain extent, and there is still constitutional disturbance. As Holt puts it, "the mistake of regarding empyema as an unresolved pneumonia is much more common than the reverse."

Flatness, increased resistance, lessened vocal fremitus, distant tubular breath sounds and displacement of organs are the main differentiating points. A thickened pleura may be almost indistinguishable from a small effusion. The infallible proof is the use of the exploring needle. This may be used freely and without fear, be it for the diagnosis of an effusion or to ascertain the nature of an effusion already recognized.

PROGNOSIS.

To prognosticate in a general way in empyema is not possible as the outcome depends upon several points: (1) The condition behind the empyema, that is, the origin of it, anatomically and bacteriologically; (2) the condition of the patient; (3) the duration of the disease; (4) the treatment followed.

There are two aims to be sought: (1) The removal of the infective material; (2) the expansion of the lung and falling in of the chestwall, i.e., the obliteration of the dead space in the pleural cavity.

When the origin is a lung the seat of tuberculosis acute or chronic, and when all in our power has been done for the empyema, the prognosis becomes that of the lung condition perhaps more than of the empyema itself. Realizing the possibilities of grave accidents, general tuberculosis, or extension of the pulmonary condition, and the long weary months of a discharging sinus, as often occurs, our prognosis will not be encouraging.

In the case of the child already spoken of, with osteomyelitis, multiple abscesses and empyema, the empyema is now a thing of the past, and the prognosis is not a matter of the chest complication, but of her general condition.

In gangrene of the lung with putrid effusion into the pleural cavity, the outlook both as to the general and local conditions is extremely bad.

Apart from these in which the underlying condition is such an important factor in prognosis, the bacteriological findings form a most valuable basis both of prognosis and treatment.

When the pneumococcus is the infecting agent the cases usually do well. With the streptococcus alone, or in combination with the pneumococcus, the outlook is not quite so favorable, and the same may be said of staphylococcus infections, but here again a most important factor in prognosis enters, namely, the duration of the disease. The continued presence of pus in the pleural cavity has a double effect, the prolonged toxæmia, and the effect upon the lung. In all cases the lung is more or less compressed, and the visceral pleura forming as it does a portion of the abscess wall, undergoes the most profound changes in proportion to the period of time it is thus exposed. The lung in its compressed condition, with its fibrous investments greatly thickened, has little chance of the expansion which is hoped for in a complete recovery.

Hence the earlier the diagnosis, and the earlier the evacuation of the exudate, so much more will the outlook of the case be improved both in the arrest of the toxæmia and in the hope of full expansion of the lung.

I will recall a case in point, an extensive left-sided pyothorax in which repeated aspiration had been performed, and repeated refilling of the cavity had occurred, resulting in the compression of the lung into an oval mass much like a small Rugby football. The visceral and parietal pleuræ were thickened and densely fibrous to about one half an inch and cut like cartilage. The chest wall was opened, and though drainage was complete there was no attempt at expansion of the lung, nor could the chest wall fall in sufficiently to obliterate the cavity.

When with signs of infection, an effusion exists or is suspected in a pleural cavity, puncture for diagnosis. The fluid should be examined both in culture and on coverslip. If the infection be streptococcus or staphylococcus incision and drainage are the proper procedure, even if the fluid be serous. If pneumococcus alone be found, aspiration may be sufficient, even if the fluid be purulent. If the fluid be sterile to culture it is probably tuberculous. In all cases where the exudate is purulent the chest should be opened, though it is said that in pneumococcus cases aspiration is sometimes sufficient. For the reasons above stated, the progress of a case is largely determined by an early diagnosis and prompt treatment.

The remaining point, the condition of the patient, is of course of great moment in prognosis, it is hardly necessary to dwell upon it. If the depression of vitality be from a long continued empyema, both the local and general outlook is poor; if, however, the empyema be recent and can be put under active treatment at once, other things being equal, the prognosis is improved.

TREATMENT.

It is said that the mortality from empyema, before the regular introduction of surgical treatment, was something appalling.

When an empyema has been discovered it becomes a matter of surgery. Aspiration should be looked upon merely as a temporizing or preliminary step, when there is great urgency, and it is a question as to whether it is advisable at all.

It is true that some pneumococcus cases in children do well after aspiration. That by no means applies to all.

The operation should be performed as early as possible, the earlier the better chance of expansion of the lung. Like tracheotomy, this is an operation that any physician should be prepared to undertake at any time.

The fear of long discharging openings in the chest need not be so great if early operation be possible, and this may be still lessened in view of the excellent results obtained by vaccination as carried out according to the method of Sir Almoth Wright.

THE SURGICAL ASPECT OF EMPYEMA.*

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AN empyema being a collection of pus, is a surgical disease, and, like an abscess in any other situation, should be treated by surgical measures. Many patients have died because this truth has not been recognized by men who have an objection to operations.

An empyema left to itself in nearly all cases causes death. It is true that in certain cases of circumscribed empyemas absorption is said to have occurred, but in the vast majority a fatal termination has been the result. Occasionally the pus finds its way through the thoracic wall and points externally. This may occur in any situation, but usually it is found in the fifth intercostal space in front under the pectoralis major. In the event of the pus finding its way to the outside it is called an empyema necessitatis.

The principles of treatment are summed up in the dictum, "Ubi pus, ibi evacua." As soon as pus is diagnosed it should be evacuated. It must be stated, however, that two German surgeons, Runeberg and Holsti, state that exudations operated on during the first month require a longer period for recovery than those operated on at a later date.

Ewald says, "Do not allow a purulent exudate to become old," and the experience of all surgeons except those two confirm the truth of this,

* Read before the Toronto Academy of Medicine.

and goes to prove that the earlier the operation is performed the less is the danger and the better result. There should never be a chronic empyema. The surgeon's duty is clearly to let out the contents of an empyema safely and quickly and cause the earliest possible obliteration of the cavity. A complete cure includes not only the removal of the pus, but also the restoration of the normal functions of the lung.

The walls of an abscess in the pleural cavity differ from those of a collection of pus elsewhere, because the outside is rigid by reason of the ribs and only slightly collapsible and inside is the elastic lung, which tends to shrink. When the pus is allowed to escape the closure of the cavity is brought about by the expansion of the lung, the ascent of the diaphragm, the return to its situation of the displaced heart, and the falling in of the chest wall.

An empyema is usually localized in the lower part of the thorax and only occasionally extends throughout the whole pleural cavity. Mr. Godlee states that a true localized empyema may occur in four situations.

- (1) Between lung and costal pleura.
- (2) Between two lobes of the lung.
- (3) Between lung and diaphragmatic pleura.
- (4) Between the lung and mediastinal pleura.

I shall now describe the method of treatment, which is best, and then consider various modifications. In all cases strictest precautions as regards cleanliness and antisepsis are understood and operative details will be omitted for the most part.

First as regards the anæsthetic. This should be chloroform, because ether might cause violent coughing and the mucus it induces in the tubes would embarrass the already labored breathing. The anæsthetic should be light, as recommended by Arthur Edmunds.

The patient must never be placed on the sound side, but on the back or on the affected side and well over the edge of the table. An incision is made in the direction of and down to the ninth rib and a piece two inches long is removed sub-periostially just external to the lower angle of the scapula. A small opening is then made in the costal pleura and a pair of forceps introduced, and while the assistant steadies and compresses the side the pus is allowed to escape slowly, an operation taking about twenty minutes, so as to allow the lung to expand gradually. If a free incision be made at first the sudden relief of tension may cause alarming syncope. As soon as all tension is relieved a free opening is made and the finger introduced, and all fibrinous masses broken down and removed. It may be necessary to introduce sponges on holders or a curette to aid in cleansing the cavity. If very foul pus is present it would be well to irrigate with 1-5,000 bichloride solution, care being taken to allow a free exit for

the fluid, which had best be poured from a pitcher. Any retaining adhesions should be broken down to enable the lung to expand. A speculum is now introduced and a thorough inspection of the cavity made to see that nothing has been left undone. The pleura is then stitched to skin with four stitches. The cavity is then to be packed with a half-inch strip, 3 per cent. iodoform gauze and a piece of oiled silk applied. This acts as a valve and prevents the entrance of air. Over this a large mass of absorbent wool and the whole well strapped to prevent movement.

After treatment the patient must lie on the affected side so as to lessen its movement. Do not allow any deep inspirations, encourage him to make deep nasal expirations so as to expand the lung. As soon as soreness disappears use pulmonary gymnastics. The gauze must be removed in twenty-four hours and replaced by a fresh gauze in a similar manner. The second dressing is done in thirty-six to forty-eight hours as his condition demands.

Any uncomplicated case of empyema should recover if treated thus.

Some surgeons prefer a drainage tube. If one be used it must be only one-quarter inch longer than the thickness of the chest wall. This can be ascertained as advised by Watson Cheyne, by bending a probe to a right angle, introducing it and withdrawing it until the bent part comes in contact with the costal pleura, and marking the thickness with the finger. The tube must be large and have a curved piece removed from its inner end. The outer end should be fastened to the skin by two stitches. In these cases the dressings must be changed two or three times during the first twenty-four hours and as often as required later.

Various other surgical measures have been advocated for treatment of acute empyema. They are, simple puncture, or aspiration, Bulau's siphonage, simple incision and drainage.

Simple puncture or aspiration is permissible only on the following grounds: (a) As a measure to give temporary relief for urgent symptoms, to be followed as soon as possible with the above operation; (b) in cases of double empyema, where one side is opened and drained, the other should be aspirated for the relief it will afford, and at a subsequent time (end of a week) operated on properly.

Mr. Cheyne says that "it is true that in the early stage of pneumococcal empyema, where the fluid is just becoming purulent, its removal by paracenteses may effect a cure." Mr. Carl Beck says, "But these few cases amount to nothing in comparison to the immense number of those who have died under the aspiration treatment."

In cases of weak and exhausted patients, where there is reason to fear an anæsthetic or from lack of suitable assistance, or in unfavorable surroundings, if puncture be decided on, perhaps the best method is that known as Bulau's method of constant siphonage. It is done as follows:

A large trochar and canula is introduced into the cavity through an intercostal space. The trochar is withdrawn and a drainage tube inserted through the canula, and the canula withdrawn. The tube is then attached to the skin by adhesive plaster and the outer end passed into a basin of antiseptic solution placed under the bed. This operation is rapid and, like paracentesis, can be done with local anæsthesia. It possesses the disadvantages that the cavity can not be cleaned, and the fibrinous masses are not removed, and so plug up the tube.

Simple incision through an intercostal space has the advantage that it can be done with local anæsthesia, but the space is so small that the cavity can not be explored and the drainage is not sufficient. It is only mentioned to be condemned.

In certain cases during the after treatment continuous immersion has been tried. This generally leads to a secondary infection by the colon bacillus, and is therefore to be discouraged.

In all cases as soon as possible the patient should be given the advantages of fresh air, good food and general tonics.

Let us now turn and consider the chronic cases. Those unfortunates who have not had the advantage of free drainage in the early stage of their affliction, but have been permitted to go on from day to day, until the lung has been so bound down that it cannot expand even when the pressure is removed. Some of these cases will have been aspirated repeatedly, and after each aspiration have felt better, and thought that this simple procedure was better than an operation, but unfortunately for the patient all the time the lung has been retracting, and the adhesion is becoming firmer, so that a deplorable condition has resulted. Now in these cases of chronic empyema certain methods have been devised to assist the lung in expanding. Thus Perthe describes, in the *Edinburgh Journal*, vol. 18, page 306, a method of causing a continuous vacuum in the empyema cavity. The abscess having been opened and the contents evacuated, a tube is attached in the opening and the space around it rendered air-tight. The tube leads to the water tap, where the flow of water by passing the mouth of the tube creates a negative pressure.

In Mr. Bryant's surgery another plan is described: Here the opening into the pleural cavity is filled with a rubber obturator through which passes the drainage tube. The outer end of which is connected with a piece of glass tubing with a bag similar in shape and size to a Politzer air bag, but devoid of the valve in its side. This bag is detached and compressed, and then attached to the drainage tube and as it expands it creates a vacuum in the pleural cavity. When the bag is fully expanded the drainage tube is compressed, the bag removed, compressed and reattached, and then the compression removed from the tube. The patient thus has a continuous negative pressure in the pleural cavity.

Each of these methods is good, and will assist in suitable cases.

Let us now consider those cases in which all means such as the above fail to cause the obliteration of the cavity. For these cases several surgical procedures have been devised and used with success. These are, Estlander's operation, Schede's operation, Fowler's method of decortication, and Ransohoff's method of discission of the pleura.

Mr. Cheyne says that in any case of empyema where the discharge has existed for more than six or eight weeks the surgeon should make sure that there is perfect drainage. If the drainage is sufficient and the cavity still exists after four or six months, operative interference must be undertaken.

Estlander's consists in removing portions of ribs over the abscess cavity of such length and from such a number of ribs as to allow the soft tissues to come in contact with the pulmonary pleura. Schede's operation is similar to the above, but the parietal pleura is removed and gives better results.

Fowler's method of decortication consists in removing the dense, thickened pulmonary pleura, which binds down the lung to the vertebral groove. It should be looked on as an addition to Schede's operation, because the early stages of the operation are similar. It is, as it were, an operation to allow the lung to expand and meet the soft flap.

Ransohoff's method of discission of the pleura is described in the *Annals of Surgery*, April, 1906. It consists in making a series of parallel cuts through the pulmonary pleura one-quarter of an inch apart, and then a second similar series at right angles to these.

It is worthy of note that a long continued discharge may be due to necrosis of a rib; of course if this be removed the discharge will cease.

In cases of empyema due to the tubercle bacillus the following is said in Nothnagel's system: "In these cases, if the empyema has developed rapidly accompanied by severe symptoms, if the lungs were not previously extensively destroyed, operative interference gives a fair chance of success." As a rule these cases are unsatisfactory and Mr. Cheyne advises that no free incision be made, and perhaps if there be not marked pressure symptoms it is best to do nothing, the great danger being from a mixed infection.

I have attempted to review the latest literature and present for your attention what seems to be the best surgical method of dealing with empyema. I must apologize for the shortcomings of this paper. However, we can all add a little to our store of knowledge, and if I have said anything of interest we are repaid.

DISCUSSION.

Dr. J. Hunter: (1) Ether is as safe as chloroform if it be given by the open method, and the mask surrounded by a handkerchief in order to

retain the warm air. (2) Remove a portion of two or three ribs, otherwise there is apt to be great trouble in keeping the wound open. (3) The danger of frequent and too heavy percussion as a cause of producing inflammation of the pleura.

Dr. John Ferguson congratulated the readers of the papers on the excellency of their productions. He called attention to the fact that Hippocrates had performed the operation of opening into the pleural cavity. He drained by a piece of wood from which he removed the pith. He poured into the cavity wine and oil. He also held that when one had to open into the pleural cavity it was always well to secure sufficient size of opening, so as to drain well and pack when necessary. The essentials are a free opening, well down, well back, and early done.

Dr. J. F. W. Ross said: Operate early; operate thoroughly with large opening; operate low down, about the point of the scapula; wash when there are nummula or very thick discharge, not otherwise; drain, always with a large tube, and leave the tube in situ until it begins to be forced out by the healing process. If you get puerile respiration, with absence of tactile vocal fremitus, and dulness on percussion, you have fluid.

Dr. N. A. Powell congratulated the speakers on the admirable presentation of the pathology, medical and surgical aspects of the subject which they had made. His own experience had been limited to thirty-two cases, three of which had died and the rest recovered. All methods of treatment from simple incision to the most extensive Estlander operation had been followed. The all important matter is, not the operation itself so much as the rigid asepsis of the entire after-treatment. The advent of the trained nurse had changed entirely the dangers that surround a patient with empyema. A degree of success formerly impossible is now easily obtainable in cases not too long neglected.

PREMATURE INTERMENTS.

By S. BIOPEL, M.D.

EVERY now and then we read or hear of some one having returned to conscious life who had been supposed to be quite dead. One was got ready for burial, although not coffined; another was already coffined and perhaps taken to the grave; still another had been buried, but exhumed for dissecting or other purposes, when recovery is related to have taken place. There are few dissecting rooms of any age that have not in connection with them some tradition of bodies apparently dead resuming the manifestations of life.

If there is any truth in such accounts, is not the subject that has given rise to them a matter worthy of some consideration? Death is surely at its best repugnant enough to our nature without adding to it the horror of being buried alive. Imagine the reality of such a condition. Picture to yourself the event of waking up and recognizing the terrible doom of lying there without any possibility of escape.

No doubt a subject of this kind is liable to catch up a good deal of the sensational; and allowance has to be made for the expected exaggeration. Still, when the matter has been most cautiously investigated and every redundancy removed, there will be quite enough to warrant serious attention. There must surely be some foundation for the hundreds of stories current of persons accounted dead, returning to life. We venture to say there are few of your readers who have not heard or read of such instances.

An article appeared not long ago in a public print adverting to this very subject, and although it tried to explain away the gravity of the condition, it yet admitted the possibility of mistakenly interring a living person. Assuredly if such an occurrence is possible, even barely possible, the occasion of it must be worthy of enquiry. What can be more sacred to us than the sufferings of our fellow beings, particularly the sufferings that involve the most tender sensibilities of our nature, and which increase with the state of culture and refinement; for the more developed mentality will give the livelier consciousness, the more sensitive to torture?

Being called lately to pronounce upon the actual death of F——, about to be buried, I was induced by the unusual request to enquire its reason. Some years ago an aunt of the deceased sickened and to all appearances died. Her residence was some miles from the cemetery. On the day appointed for the burial there was raging one of our worst Canadian snow storms. The funeral was consequently put off until the next day. The next day the storm was even fiercer. When the weather did permit of the reassembling of the neighbors it was remarked that the corpse, though lying in a moderately warm room, gave no signs of decomposition. Suspicion of life was aroused, and the burial was still further postponed. In a few hours the body revived, and the woman lived well and strong for many years afterwards. This narrow escape would not be easily forgotten by those present. It was with F—— as it is with us all, the witnessing of an actual occurrence made a more practical impression than would have done the simple rehearsal of hundreds of similar instances. He therefore exacted the promise in answer to his dying request that every necessary precaution would be used to preclude any chance of his being subjected to the horrible fate of being buried alive.

From very early times we have records of premature abandonment for dead. We can here but mention Pliny, Bacon, Winslow, Bruhier, and Smith as a few of the authors that have written on the subject or given us collections of such instances. The first tells us, among others, of Avicula, the Roman Consul, who was reanimated by the flames from his funeral pyre, but perished before he could be rescued. Vesalius, the eminent anatomist, on opening a body pronounced dead, found the heart still beating. The melancholy fate of Abbe Prevost is well known. He had been struck by apoplexy and was thought dead, but revived and met his real death under the scalpel. Madame Nervache came back to life from her grave on robbers attempting to despoil her of the rings on her fingers. Bruhier, one author alone, gives 183 as authentic cases of persons prematurely pronounced dead, 54 of these already buried.

After collecting what can be ascertained of instances of premature interment, how many times that number may we not suspect of instances not ascertained? Of the many millions that are buried, how few are exhumed; and if of those few so many revived or gave evidence of having revived, think of the vast number of bodies that must be interred still living.

We do not wish to cause unnecessary alarm, but we cannot help feeling that this matter should be more thoroughly sifted, more generally known and more publicly considered. The subject has been almost entirely confined to the medical profession. Yet, with them also, it has not received that practical attention which the public demand would require and procure.

Under this aspect physical death must have for us more than a physiological interest. Surely none of us could feel satisfied with the possibility, far less the probability, of any of our friends being compelled to undergo a death, among the most horrible imaginable. At a time when they are helpless and entirely at our mercy, shall we take advantage of our power to hurry them out of our sight? Certainly not. But what we would avoid in intention we may practically commit.

Can we then emphasize too strongly the danger in question? If we must err, is it not better to err in over-cautiousness? It is the side of mercy.

Suppose the statements regarding this matter are exaggerated, that the representations are overdrawn. Suppose that only half of the cases given are authentic, suppose one-third, suppose one-hundredth. Is not the number still too large? If but three of every century are proved true, think of the many possible yet unproven. If but one had ever been found authentic, this leaves open the possibility of others undiscovered. Yet, there is scarcely a community that has not some story of resuscitation from apparent death. Even in small places scarcely a year passes with-

out hearing the remark that so-and-so looked quite fresh before burial, and "if he had been mine I would not have buried him so soon."

At any rate, what precaution is taken to ascertain the real death of a human body that is placed within a coffin with the lid screwed down as if to imprison a giant, and further weighted by about 80 cubic feet of earth? When even physicians have mistaken apparent for real death, what judgment can be placed on the judgment of the laity? Besides, what attempt is made ever by these as a rule, to make sure that life can never return?

If a body loses its ability to move and to give its usual signs of life, and remains in this state for two days, sometimes merely twenty-four hours (for the law in the healthiest seasons requires no more), and during epidemics only a few hours (policedly enforced), it is boxed up securely and put under ground.

Of course we do not like to think that the friends we buried might have been still alive. The thought is too harrowing. It is easier to poo-poo the chances of such an eventuality. It is more agreeable to defer the subject indefinitely. Besides, when the chances of escape predominate one is apt to flatter himself that he and his friends will be among the lucky, hope and selfishness combining to give the delusive security; moreover, custom will not readily resign her claims to the allegiance of mankind, nor is her power easily resisted. Nevertheless, we feel confident that in this age of mercy and brotherly charity, this danger to human well-being, if properly known and appreciated, will soon everywhere be known and averted. No doubt the whole subject is an uncanny and unwelcome one. Very well. Can we not alter its character? Far better face the full responsibility in its ugliest aspects than to shut our eyes and run the risk of committing an outrage. We are shocked at our dead being disturbed, yet rescue from their living entombment happened sometimes through the pillagers of graveyards.

It is pleaded that the little air contained in a coffin forbids the return of its tenant to vivid consciousness. It is true that in most of the instances of revival, restoration took place under the admission of free air. The circumstances, however, account for this. It would be a very nice coincidence that would find the return of life happen just before the coffin was opened; for had the return taken place previously the manifestations of life would now have ceased, since respirations sufficient to cause consciousness, increased perhaps by struggling, would very soon exhaust the oxygen available.

Is the air contained within the coffin really insufficient to induce that consciousness which would enable the revived to realize his situation? If this could be proved satisfactorily, it would remove from the minds of many an incubus of anxiousness and horror which adds immeasurably to the natural terrors of death and would largely neutralize our representa-

tions and suggestions, although it would not exonerate us from using every precaution to make sure of the reality of death, for it is every human being's right to have his earthly existence prolonged as much as possible, unless a legal necessity requires its earlier termination. Until we have this proof—not merely surmises, or theories, or the signature of a distinguished name—we may take it for granted that when life continues so imperceptibly that even careful medical experts may be deceived, there is not much consumption of oxygen, and that the supply of it left in the coffin will be stimulus enough to start the circulation and cause the brain to be furnished with the blood it needs for the phenomenon of consciousness. Besides, the rest which the tissues and organs have got from the suspension of somatic life-action has been to them a recuperating sleep. Hence the vital return now needs very little prompting and force—and consciousness will readily resume its activity—it may be, not for a long period, but in any case, always too long.

That consciousness is what we dread. Simple premature burial without consciousness would be comparatively unworthy of notice. It is the recognition of the person so buried of his woeful situation that we deprecate—deprecate with all the ardor we can command. The mind is naturally quick in its apprehension and rapid in its march. Its operation there during but one minute, with the intense agony then probable, will equal the sufferings of months above ground and among friends. Let the conscious return last but a few seconds, and whoever knows the nature of mental action will tell you that in those few seconds there may be concentrated the torture of a whole life of wretchedness.

If there be, however, any return to life in the grave, it is more than probable that many minutes will elapse before the air gets poisonous enough to be deadly. In many cases we may expect that the air undergoes this change, the desperate mental agony and struggles of the revived shall have brought on a collapse. The celebrated French physician and writer, Louis, relates that a woman, supposed to be dead, was taken up to the dissecting room and left there for the next day. During the night moans were heard, but without arousing suspicion of their real origin. Next morning, to his horror, Louis discovered that the woman had died in the attempts at extricating herself from the winding-sheet with which she was enveloped. In this case it was certainly not want of oxygen that occasioned death.

In a matter of such serious consequence, can we remain satisfied with merely speculating as to what may or may not be? It is unquestionable that many persons have been buried alive, and this has sometimes been done under the sanction of dearest friends—not knowingly, of course, but with consequences equally real and disastrous as if done intentionally. The supposition is certainly repugnant, but a show of indifference will not

annul the facts. Agreeable or disagreeable, the past is irrevocable; but shall we in the future allow such catastrophies to be possible, and not use the means requisite to obviate them? When the certainty of death is determinable there can be no excuse for premature interments, and when such certainty is not determinable, as in times of epidemics, provision can be made either to furnish a way of escape in view of revival, or to insure the impossibility of consciousness.

The present custom, as a rule, completely ignores the chances of death simulation. If a human body assumes the appearances, its real death is taken for granted, and whatever delay is made in the burial is rather out of courtesy to fashion than to get assured of the irreversible departure of life. At a fixed day and hour the interment takes place, irrespective of the body's state of mortality. So natural is it to fall into a routine way of managing our ordinary concerns.

There can be no objection to making all due preparations for burial and even to perform the funeral obsequies, but before locking up the body within the coffin and sealing its doom under the pressure of tons of earth, is it not but rational to expect that the proper steps be taken to have it certified that life is really extinct? All adults certainly should know the signs of death, and particularly those engaged in superintending a funeral; but before coming to a decision, it will be well to remember that many of the commonly recognized signs are fallible and that the reliable ones may be mistakenly supposed to be present. Reading the signs or hearing them enumerated and described does not always give the ability to discriminate on the actual subject. If experienced physicians have erred in their use of them, would it not be rash for a layman to act without preparation and caution? It will be necessary not only to be careful and thorough in learning the signs, but also to beware of mistakes in the practical use of them.

The only signs universally applicable and reliable are the signs of decomposition. Odor is not always to be trusted. When, in any particular case, doubt continues, expose the body to moderate heat (60-80° F.) and if death be present the suspense will not be long. If the atmosphere gets unpleasant use disinfectants and deodorants—charcoal and dried clay are at least procurable.

In some instances the body may be deposited into its intended permanent resting place, but supplied, in case of revival, with a way of escape or a means of giving alarm. Different methods will suggest themselves according to circumstances and the ingenuity of those interested, offering a class of conditions which would make it unnecessary to wait for decomposition, and would allow the other signs of death to give sufficient warrant for funeral action.

When it is impossible to wait for the infallible signs, and when there is no choice but to deposit in the grave that must be immediately filled in,

measure should be used to obviate the return of consciousness. Destruction or separation from the rest of the body of any one of the organs that form the "tripod of life" (the heart, the lungs and brain), will of course be effectual. But to many persons mutilations of the dead are very repulsive. Modes less objectionable than can be chosen.

Whatever would prevent the functioning of any one or more of these three organs, or preclude the conditions of their functioning, would also be effective. With this as a rule the particular applications may be very various. If the mouth and nostrils, for instance, be closed against all ingress of air, breathing cannot take place, and life will be impossible; but let the obstruction be thorough and secured. Different persons will choose different methods, but whatever method is used, the prevention should be thorough and complete.

It is true by such measures we destroy every chance of recovery. But what else are you doing when sealing the body in a coffin under six feet of earth? You will not even allow it to be disturbed for anatomy, the only chance possible for its restoration to life. If we must ensure its permanent burial, is it not consistent to insure its permanent death? If it is really lifeless, the inflictions or applications proposed can do it no harm, and if its life is still possible, but irrecoverable, is it not more merciful to secure the continuance of the present unconsciousness than to expose our brother to all the horrors of finding himself buried alive, and then to struggle and gasp and torture himself into the most horrible of deaths? Of course we are supposing times and occasions as of epidemics, when no opportunity is allowed to test the reality of death.

The mode of dying may help us to decide on the probability or improbability of revival. If the principal organs, and better still if all the organs of the body remain uninjured and structurally connected, or there is simply a sudden stoppage of function, there will be a better chance of revival than when disease and disorganization have extinguished the vital powers. But who will decide the matter for us infallibly? Very well, then, give the power of resuscitation the "benefit of the doubt."

In judicial hanging the body is generally in a state of health, and unless the injury be sufficient to preclude vital intercourse between the head and trunk, resuscitation may take place, and are there not records of such resuscitations having taken place? On the other hand, death by the guillotine, when properly executed, apart from being quick and painless, very surely obviates the sickening spectacle of revival with repeated execution as well as the chance of being buried alive.

The more this subject is enquired into and considered the more need do we find of emphasizing its importance. Some years ago a man was found frozen and apparently dead. At what time he died it was not known. It might have been but a few moments before being found.

There was no doctor present to decide this point. Rendered apparently lifeless by cold was held to insure certain death, and the man was immediately buried—placed in the very condition that would induce a gradual thawing and thus give him a chance of return to life.

In this age, with the knowledge we possess and the means at our disposal, premature interment or interments without provision against returning consciousness, should be, as a rule, utterly impossible. Though the relatively few instances discovered of revival after burial is, no doubt, largely the cause of the general heedlessness respecting its danger, yet if those who are led to recognize what vast numbers undiscovered those few discovered instances imply, the uncertainty as to the particular persons that may come under it, and the melancholy condition of its unfortunate subjects, if those would use their influence to impress upon others their own feelings and convictions, and do all they can to bring about the necessary change, they would raise a general concern and solicitude that would soon render all such real instances subjects only of past history, and the many fictitious, sensational stories arising in our day, of persons coming back to life, after burial, credible under the present modes of disposing of our dead, would be relegated to the class of incredible and impossible occurrences.

There would also disappear the anxious dread of being buried alive, so common among young people, and especially among the more nervously tempered—a dread which renders them wretched, and which will continue until the proper care and the proper measures are used, and their use well known to prevent the catastrophe dreaded.

With these few hints and suggestions we must close, recommending the subject to all practical Christians and philanthropists, trusting that its fuller consideration will be taken up and pursued by some competent hand. Its esteemed importance will certainly increase with its continued consideration and fuller development.

The nature of life and death and the relation between them are not such simple matters as might at first be supposed. There is a border-land between the two with parts yet unknown or not understood, and the boundary line is often undefinable. Some states of syncope, of trance, of catalepsy, are among the cases belonging to this doubtful domain. The passage from life to death is not always direct, but often attended with pauses or halts on the way. Animal existence is made up of alternations of rest and action, varying in period with the tissue, or organ, or organism, or end to be attained. Rest is the period for recuperation. Ordinary somatic sleep is the rest of the voluntary system. Trance is the rest of the whole human economy so thorough and so nearly like death as to be often mistaken for it. Its period may extend several days. The vitality that was low at its beginning is strengthened by its pause, the subject generally feeling refreshed and happy after it.

PROVINCE OF QUEBEC NEWS.

Conducted by MALCOLM MACKAY, B.A., M.D., Windsor Mills, Quebec.

At the annual meeting of the Montreal General Hospital the following officers were elected: President, James Crathern; Vice-President, H. Stikeman; Treasurer, F. W. Evans; Secretary, Dr. Finlay. The medical staff for the year was also appointed as follows: Physicians—W. A. Molson, A. D. Blackader, F. C. Finlay, H. A. Lafleur; Surgeons—F. J. Shepherd, J. E. Armstrong, J. A. Hutchinson, J. M. Elder; Outpatient Physicians—C. G. Campbell, S. R. McKenzie, C. A. Peters, A. H. Gordon, C. P. Howard, A. G. Nicholls; Outpatient Surgeons—K. Cameron, E. von Eberts, A. T. Bazin, A. R. Pennoyer, W. L. Barlow, R. P. Campbell; Oculist and Aurist—G. H. Mathewson; assistant, S. H. McKee; Gynæcologist—F. A. Lockhart; assistant, H. M. Little; Larngologist—H. D. Hamilton; assistant, R. H. Craig; Neurologist—D. A. Shirres.

The President, Mr. Crathern, submitted the report of the Committee of Management, which contained the following statement:

"Looking back at the work of the hospital, we find in 1857 the number of indoor patients that received attendance in the wards of the hospital to be 966, and the outdoor 4,953, or a total of 5,919, as against 54,187 last year. The income was \$12,230 and expenditure \$12,510 or \$280 in excess of income. During the past fifty years 100,121 indoor patients passed through the wards of the hospital, and the outdoor patients which received treatment numbered 1,094,222, a total of 1,194,343. We regard this as the 'People's Hospital,' and as such your committee feels that the institution is entitled to more liberal support from the citizens of Montreal, and hopes that in the present year income will at least cover the required expenditure."

The addition to the nurses' home has been completed at a cost of \$16,623, and the fireproof galleries between the two surgical wards at a cost of \$11,626. The income from all sources for the past year amounted to \$105,907 and the expenditure to \$124,738. The number of patients admitted to the wards was 3,347, and the number of outpatients 50,840. Twenty-one nurses graduated during the year, and fifty-five new life governors were added to the board.

At the annual meeting of the Sherbrooke Protestant Hospital, the President reported that there was a deficit of nearly \$800. He considered that the hospital was not supported as it should be, either by the public or the medical practitioners in the surrounding districts. He considered that there should be a regular donation from each of the municipalities to the two Sherbrooke hospitals. With \$1,000 from the Provincial Government, \$500 from the city, and \$100 from the municipalities there would be sufficient to put the hospital upon a solid financial footing.

In discussing the situation, Miss McFadyen, the lady superintendent, suggested that the name of the hospital be changed, that a maternity ward be introduced, and that the course be reduced from three to two years for nurses in training. The latter suggestion is to be adopted, as it was felt that few nurses could be induced to enter such a small hospital for a training extending over three years. The question of medical men sending their patients to Montreal instead of to Sherbrooke was then discussed, and some were of the opinion that if the physicians were really aware that they could treat their patients and operate in the hospital just as freely as any of the consulting staff, that there would be a change, and that larger numbers would be sent there. The board evidently does not see that a medical man living even ten or fifteen miles away cannot visit his patient daily when he has a large practice to attend to, and that the rule becomes of non-effect immediately outside of the city itself. Several letters have appeared in the daily press concerning the state of the hospital, some suggesting that the work done does not compare with that done in Montreal, and stating that this is the true reason for non-support. Others prove with figures that the death rate and cures following operation compare favorably with any hospital, and that consequently the support should be greater. There is truth upon both sides; the medical staff is all that could be desired, there being several skilled surgeons in attendance, but there is no properly conducted pathological department. On the other hand, the discipline among the nurses has not been in the past what one sees in a large hospital, but it is hoped that an improvement has already taken place. The publication of these criticisms has to some extent cleared the air, and it is expected that the hospital has entered upon a new era with brighter prospects.

The following cases were reported at the Montreal Chirurgical Society: Living cases—(1) Extensive necrosis of tibia; (2) illustrating filling of bone cavity with Mosestig-Moorhof preparation; (3) an unusual type of carcinoma of the breast, Dr. Garrow. (4) Peripheral atrophy of cornea, Dr. Stirling. (5) A method of treatment for lumbar Pott's disease, Dr. Forbes. (6) Supposed cure of tabes, Dr. Shirres. Pathological specimens: Tubal pregnancy, Dr. Smith. Paper: Excessive length of the sigmoid flexure and its surgical significance, Dr. Bell. Case report: Complete inversion of the fields of vision, Dr. Stirling. Paper: The diagnosis of gonorrhœa in the female, Dr. Gurd.

- Arrangements for the proposed tuberculosis exhibition next autumn are going on apace, and it is thought that Montreal will have an exhibit which will rival the big international one of Washington. The exhibition committee includes Drs. Adami, Martin, Hamilton, Jacques, Carmichael, Shepherd, Elder, Blackader, Finlay, Howard, Ross, Armstrong, McPhail,

Shaw, Stewart, Bell and Campbell, a truly strong committee which will do the work entrusted to it.

In addition to the regular lectures there will be popular demonstrations and talks for children, as it is desired to interest the younger generation as much as possible.

The Montreal General Hospital has now an endowment fund of over \$137,000. The sum increased by \$39,000 last year.

The Notre Dame, Montreal, and the Montreal General Hospitals are asking the Government for an increased grant of \$10,000.

A FRENCH PHYSICIAN'S VIEW OF LIFE.

A new definition of life has lately been essayed by a French physician; this he has set forth in terms of disease, as follows:

First year, infantile complaints and vaccination; second year, teething, croup, infantile cholera and convulsions; third year, diphtheria, whooping cough, and bronchitis; fourth year, scarlatina and meningitis; fifth year, measles. By now half the children are dead. The others live on as follows: Seventh year, mumps; tenth year, typhoid; sixteenth year, chlorosis and spinal irritation; eighteenth year, neurasthenia; twentieth year, cephalalgia, alcoholism and vertigo; twenty-fifth year, marriage (considered, presumably, as a disease). In the twenty-sixth year, insomnia; thirtieth year, dyspepsia and nervous asthenia; thirty-fifth year, pneumonia; forty-fifth year, lumbago and failing sight; fifty-fifth year, rheumatism and baldness; sixtieth year, amnesia, loss of teeth, hardening of arteries; sixty-fifth year, apoplexy; seventieth year, amblyopia, deafness, general debility, loss of tone in the digestive organs, gouty rheumatism. For the seventy-fifth year he mercifully assigns death, a happy ending, indeed, for anyone whose life has fitted into this definition. The list here set forth deserves consideration, by the way, at the hands of those who believe that the practice of medicine is in danger of dying out for want of diseases to treat; it seems there are likely to be plenty of them left, even after the prophylaxis propaganda, which is now rather rife, has reached its limit.

CURRENT MEDICAL LITERATURE

MEDICINE.

Under the charge of A. J. MACKENZIE, B.A., M.B., Toronto.

MANIACAL CHOREA.

In the *B. M. J.*, April 27th, J. Magee Finny, President of the Royal Academy of Medicine in Ireland, reports a case of this very rare condition. The patient was a female, aged 17. With the exception of enlarged cervical glands six years before, she had had good health until two weeks before admission, when she had been treated for rheumatic pains in the limbs. On admission she was suffering from marked choreiform movements, in which the trunk, head, arms and legs participated, but the left side was most affected; the eyes rolled about, and she continually uttered a sort of sob, and had delay in answering questions, which she did intelligently, but in a delayed and difficult fashion. The deep reflexes were not increased, the pulse was 80 and of low tension, the temperature 98. There was a distinct systolic murmur in the mitral area. She became rapidly worse, the choreic movements became more violent, resulting in painful bruises and the rubbing of the skin off the exposed parts of the body, and it became increasingly difficult to control the patient and to get her to take food. Chloral was found the most effective drug in quieting the mind, as she became quite maniacal, shouting and screaming or uttering deep raucous sounds, and the bladder and bowels moved involuntarily. She was bathed in perspiration, and the temperature and the pulse rate went up to 103 and 140 respectively during the last three days of the illness. She had intervals in the midst of the attack when she recognized those around her, and the presence of the attending physician always seemed to soothe her momentarily and she would answer yes and no intelligently to his questions. She died on the ninth day after admittance, unconscious with labored respiration and cyanosis.

A post-mortem examination was made and the report was as follows: "The longitudinal sinus contained a small quantity of mixed clot. The vessels of the cortex of the brain were engorged. A very small amount of fluid was found in the lateral ventricles. The brain presented no abnormal appearances to the naked eye. It was fixed in formalin and pieces were subsequently removed from various parts and examined microscopically. The only portion which presented any abnormal appearance was in the Rolandic area. Here some of the small vessels in the cortex were thrombosed. In others collections of cells with oval nuclei

lay heaped up in the peri-vascular lymphatic spaces, and there were clumps of what appeared to be broken-up nuclear material in these spaces. The spinal cord was also examined and presented nothing abnormal. The cerebro-spinal fluid was examined bacteriologically but no cocci were found, and no micro-organisms in section of the meninges. The other organs of the body showed no abnormality with the exception of the heart, which was in a very atrophic condition, and some calcified tuberculous glands in the mesentery and the root of the lung.

The psychical phenomena were prominent out of all proportion in this case, but differed from the forms one is accustomed to associate with the acute delirium of fever or acute mania by the absence of incoherent speech and wild garrulity. Treatment by medicines failed totally to affect the course of the disease, and the only help it gave was in securing some hours of sleep, with muscular rest. Hyoscine hydrobrom., gr. 1-200, was successful in quieting the delirium, but lost its effect totally at the end. Morphia hypodermically was useless, and chloral proved to be the most effective drug.

Death in this case seemed to be due to exhaustion, and in several of the cases reported there was no other adequate cause apparent, while in others evidence seemed to be present of embolism. The disease is a rare one and is not mentioned in some of the best known works on nervous diseases.

FOR ASTHMA.

℞ Potassium iod.....	ʒII
Fowler sol.....	ʒI
Wine of ipecac.....	ʒIV
Tinct. hyoscyamus.....	ʒIV
Camphor water	ʒVIII

S.—Take a tablespoonful in water after meals three times a day. Any parts of the prescription may of course be modified to suit the exigency of any case. The iodide is here given in the minimum dosage. Another good combination is the following :

℞ Fl. ex grindelia robusta.....	ʒI
Tinct. lobelia.....	ʒII
Tinct. belladonna	ʒII
Potas. iod.....	ʒIss
Syrup and water qs. ad	ʒIV

S.—Teaspoonful four times daily.

GYNÆCOLOGY AND ABDOMINAL SURGERY.

Under the charge of S. M. HAY, M.D., C.M., Gynecologist to the Toronto Western Hospital, and Consulting Surgeon Toronto Orthopedic Hospital.

POSTURE OF APPENDICITIS' PATIENTS.

H. Dreesmann, Cologne (*Medizinische Klinik*, Sept. 8, 1907), believes that the rapid spread of the serous or seropurulent exudate in appendicitis is largely due to the posture. He has consequently employed posture to overcome this danger. Patients are placed on their right side, with bent knees, the left knee being slightly in front of the right, and, if necessary, separated from it by a cushion. This position is comfortable and permits of defecation and urination without turning. Fluid of any kind naturally gravitates into the right iliac fossa and lumbar region. Dreesmann claims that pelvic and left-sided abscesses are thus avoided and encapsulation is encouraged. The position should be assumed before as well as after operation, and especially during removal to the hospital.—*Am. Journal of Surgery*, Nov., 1907.

THE DIAGNOSIS OF APPENDICITIS.

The difficulties which often surround the diagnosis of appendicitis are well known, and the list of things which may be confounded with this disease is formidable enough. But after hearing a paper read at the last meeting of the New South Wales Branch of the British Medical Association by Drs. Blackburn and Gordon Craig, it appears that it may be necessary also to diagnose appendicitis from a dislocated spleen. The patient was a single woman aged about 17 years, a saleswoman, who had gone to the Royal Prince Alfred Hospital as an out-patient complaining of the ordinary symptoms of "indigestion." She was examined carefully and nothing abnormal was found in the abdomen. A fortnight later she had an attack of acute abdominal pain, and when seen by Dr. Blackburn was lying in bed with her knees drawn up and a temperature of 102° F. There was marked tenderness in the right iliac fossa, with resistance and dullness on percussion. Vaginal examination revealed a mass pushing the uterus over to the left side, and depressing the right fornix. In the absence of vomiting and any intestinal disturbance the diagnosis of appendicitis was considered doubtful, and it was thought more likely to be some tubal or ovarian mischief. The patient was sent to hospital, and after a day or two operation was decided upon. On opening the abdomen Dr. Craig found the mass to be the spleen lying in the right iliac fossa; the organ was swollen and tense, and the capsule ruptured in some places and covered with some shreds of inflammatory lymph. It was easily replaced, and the patient made a good recovery. On examination of the abdomen

after the lapse of several weeks, the organ was found firmly fixed and the patient enjoying good health. In the discussion which followed this paper it was suggested that the spleen should have been removed as there was a risk to the patient in leaving the organ in that state in the abdomen. Dr. Craig, however, defended his line of action, and, while keeping an open mind on the point, said he would probably do the same in any other case if he was called upon to operate upon a similar condition.—*British Med. Jour.*, Dec. 28, 1907.

CONSERVATION OF THE OVARIES IN HYSTERECTOMY.

Doléris (*Ann. de Gyn. et d'Obst.*, Nov., 1907) thinks that the value of leaving an ovary or a portion of an ovary behind in hysterectomy is doubtful. If its structure is altered by disease the remnant cannot be of any value. Its value could only be founded on the theory of auto-orthopathy. The author divides the patients operated upon by him into three categories; in the first are placed those that have experienced neither accidents, nor troubles of any sort as a result of a double castration, the artificial menopause having affected them in no way. These were women at about the time of the menopause. The second category includes young women in whom the ovaries were removed after a long period of pain and other bad symptoms, and in whom the menopause caused no trouble except hot flashes, emotionalism and such symptoms for a few months. In the third category are those neurotic women in whom there were exaggerated nervous troubles before the operation and the same condition continued after it. They would not have been cured by any means used. The author has never had any success from the administration of ovarian extracts either in the congestive troubles of the natural menopause or in the morbid manifestations of the artificial menopause. He believes its value to be entirely due to suggestion. The author gives two illustrative cases.

Discussing this paper, Pinard said that most of his patients had had no bad effects from ablation of both ovaries after the age of thirty. In seven cases it had become necessary to operate for cystic degeneration of an ovary that had been left behind. In women from whom the uterus was removed for painful menstruation on account of infantile uterus there was no benefit at all. In these women the ovaries should always be removed because they always produce painful conditions. In cases of fibroma uteri in young women the removal of the tumor and the ovaries has produced no trouble at all. The younger the patient the more urgent is the demand for the removal of the ovaries. In older women the ovary is less liable to

degenerate. The removal of the ovaries seems to have no effect on the flow of milk. A patient observed by the speaker nursed a child for two years after the necessary removal of the uterus and adnexa. The shape of the bust seems to be unaltered by removal of the ovaries. As to the possibility of the sexual desire being taken away, it has been observed that often it is intensified instead.—*Am. Jour. Obs. and Diseases of Women and Children*, Feb., 1908.

OBSTETRICS AND DISEASES OF CHILDREN.

Under the charge of D. J. EVANS, M.D., C.M., Lecturer on Obstetrics, Medical Faculty,
McGill University, Montreal.

INFANTILE SCORBUTUS.

J. L. Morse, M.D. (*Long Island Medical Journal*, Nov., 1907), sums up the symptomatology of scurvy as follows: "The earliest symptoms of scurvy are anorexia, irritability and malaise, and slight disturbances of digestion. These are quickly followed by loss of color. The first symptom to attract attention and to justify the diagnosis of scurvy is most often tenderness or pain in the legs or back on handling. Swollen and purple gums, or hæmaturia, may, however, precede the tenderness and pain. Tenderness and pain on motion of the extremities almost always develop sooner or later, and in neglected cases are soon followed by swelling about the diaphyses. The legs are affected about three times as frequently as the arms. The gums are almost always affected when there are no teeth. The upper jaw is affected much more often than the lower. Hæmorrhages, except under the periosteum, are comparatively uncommon in the earlier stages."

He agrees with the previous writer that scurvy develops in the first six months of life and that it has no connection with rachitis.

In his experience the absence of "freshness" in the food and the over-heating of the food, as well as the composition, are very important elements in the production of scurvy.

In discussing the differential diagnosis, which he does in considerable detail, Morse dwells on the fact that rheumatism never occurs at the scurvy age.

In regard to paralysis, he says that infantile paralysis almost never occurs at the scurvy age. The onset of infantile paralysis is sudden and that of scurvy slow. Hæmaturia is a very rare condition in infancy except as a manifestation of scurvy. This presence, therefore, should always suggest this disease. If the hæmorrhage is due to scurvy the

administration of fresh fruit juice will cure the condition promptly and thus enable the diagnosis to be reached.

Fresh fruit juice acts as a specific in scurvy. He states that two tablespoonfuls of orange juice daily are necessary to control the disease. It is best given one hour before feeding. Drugs and other methods of feeding he considers absolutely useless.

Pain and tenderness are usually the first symptoms to yield to treatment. Improvement in the condition of the gums usually begins later and progress more slowly. Swelling about the bones begins to improve within a week.

The mildest cases are usually well in two days and many cases are well in five days.

PROPHYLAXIS IN EPIDEMIC CEREBRO-SPINAL MENINGITIS.

A. Seibert, M.D. (*Jour. A. M. A.*, Nov. 23, 1907), states that epidemic cerebro-spinal meningitis is a communicable disease, and the meningococcus causing it has been found in mucus taken from the naso-pharynx in 93.8 per cent. of the patients. A person may acquire meningococcus pharyngitis and thus, acting as an intermediary host, may carry this infection to others. Seibert states that for the last twelve years he has used a solution of equal parts of resorcin and alcohol to disinfect the naso-pharynx. The alcohol must be heated before the resorcin is added. A plug of absorbent cotton wound around the end of an applicator, dipped into this solution, is introduced into the naso-pharynx. Two applications, one on each side of the uvula, are sufficient. The cotton should remain for about two seconds in the naso-pharynx. These applications should be repeated every forty-eight hours.

Six treatments usually suffice to stop all secretions of post-nasal mucus in a chronic case. The two cardinal symptoms of post-nasal catarrh, namely, secretion of mucus and multiple swelling of the posterior cervical lymphnodes, usually disappear after three to six applications.

A careful bacteriological examination of a series of cases submitted to this treatment showed very definite results. He therefore proposes this post-nasal disinfection as a prophylactic measure in epidemic cerebro-spinal meningitis.

The resorcin-alcohol should be used :

(1) In the naso-pharynx of the patient to prevent further absorption as well as expectoration of meningococci.

(2) In all persons coming in contact with a patient, especially when post-nasal catarrh is present.

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EDITORIAL.

NEWSPAPER MEDICAL ADVERTISING.

The Press Association recently held its annual meeting. Among other things discussed, advertising came in for its full share of attention. Mr. Medill McCormick, publisher of the *Chicago Tribune*, was one of the leading speakers of the occasion. Among other things he said:

"I thank God the moral standard of advertising conditions in America is one thousand per cent. higher than it was five years ago. The American publisher is beginning to be true to himself and is finding that virtue is more than its own reward. We are cleaning our Augean stables, and every time we sweep the broom across the floor of our counting-house we are uncovering the opportunity for a healthier growth of patronage and supplant the weeds that are being destroyed. The newspaper is only as clean as its advertising columns. It is only as strong as the confidence it can arouse in its readers. It can make them believe, not only in the news which it publishes, but in the advertising which it publishes. We have learned to look the truth straight in the face that a filthy medical advertisement is a filthy corner in the newspaper, and that a lying commercial advertisement is a lie in the newspaper, and that the deceptive financial advertisement is a deception in the newspaper. The reader who is deceived by an advertisement holds the publisher responsible for his unfortunate experience.

"We must keep out the thieves and liars from our papers; we must make our readers feel that they will get a square deal in our markets and come and buy from our printing stalls with the confidence that they will do better than they can at any other market. This is not a question of morality or a question of ethics, but a question of commercial sanity. The public does not want to be deceived. The public has a memory—the public is an Indian and never forgets.

"Let me tell you that the *Chicago Tribune*, in amending its ethics in the last two years, excluded \$100,000 of business both years. You have asked me to tell you of the advertising conditions in America to-day. They are better than they have ever been, and they are going to be better next year, because we are learning to run straight newspapers, to run straight advertising departments.

"I look forward to the time when a newspaper will be able to print at the top of the advertising page, 'We are responsible for every line of advertising that we print. We guarantee a square deal to you. We pledge ourselves to make good any loss that you incur through answering any advertisement that we print.'"

With the foregoing we can heartily concur. A patent medicine is advertised in a certain newspaper, and when its composition is looked into it is little else than whiskey. Another patent medicine is flaunted as a cure for consumption, and it only contains some inert vegetable bitters. In like manner all along the line some nostrum has its claims set forth before the people. This is all wrong. Paralysis, ataxia, Bright's disease, scrofula, consumption, ulcer of the stomach, even cancer, are all easy subjects for the wonderful merits of one or another of the many patent medicines before the public. This ought not to be permitted. From all over the world we are hearing of laws being enacted that make it more and more difficult for vendors of certain proprietary medicines to defraud the public. In Australia, the United States, Germany, and other countries, steps have been taken to protect the people.

Some time ago the medical men of Chicago, aided by lay reformers, laid the matter before the newspaper men, with the result that much that was objectionable was cut out of the columns of the press.

Several things should be done in this country. One of these is that the Governments, Federal and Provincial, should enact a law that would compel publication of the formulæ. In the next place, the medical societies should direct some attention to this matter, and from time to time influence the press to refrain from inserting advertisements of medical preparations when the terms of such are clearly a flight of the imagination. In the third place, no drug should be allowed on the market in any proprietary medicine if it is on the list of drugs which cannot be purchased without a doctor's order or signing the druggist's book. As it is at present, one can buy these prohibited drugs in any quantity in patent medicines.

We hope the Canadian press will lay to heart the words of Mr. Medill McCormick and raise the standard of the advertising morals, so far as patent medicines are concerned in this country. Let the dead past bury the past, but for the future let us hope that a medicine that claims to cure cancer, consumption, locomotor ataxy, and such diseases, will not be able to purchase space in any of our papers.

TUBERCULOSIS' AGAIN.

A short time ago there was held in Toronto a large meeting in the Alexandra Theatre. On that occasion the Governor-General, Earl Grey,

was present. It augurs well for the success of a cause when such citizens of the Empire take an active part in topics of this sort. It is known to us all how deeply His Majesty King Edward is interested in the means that should be taken to lessen the ravages of tuberculosis and cancer.

It is all very well for well intentioned and generous persons to take this subject up and do what can be done for the arrest of such a disease as consumption. But when every credit is given to these efforts that they merit, and it is much, they must fall far short of meeting the conditions, and providing adequate means of staying the disease.

It is a public question. We go further, and contend that it is an international one. Steps should be taken by all the great countries of the world to coöperate in this matter. Each country should provide the means for properly caring for those who are ill. The incipient cases may be cured, or their lives greatly prolonged; while the advanced cases may find a suitable place of isolation. Those who are able to pay would contribute the whole or part of the cost of maintenance. Those who can not pay should be cared for. This is the only way to control such a disease as consumption.

There is scarcely a medical man in Canada who has not known a consumptive workman in a workshop along with other men, but who could not afford to give up his position. The result was that he continued on at his work to an advanced stage of his disease, spreading contagion among his fellow workmen. From such a case many others may arise.

It is a very simple problem in economics to see that it would pay a thousand times over to assist such a case, in order that he might go to a proper place for treatment at the commencement of his trouble. This may sound like paternalism. Well, if it does, what of that? This sort of paternalism is right, nevertheless, and would, in the end, save both money and lives for the State. Tuberculosis is a national and Provincial problem, as much as insanity, and must be met by the strong arm of the State. It is like education, it is the duty of every one to bear his full share of the expense that makes for the nation's or the Province's good. There is a vast difference between true economy and parsimony. We do not hesitate to state that the lives lost each year from wholly preventable causes are worth more, in dollars, on the basis of their money value as wage earners than would pay the national debt each year.

Say what one may about heredity in tuberculosis, but there must come the infection. This infection, in the vast majority of instances, is from one person to another. In a few years, with proper care, consumption would become as rare as it is now common.

CHILD LABOR.

It is with pleasure we note the movement of opinion in this matter. Child labor is bad for any community, as we have pointed out on former occasions. Hon. Mr. Monteith is to be commended for his stand on this question.

Child labor is bad for the health of the child, It is in the growing and formative years and should not have any unnecessary handicap placed on its natural development. This surely is plain to all. A sound mind in a sound body was enunciated by Juvenal, the Roman writer, but first let us have the sound body.

Then child labor defeats all attempts at proper education. The effects of this are very far reaching. In Ontario somewhere about 52 per cent. of the possible school attendance is actually put in. This means that some children attend regularly, some irregularly, and a goodly number do not attend at all. The age which children may go to work and the attendance at school of all under that age must be enforced. Canada is now becoming a country with a mixed population, and it is necessary that the children of these foreigners should be compelled to fall into the conditions of the country as soon as possible. Education is the first step towards this.

But child labor is not only bad for the physical and mental development of the child; it is disastrous to its moral growth. To send a child of tender years into workshops, with their varying environments, means ruin to it in too many instances. Its moral nature receives a warp that no efforts in future can take out. Here is one of the true fields for preventive medicine. Raising the physical, mental and moral standard of a people goes a long way to lessen disease.

THE EARLY TREATMENT OF THE INSANE.

Of recent years much attention has been directed to this very important subject. We have long since got away from the idea that insanity is caused by the unfortunate sufferers being under the possession of evil spirits. We are now safely in the region of pathology, morbid changes, their symptoms, and how to treat these. Insanity is disease. There is room for argument that some forms of badness are not madness, but real madness is not badness and cannot be cured by the same methods.

The cry is going up in Britain, in such journals as that of the British Medical Association, and others, that there is a woeful lack of accommodation for the proper and systematic treatment of incipient insanity. In Ontario a very satisfactory degree of progress is being made. A short

time ago three physicians visited Europe with the view of studying this subject at close range. These were Hon. Dr. Willoughby, Dr. C. K. Clarke, and Dr. E. Ryan. These gentlemen have reported.

The Bulletin of the Toronto Hospital for the Insane for January, 1908, is an important number, as it contains much valuable information regarding what is being done for the treatment of the insane abroad. In Berlin the work of Dr. Ziehen was studied carefully. In the hospital under Dr. Ziehen's control the work is conducted on the hospital plan. There is a day nurse for every four or five patients, and a night nurse for every six. There is a cheerful demeanor in all the wards, with abundance of air and light. The wards were of the decidedly hospital type and formed a marked contrast to the asylum wards. This Clinic forms a sifting department, and those that are found to be hopelessly insane are at once sent on to the asylums. The patients are retained as long as there is any hope of cure, or so long as they may be of interest for teaching purposes or study. Much attention is paid to baths, electricity and hygiene. There are a well-equipped laboratory and other facilities for study.

References are made in *The Bulletin* to the visits to Munich and Giessen. With the arrangements for the early treatment of insanity at Munich the visitors were greatly pleased. It is here that Dr. Kraepelin has done so much for this class of sufferers. His name is now known the world over as the leading exponent of the best and most advanced views on the management of these cases.

The build'ng is in the shape of a large horseshoe, is plain, but attractive in appearance. Every facility is here found for the care of the insane. A well arranged kitchen, airy wards, a thoroughly equipped laboratory, etc., are in marked evidence. The single room is done away with, and patients are kept in groups. Dr. Kraepelin does not believe in isolation. There are no "raving cells" in the Munich institution. While every attention is paid to hygiene, hydrotherapy is regarded as the *sine qua non* in the treatment of mental diseases.

The greatest care has been taken to promote the scientific work of the institution. Patients of special interest are grouped for study. There are excellent opportunities for the study of morbid anatomy and pathology. There is a department for comparative study where observations are made on monkeys, sheep, and rabbits. The experiments with secretions of glands, sera, etc., are carried out under ideal conditions. This department is of the greatest value to the cause of scientific psychiatry. Upon the whole this branch of medical study is in a very advanced position in Germany.

In Britain the work of study and research is not so well advanced as in Germany. In some institutions attention is paid to the scientific side

of mental diseases, as at Claybury, under Dr. F. W. Mott; at Edinburgh, under Dr. Ford Robertson, etc.

The effect of such a report as we find in *The Bulletin* is bound to do much to stimulate the study of mental diseases, and we congratulate Drs. Clarke and Ryan on the results of their labors.

THE HOSPITALS' AND CHARITIES OF ONTARIO.

The report on the hospitals and charities of Ontario has come to hand. It is in the same form as the report of the previous year, namely, well illustrated and in pale blue paper covers. The report gives the annual workings of 65 hospitals, 35 refuges, 31 orphanages, 3 homes for incurables, 2 convalescent homes, 2 Magdalen asylums, and 28 county houses of refuge.

The total number of patients under treatment was 45,551. The deaths numbered 2,799, or a percentage of 6.14. The total days of patients were 1,022,724. The Government grant was \$145,960.71. The amount received from all sources was \$1,210,866.52. Donations amounted to \$152,384.92. The total expenditures on hospitals amounted to \$1,415,140.68. The average cost per day for the Province was \$1.16. The Provincial grant was 11.82 per cent. of the total expenditures.

New hospitals have been opened at New Liskeard, Niagara Falls, Wingham, and Goderich. In many of the older hospitals there were alterations and additions.

The Provincial grant was made 20 cents per day for all patients in hospitals from whom the hospital do not receive more than 70 cents per day. It should be noted that the Government grant was formerly 30 cents a day when the daily cost was only about 75 cents a day. This would be about 40 per cent. of the entire cost of maintenance. Now the grant of 20 cents a day is only 11.82 per cent. of the entire cost.

The various hospital associations have done much to secure a better understanding of the work and needs of these institutions, and have enabled them to lay their claims before the Government much more effectively than when acting individually. These associations have a very important educational value also.

The number of consumptive sanatoria are still too few, but those in existence are doing excellent work. They are located at Gravenhurst, Weston and Hamilton. These, however, are quite inadequate when it is borne in mind that last year there were 2,667 deaths from consumption, and that there would be four or five times as many ill with the disease. Gradually this Province is awakening to the proper methods of dealing with this disease.

Attention is drawn to the urgent need for an institution for feeble-minded females. These are to be found in the refuges and some of the infants' homes. There should be a special place for their custody and care. That they should be at large, to become mothers to an unfortunate offspring, is very wrong; and is intensifying the difficulty of the problem. Most of these in time find their way to the asylums or the prisons. An effort must be made to restrain the multiplication of those who are sure to become inmates of our hospitals, charities, asylums, or prisons. It is not much use increasing our institutions if we allow the increase of those who will fill these at even greater ratio.

Much additional information is given regarding refuges, orphanages, undesirable immigrants, etc. The report should be carefully studied, as it gives a good account of the year's work of one set of our public institutions of which we have every reason to be proud.

Dr. Bruce Smith deserves commendation for his excellent report.

THE HOSPITALS AND THE PROFESSION.

We have on several occasions in the past referred to the attitude that should be taken by the staffs of the various hospitals throughout the country towards the members of the medical profession who live in the vicinity of these institutions. We contend that every hospital should be an educational centre.

Already this view is taking root and good fruit will come of it. In Australia a hospital staff has started holding clinical meetings for the benefit of doctors who may care to attend them. Two hospital staffs in Toronto have been carrying on such work for several years, namely, the Western and the Orthopedic. Now the Toronto General Hospital staff have commenced a course of lectures for practitioners.

This work should be taken up by the staffs of such hospitals as are found in Brantford, Belleville, Ottawa, Winnipeg, St. John, Vancouver, etc., etc. These lectures would have a very stimulating effect on the profession in each locality, and lead to closer study and a better feeling among the doctors. Much interesting material in these hospitals would thus be made to serve a very useful purpose.

There should be a room to meet in, and no time should be lost in commencing to collect some books for it. A record should be kept of all cases of interest. The laboratory should be made useful to the profession. It need not be elaborate, but should have the facilities for doing the ordinary work of examining specimens.

We hope soon to be able to record an advance along these lines. Whatever makes for the good of the profession makes for the good of the

people, and this, in turn, will make for the good of the hospitals. Every hospital in the principal towns and cities should be a post-graduate school.

ONTARIO AND CANADIAN MEDICAL ASSOCIATIONS.

The Ontario Medical Association meets this year in Hamilton, on the 26th, 27th and 28th of May. Already the arrangements are well under way, and the programme as already announced is quite an attractive one. There should be a large attendance.

The forty-first annual meeting of the Canadian Medical Association will be held in Ottawa on the 9th, 10th and 11th June. This seems to us to be most unfortunate. It will be very difficult, if, indeed, it be possible to secure a good attendance and papers for both these meetings. It should be noted, too, that the American Medical Association meets on 2nd-5th June at Chicago.

So far we have not seen any provisional programme for the coming meeting of the Canadian Medical Association. This does not leave much time for the members of the profession to arrange their plans.

While we wish every possible success for both associations, we must give the first place on this occasion to our own Provincial association. It must not be allowed to suffer. An excellent programme has been arranged for, and the profession in Hamilton are preparing for a large attendance. Let them have their expectations fulfilled.

OUR CRIMES TO CRIMINALS.

“Dr. Aibert Wilson, of London, a brain specialist of standing, says that our system of dealing with crime is entirely wrong, and a clean sweep should be made of our legal machinery now in use. The clean sweep is seldom a successful method of reform, but many years of failure should show the need of change.”—*Toronto Globe*.

The eminent historian, Henry Hallam, in his Constitutional History of England, remarks that it would be a good thing if all the law books and statutes in the land were burned, in order to get rid of the evils of the precedents that have come to us from the past.

The methods of dealing with crime and criminals are sadly in need of a thorough revision. The present system of conducting trials is far from satisfactory, and the man on the street is full of lack of confidence in the verdicts rendered as the outcome of many of our most famous trials. A man without money or influential friends is arrested under the charge of committing some crime. The strong arm of the Crown, with its pa-

prosecutors, detectives, and officials, and a full treasury to draw from, can run him down and secure every tittle of evidence that makes for his guilt. He is helpless and is very likely to be found guilty.

On the other hand, take the case of one with great resources and many influential friends, and the result is likely to be far different. He can engage the ablest of counsel, hire all sorts of expert witnesses, and make every effort to secure all the evidence possible in his favor.

We are not going into the question at any great length; but will make bold to state that in the interest of humanity, the side medical men must view such questions from, our present system of dealing with crime is far from satisfactory. Whatever is unsatisfactory is bound to yield bad results. These bad results fall upon mankind as a whole.

AN INTERESTING JUDGMENT.

The following letter was sent to us for our opinion. The letter speaks for itself, and should be read very carefully:

“TORONTO, March 12th, 1908.

“*Dr. John Ferguson, Toronto:*

“MY DEAR SIR,—I attended a man in his last illness and some time after death sent in my account, amounting to \$25. Later on I received a note from the Toronto General Trusts Corporation, asking me to call at their office, Yonge Street, and fill out and make affidavit to two insurance papers in the case of my late patient. I did so, and sent in an account of \$10 additional. In reply the following comes to me:

“Your account of \$35 received. I do not see, however, that we can allow the charge of \$10 for visit to the Corporation and making affidavits. Judge Carmen, of St. Catharines, recently disallowed a payment of this kind on accounts we are passing, taking the position where a physician receives fees for attendance upon a sick person that as a matter of courtesy, they should make any affidavits required to enable the deceased's estate to collect insurance money.

“Yours truly,

.....
“Assistant Manager,

“Toronto General Trusts Corporation.”

“Will you kindly give me your opinion in this matter, and oblige,

“Yours truly,

“GEO. H. CARVETH.”

We do not hesitate to characterize Judge Carmen's decision as calculated to do the medical profession injustice on many occasions, should

it ever become the practice of companies, estates, and the courts. Lawyers act for their clients for many years and charge for their services. On the decease of these clients they act for their estates and continue charging fees out of the estate. They make wills during the lifetime of their clients, and charge for probating these after their clients are gone.

Doctors attend their patients and charge for their services. During these attendances they become possessed of information that is required in the filling up of certain papers that enable the estate to be closed up. Doctors should be paid for this as certainly as lawyers for their services after their clients are dead.

A doctor's services in filling out insurance papers is just the same as his giving evidence as to the sanity of his patient at the time when he made his will. In this latter instance he would be entitled to his fee for attending court in the interests of the estate. He should also receive his fee for attending any office and filling up insurance papers. Physicians must be firm in these matters.

THE SMALLPOX FOLLY.

It takes a deal of talk and printer's ink to convince some people. If the same amount of trouble had been taken to advocate the claims of some worthless patent medicine that has been expended in placing the merits of vaccination before the public, the result would have been fortunes far greater than those dreamed of in the Arabian Nights' Entertainment. Notwithstanding this, we are still surrounded on all hands by smallpox.

It is true that much of it has been mild, but some day it will change, and then there will be weeping, Rachel crying for her children and they are not. Despatches like the following are found almost every day in the newspapers of Canada and the United States :

"Moncton, N.B., March 13.—At a meeting of the Board of Health to-night an order was issued closing the schools and all the churches of the city until further notice because of the smallpox. Children will not be allowed to return to school unless they show certificates of vaccination."

Dr. Hodgetts, Secretary of the Ontario Board of Health, is authority for the statement that during the past ten years smallpox has cost the Province \$2,000,000. He finds much fault with the apathy of the various municipalities for not enforcing vaccination. In Ontario the law is quite clear that municipalities shall engage one or more physicians to vaccinate poor children and charge the same to the municipality.

PERSONAL AND NEWS ITEMS.

—
ONTARIO.

Dr. Cattermole, formerly of London, but latterly of Toronto, has been appointed assistant to Dr. MacCallum at Penetanguishene Asylum.

Dr. Jameson, of Durham, has been again nominated for South Grey for the Local Legislature. Dr. Jameson is the present member.

Dr. Steele, of Tavistock, has been nominated as a candidate for the Dominion House for the riding of South Perth.

The Victoria Hospital, of London, in its accounts for 1907, shows an overdraft of \$3,363. The total expenditures for the year were \$60,603.

Dr. A. W. Nixon, of Georgetown, has been again nominated for the County of Halton for the Ontario Legislature.

Dr. John Caven, of Toronto, had a severe illness a few weeks ago, and has gone to Jamaica. He expects to return about 1st April.

Dr. Toole, of Brussels, has resigned his position as Medical Health Officer.

Dr. Lockhart, Reeve of Hespeler, has been elected Warden of the County of Waterloo.

Dr. McClelland, of Toronto, has gone to Welland to assist Dr. Colbeck.

Dr. Fred. Guest, of St. Thomas, has been appointed coroner for Elgin County.

A case of smallpox has been reported to the Provincial health authorities from Armour Township, in Parry Sound District. The local health authorities took active steps to arrest the spread of infection.

A few weeks ago there was much alarm in Sydenham over smallpox which had broken out in eight houses. The houses were quarantined and many persons vaccinated.

Owing to the continual spread of scarlet fever at the Port Dalhousie school, the trustees ordered the closing of the school for an indefinite period.

The *Canadian Nurse* for March is as attractive and bright as ever. Doctors would do their nurse acquaintances a good turn by recommending this journal to them.

Dr. Warren White, nephew of Dr. James White, was recently very ill with an attack of blood poisoning. The illness was caused by an infected instrument coming in contact with a sore on his hand.

Dr. J. W. Peaker, of Toronto, has been ill with rheumatism for some months. Recently there were rather severe cardiac complications. His friends will anxiously await the result.

Dr. Buck, in the County of Halton, has practised in the county for fifty-four years. For forty years he has been a member of the Trafalgar Township Council, and was Reeve for twenty-four years.

The marriage of Dr. Donald Hingston, son of the late Sir William Hingston, Montreal, and grandson of the late Hon. D. A. Macdonald, Lieutenant-Governor of Ontario, to Miss Lillian Peterson, Goderich, took place at Goderich very quietly on Tuesday, March 3rd.

Dr. Morley Currie, M.P.P. for Prince Edward County, was operated on in the General Hospital, Toronto, on 2nd March, for mastoid abscess. The operation was performed by Dr. P. G. Goldsmith of Toronto. Dr. Currie is doing well.

Mr. and Mrs. Brown, of Toronto, have made a claim against the city. They claim that one of their children, who was in the Isolation Hospital for scarlet fever, was sent home with infection still active. Three children took the disease and two of these died.

Dr. S. J. Meltzer, M.D., LL.D., head of the department of physiology and pharmacology of the Rockefeller Institute for Medical Research, New York, will deliver a lecture on "Nature of Shock" the first Tuesday in the month of April, at the Academy of Medicine.

The city of Toronto is now applying to the Legislature for an enactment to fix the standard of milk at 3.75 per cent. butter fat, and 12 per cent. solids, the same as the present standard for creameries. Dr. Sheard, the City Medical Health Officer, says he would be very well satisfied if a standard of 3.75 were fixed.

Miss Jeannette Lewis, of Hamilton, a younger sister of "Julia Arthur," has undertaken to raise \$12,000 for a Sick Children's Hospital in Hamilton. For this purpose Miss Lewis made an arrangement with the Bennett Theatre that she was to receive fifty per cent. of the price of all tickets sold by her for its performances. She has already made half the sum required.

At the recent meeting of the Canadian Association for the Prevention of Tuberculosis a resolution was adopted urging on the Federal Government the necessity of establishing a health bureau, that there should be medical inspection of school children, stringent regulations regarding milk inspection, and the requirement that hospitals receiving Government aid should provide accommodation for consumptives.

According to the annual report of the Governors of the University of Toronto, the revenue of the University for the year which ended June last amounted to \$456,398. Of that sum \$184,211 was received from students' fees, \$47,459 from endowment, and \$224,728 represents the amount received from the Province. The expenditure for maintenance was \$411,696, exclusive of \$44,701 which was applied towards repaying the amount withdrawn from the endowment fund for the completion of the Physics building.

Among other encouraging letters received by Mr. J. S. Robertson, Secretary-Treasurer of the National Sanitarium Association, is one from Mr. J. B. Smallman, a well-known merchant of London, Ont., enclosing his annual subscription of \$100 towards the maintenance of patients at the Muskoka Free Hospital for Consumptives. Messrs. Wilson, Lytle & Bradshaw Co., Limited, vinegar manufacturers, of Toronto, enclose two checks of \$50 each, one for the Muskoka Free Hospital for Consumptives and the other for the Toronto Free Hospital for Consumptives. The Imperial Order of the Daughters of the Empire have just added to their contributions to the work a check for \$140 to be used mainly in the care of child patients at the Toronto Free Hospital for Consumptives.

MARITIME PROVINCES.

There has been a good deal of trouble with smallpox near Moncton, N.B. It became necessary to prohibit the holding of public meetings and church services. The theatre also closed its doors for a time.

The Lunenburg-Queen's Medical Society has organized an Anti-tuberculosis League. A series of public talks and popular lectures will be given on the prevention and cure of the disease will be given. The annual meeting will be held at Bridgewater in June. There will be a special programme prepared for the occasion.

WESTERN PROVINCES.

Dr. Brian holds the position of Medical Health Officer for Douglas.

Edmonton has now well fitted Provincial laboratories in the Government offices. These are under the charge of Dr. D. G. Revell.

The Manitoba Government has named a commission to look into and report upon the hospital question.

The ladies of Wetaskiwin are going to support a small hospital of six beds until the municipality takes it over.

The ratepayers of Calgary have carried a vote for \$75,000 for the hospital. It is proposed that the city should own the hospital.

Dr. Dixon has opened a private hospital in Wetaskiwin. It is claimed there is much need for a public hospital.

The General Hospital at Neepawa, which was finished during the year 1907, is free of debt.

Dr. Walker has been reappointed Medical Health Officer for Wetaskiwin, Alta., for the year 1908.

Dr. Low, of Regina, has been appointed chairman of the University Council in place of Bishop Grisdale, who resigned the position.

Dr. McInnis, of Neepawa, has been appointed Medical Health Officer instead of Dr. McRae, resigned.

Dr. Archibald, of Strathcona, has been appointed Medical Health Officer for that place.

Calgary has enacted a by-law that before any one can open a dairy business he must produce a certificate as to the health of his cattle from a regular veterinary surgeon.

In the Home for Incurables in Portage la Prairie for the year 1907 there were 119 males and 65 females. There were 56 admitted during the year and 28 died.

During the year 1907 the Deaf and Dumb Institute in Winnipeg admitted 55 males and 42 females. There were 82 in the institution at the end of the year.

A deputation interviewed Sir Wilfrid Laurier with the object of securing a Sanitarium for Consumptives in Alberta. It is contended that consumptives from all over the Dominion go to that Province.

Dr. George Clingan is Mayor of Virden. He is an old Dufferin boy and was a student at Orangeville High School and the Toronto School of Medicine.

Dr. McKenzie had a narrow escape from drowning near Rainy Lake City. The doctor was paying his usual visit to one of the camps, and when on the lake opposite Rainy Lake City his team broke through the ice and in a minute the doctor and two men with him were all floundering in the lake. He lost one horse and the contents of the sleigh. With the other horse he walked several miles, soaked with water and encased in ice, to the camp, where he was cared for.

The proposal to establish a hospital for consumptives within the bounds of the National Park, Banff, Alta., resulted in the calling of a public meeting to consider the matter, and after a discussion of the proposal by a very representative meeting a strong condemnatory resolution was passed without a dissenting voice. The resolution took the ground that the establishment of such an institution in the National Park would create an aversion on the part of tourists and defeat the purpose for which the park was instituted. It also suggested that the proposed hospital be located in the foothills in the vicinity of Calgary, where the climate was just as suitable for the cure of consumption.

BRITISH COLUMBIA.

Dr. Underhill, Medical Health Officer for Vancouver, has been making strenuous efforts to improve the milk supply of that city.

As the result of an appeal made by letter, the British Columbia Sanitarium for Consumptives has received \$1,400.

An antituberculosis society has been formed with a membership fee of 50 cents. The funds are to aid in the furnishing of the sanitarium.

Dr. J. Nisbet Gunn, of Vancouver, after spending two years abroad on diseases of the eye, ear, nose and throat, has resumed practice.

Drs. Arthur and Joy have been elected school trustees for Nelson, and Dr. Hall is Mayor of Victoria.

Dr. Doherty, Superintendent of the Provincial Hospital for the Insane, has gone east to visit similar institutions.

Dr. Ernest Hall, of Vancouver, has sold his practice to Dr. Wilson, and will confine his work solely to surgery and gynæcology.

Dr. William E. Gomm, of Sandon, B.C., has been appointed coroner for the district.

The elections to the Medical Association resulted in the selection of the following board: Dr. Jones (Chairman), Dr. Fagan (Secretary), Drs. S. J. Tunstall, R. E. McKechnie, Procter, R. E. Walker, and Sutherland.

FROM ABROAD.

Dr. John Bell, of the Hospital in Hong Kong, reports a case of acute general septicæmia caused by the pneumococcus.

There is a Medical Defence Society in Queensland. It is reported as doing good work and as having a substantial fund on hand.

In the *Lancet* for February 15th, Drs. Pasteur, MacCormac and Foulerton report a case of acute poliomyelitis caused by diplococcal infection of the spinal sac.

William Allingham, F.R.C.S., consulting surgeon to the Great Northern Central Hospital, died on February 4th at the age of 78. He was well known as an author and an authority on diseases of the rectum.

A society has been established in the Transvaal for the study of biological questions. Dr. A. Theiler, C.M.G., has taken an active part in its formation.

Dr. William Carter has retired from the post of professor of materia medica and therapeutics in the University of Liverpool, and has been made professor emeritus.

At a meeting of the Council of the British Medical Association the Middlemore prize of £50 was unanimously awarded to Dr. Simeon Snell for his contributions to the science of ophthalmology.

Professor von Esmarch, of Kiel, celebrated his eighty-fifth birthday recently. His native town, Tönning, in Schleswig-Holstein, has erected a statue to him.

It is proposed to erect by a municipal loan a hospital of 2,000 beds in St. Petersburg, to be called after Peter the Great. The hospital will cost about 5,000,000 roubles.

The friends of the late W. S. Playfair have collected £1,000 for a memorial to him in King's College Hospital, with which he was so long connected.

The widow of the late Charles T. Yerkes is going to build a first-class hospital in Chicago. She intends leaving a sufficient sum to ensure its endowment after her death.

The death of Dr. Fancourt Barnes, a son of the late Dr. Robert Barnes, occurred a few weeks ago. He was the author and editor of a number of works on obstetrics.

Professor Karl von Voit, the eminent physiologist of the University of Munich, is dead. He was an extensive writer on physiology and biology.

Last year a school for mothers was opened in Budapest for the purpose of teaching them how to prevent infectious diseases and how to take care of sick children. The school has been very popular.

During the past five years no less than £800,000 worth of ready-made pharmaceutical preparations have been imported into Hungary. It is proposed to place a tax upon these preparations.

Sir John D. Macdonald died on 7th February at Southsea. He was born in 1826 and was a distinguished biologist. He devoted much attention to naval medicine and surgery, for which he was knighted.

There has recently been an epidemic of smallpox in the State of Minnesota. There were at least 2,000 cases, and steps were taken to prevent the disease spreading into Canada.

The plague in India is still exacting a heavy toll from the population. During the four weeks of the latter part of December and the first half of January the deaths numbered 2,602, 2,741, 2,613 and 2,832 respectively.

In the nine years that the Liverpool School of Tropical Medicine has been in existence it has expended £60,000 on its research work and expeditions. Just recently it conferred upon Lord Lister the Mary Kingsley Memorial medal.

Professor Stoettzner, of Halle, has described the case of a child who began to menstruate when in her second year. At first the periods were at intervals of eight weeks and then every five weeks. She had well developed mammæ and genital organs.

Dr. Pulawski, of Radziejor, reports good results in the treatment of severe cases of scarlet fever with a serum obtained by the inoculation of the horse with streptococci taken from the blood of scarlet fever patients.

Professor Herman Snellen, the eminent authority on ophthalmology in the University of Utrecht, died recently in his seventy-fourth year. He was the successor of Donders, whose work he took up and nobly carried on.

From the *Transvaal Medical Journal* it appears that there is much good progress being made in the various portions of the South African dominions. The various medical societies are active and doing good work. There is an evident desire to curtail all forms of irregular practice.

Like most discoveries, the theory of Waldeyer about the neurones has been several times attacked. Recently Ross G. Harrison, in a series of experiments, has added much towards the confirmation of the neurone theory as originally laid down.

Dr. John Henry Galton died at his home in Upper Norwood, Surrey, Eng., 7th February. He was in his sixty-eighth year. At the time of his death he was a member of the Council of the British Medical Association. He was very highly esteemed by all who knew him.

The District Court of Melbourne fined a grocer for selling a preparation which contained some morphine which the wrappers did not mention as being contained therein. This action was taken under the pure food law.

Dr. Stein, of Budapest, strongly recommends strychnia hypodermically in the treatment of diabetes insipidus. He begins with small doses and gradually increases. Polyuria and polydipsia disappear in about three weeks, and the patients rapidly gain in weight.

It is stated on good authority that the people of Great Britain spend \$75,000,000 on cigarettes, \$45,000,000 on pipe tobacco, and \$5,000,000 on cigars, or a total of \$125,000,000. It is estimated that 80 per cent. of the men and 20 per cent. of the women use tobacco in some form.

Dr. Edward L. Trudeau, of Saranac, has been compelled through ill health to give up all thought of acting as the president of the Medical Society of the State of New York, and Dr. Root, first vice-president, will take his place.

Dr. Delagenière, of Paris, has removed the entire stomach ten times. Of these four did not survive the operation. The remainder lived from seven months to three and a half years. One patient is active and enjoys good health.

From an article in the *Australasian Medical Gazette*, we learn that a number of the meetings of the Medical Society for Queensland will be held in the hospital and clinics given. This is to substitute the absence of a medical school and regular lectures which medical men might attend.

The mortality returns for England and Wales show that the death rate was 15.4 per 1,000. Tuberculosis caused 11 per cent. of the total death rate. The report shows a considerable increase in the number of deaths from cancer.

Mrs. George Campbell, of Steubenville, Ohio, recently gave birth to six well-formed children. Their united weight was 23 pounds. Three were boys and three were girls. It is thought one boy and one girl will

live, the others dying shortly after birth. To two of Campbell's brothers twins have been born, and each of two other brothers is father to triplets.

Dr. A. C. Dixon, of Autofagasta, Chili, recommends very highly Yersen's serum in the treatment of the plague. He contends that the serum is not injurious, is non-toxic, and that it must be administered in much larger doses than is usually the case. It should be given in amounts sufficient to cause a distinct rigor after its employment.

The British Parliament is dealing this session with a bill which will make some important changes in the law regarding reformatories for children, the conditions and age of child labor and young persons under 16 years. The bill prohibits the sale of cigarettes to persons under 16 years. The bill is framed on truly humanitarian lines.

Still another medical journal is to be launched under the caption of *Epilepsia*. It is to be published in English, French, and German. The patrons are to be Drs. Bechterew, Binswanger, J. Hughlings Jackson, Luciani, Obersteiner, and Raymond. Among the editors the names of Drs. Claude, Turner, Bruns, and Spratling are given.

An association has been formed in Paris for the purpose of giving clinical instructions in the various hospitals. Professor Lucas Championnière is the president and Drs. Babinski and Variot the vice-presidents. The first meeting was attended by over 500 medical men, many of whom are professors.

The medical inspection of school children in Berlin, Germany, has shown that out of 277,730 children, 5,129 suffered from malnutrition, 1,751 from scrofula, and 1,386 from pulmonary tuberculosis. The municipal authorities have set aside 20,000 marks to aid in procuring food for the poorest children.

Some years ago an Act was passed in New Zealand, giving the Postmaster-General power to prohibit the use of the mails to any person or company carrying on any business of a fraudulent, dishonest, or gambling nature, if the Postmaster-General became satisfied that such was the case. In this way many patent medicine concerns have been put out of business.

Dr. Nathan Raw, of Liverpool, has made extensive use of Koch's tuberculin R. in the treatment of tuberculosis. He speaks very highly of the results he has obtained in 104 cases of tubercular disease of various parts of the body. He states that every effort should be made to decide whether or not there is amyloid disease in the liver, spleen and kidneys, as the tuberculin will then do no good.

Professor W. E. Dixon read a paper before the Royal Medical Society, of London, in which he contended that rise in blood pressure is one of the main causes of arteriosclerosis. He cited as proof of this the degeneration that took place in the vessels of small animals by compress-

ing the aorta for a short period once a day. The other cause is the toxic.

Dr. Ferguson, of Malvern, England, sued the town council for damages sustained by him in losses in the conduct of his hydropathic institution. The council polluted his water supply with sewage and some of his patients contracted typhoid fever, and recovered damages from him. He in turn secured a verdict for £7,500. This should make municipalities careful.

Dr. Brenner, of Vienna, operated upon a woman 61 years of age for a hernia. He found the sac to contain much intestine, mesentery, and some pus and dark colored fluid. The operation was performed under spinal anæsthesia produced by tropacocain. The patient stood the operation well and eighteen feet of ileum were removed. The patient made a good recovery.

Considerable attention has been given within the past few weeks in Britain over the fact that a medical office with a salary of £500 a year attracted so many replies from practitioners of high standing. It is apparent that medical incomes are small when so many apply for such a position after spending several thousand pounds and a number of years over their studies.

In collapse in pneumonia Dr. W. P. Worster recommends that the patient be placed in a bathtub, containing water at a temperature of 100 degrees, up to just above the hips. The patient is supported in a semi-recumbent position. Water is poured from some height at a temperature of 60 degrees. This rapidly revives the patient, gives strength to the heart's action, relieves delirium, and induces sleep.

Dr. Henry Maudsley, the eminent alienist, has written the London County Council, offering £30,000 for the purpose of establishing a special hospital for the treatment of mental diseases. He contends in his letter that there is much need for such an institution, and claims that the early and proper treatment of insanity will restore many cases to health and reason.

Dr. Leduc, professor of physics at Nantes School of Medicine, has introduced a method of producing sleep and anæsthesia by an electric current of 3 volts for a rabbit. There is an interruption in the current at the rate of 1,000 times per second. The cathode is placed on the head of the animal and the anode on the lower part of the spinal column. Good results are hoped for from this method.

Dr. William A. White, Superintendent of the Government Hospital for the Insane at Washington, in his recent book on "Outlines of Psychiatry," defines insanity thus: "Insanity is a disorder of the mind due to disease of the brain manifesting itself by a more or less prolonged

departure from the individual's usual manner of thinking, feeling and acting, and resulting in a lessened capacity for adaptation to the environment."

OBITUARY.

RICHARD COUGHLAN, M.D.

Hastings mourns the loss of one of her prominent citizens in the death of Dr. Richard Coughlan, which took place on Saturday, 29th February. He was born in that village forty-eight years ago, a son of the late Timothy Coughlan, who was one of the founders of the village. He graduated from Queen's University, Kingston, in April, 1881, at the age of 22 years, and for the past twenty-five years has practised in that vicinity with great success. In religion he was a Roman Catholic, in politics a strong Conservative, and was at one time spoken of as a candidate for the Legislature for East Peterboro' in the coming Provincial elections. He leaves a widow, four daughters and one son.

HENRY GOING, M.D., M.R.C.S.

Dr. Going died at his home in London, Ont., in the end of January. He had attained the advanced age of 91 years. He graduated in Ireland sixty-six years ago. Shortly after graduating he settled in London, where he remained to the time of his death.

J. A. KNIGHT, M.D.

Dr. Knight died at Toronto Junction of phthisis a short time ago. He was a graduate of Trinity of the class of 1899. He practised in Michigan, but came to Toronto when his health failed.

A. H. ANDERSON, M.D.

Dr. Anderson died at Webbwood, Ont., on 16th March, 1908. He was out in South Africa during the war, with one of the Canadian contingents. His brothers, Drs. H. B. and Duncan Anderson, practise in Toronto.

WILLIAM M. TEETZEL, M.D.

Dr. Teetzel died at his home in Cleveland, Ohio, on 18th March. He was taken ill with some acute spinal cord disease and died in four days.

He was a graduate of Trinity. He married Miss Edna Fox, of Toronto, in 1897, who survives him along with four children. Dr. Teetzel, of St. Thomas, and Judge Teetzel, of Toronto, are brothers.

BOOK REVIEWS.

SURGERY, ITS PRINCIPLES AND PRACTICE, VOLUME III.

In five volumes. By 66 eminent Surgeons. Edited by W. W. Keen, M.D., LL.D., Hon. F.R.C.S., Eng. and Edin., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Phila. Volume III. Octavo of 1,132 pages, with 562 text illustrations and 10 colored plates. Philadelphia and London: W. B. Saunders Company, 1908. Per volume: cloth, \$7.00 net; half morocco, \$8.00 net. Canadian Agents, J. A. Carveth & Co., Limited, Toronto.

This volume of Keen's Surgery deals with the head, the neck, the thorax, the œsophagus, the abdominal wall, the peritoneum, the stomach, the liver, the spleen, and the pancreas. The contributors to this volume are E. W. Andrews, G. E. Brewer, H. Cushing, J. C. Da Costa, J. M. T. Finney, G. Gottstein, A. Kocher, C. H. Mayo, W. J. Mayo, J. C. Munro, B. G. A. Moynihan, E. Owen, A. W. M. Robson, and H. Smith. These are all surgeons of wide experience and well-known authors.

This volume is fully up to the high standard of the two previous volumes. Certainly the editor and his associates are sparing no pains to give the profession a thoroughly up-to-date work on surgery. These volumes are appearing in such close succession to each other that the full interest in the work is maintained, and the earlier volumes will still be quite recent when the last one has been given to their readers.

The merits of this volume are many, but may be summed up in the words handsome, scientific and practical. All the authors and publishers could do has been done to render this volume attractive in every way as to form and matter. The best of paper, clear type and first-class art are all found here. We can truthfully say that any one who has this work need go no further for book assistance on surgery.

DISEASES OF THE HEART.

By Prof. Th. von Jurgensen, of Tübingen; Prof. Dr. L. Krehl, of Greifswald; and Prof. Dr. L. von Schrotter, of Vienna. Edited, with additions, by George Dock, M.D., Professor of Medicine, University of Michigan, Ann Arbor. Octavo of 848 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1908. Cloth, \$5.00 net; half morocco, \$6.00 net. Canadian Agents, J. A. Carveth & Co., Limited, Toronto.

This splendid volume treats of diseases of the heart under a few main headings, namely, weakness of the heart, endocarditis, valvular

disease, diseases of the myocardium and nervous diseases of the heart and diseases of the pericardium. Turn to the index where you will and it will be found that nothing has been omitted. Special attention is paid to the effects of general diseases on the heart. Much thought is bestowed upon the all-absorbing topic of arteriosclerosis and its effects on the heart. The work is edited by Professor George Dock, of Ann Arbor University, and the translation made by Professor Alfred Stengel. The work is well illustrated, printed on good paper and with clear type. The publishers have certainly given us a very attractive and handsome book. The subject treatment receives full consideration. As might be expected in a book from the authors who are responsible for its teachings, every attention is given to pathology, diagnosis and prognosis.

To our readers who may desire a full, clear and trustworthy treatise on the diseases of the heart, we can recommend this work in words of unstinted praise. It is quite impossible to note its many excellent features in the space at our disposal. We have looked through the work with the object of pointing out what might appear to be its strongest sections, but feel bound to state that there is such a uniform standard of merit in all its chapters that no one can be said to claim any special praise over another. We really like this work and feel it ought to have a very wide distribution.

PROGRESSIVE MEDICINE, MARCH, 1908.

A quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., and H. R. M. Landis, M.D. Vol. I. March, 1908. Lea and Febiger, Philadelphia and New York. Price, paper, \$6.00 per year.

This volume contains the surgery of the head, neck, and thorax, infectious diseases, including pneumonia and acute rheumatism; the diseases of children; rhinology and laryngology and otology. The contributors are C. H. Frazier, R. B. Preble, F. M. Crandall, D. B. Kyle, and A. B. Duel, respectively, on the foregoing sections. The matter in this volume is excellent, and gives in each section reliable digest of recent progress. This issue is got up in the attractive form of its predecessors. The whole series reflects great credit on the publishers and contributors.

THE PYONEX, ITS THEORY AND PRACTICE.

By W. B. Rule, M.R.C.S., L.R.C.P., 42 Blenheim Crescent, Ladbroke Grove, London, W. Publishers, John Bale, Sons and Danielson. Price, 12s. 6d. net.

This book sets forth the value of a method of applying counter-irritation to inflamed areas. There is a small instrument that is operated

by a spring and which punctures the skin with 30 fine needle points, but not so as to draw blood. A number of these applications are made according as the area is large or small. To these spots an oil composed of lytta, euphorbium, and oleum amygdalarum dulce is at once applied and covered by cotton wool to keep the parts warm. The author claims that it extracts the inflammation, and by causing a free flow of pus to the surface relieves suppuration in the deeper parts affected. He claims for this treatment a wide range of usefulness.

MINOR SURGERY.

By Edward Milton Foote, A.M., M.D., Instructor in Surgery, College of Physicians and Surgeons, (Columbia University); Lecturer on Surgery, New York Polyclinic Medical School; Visiting Surgeon, New York City Hospital; Visiting Surgeon, St. Joseph's Hospital; Consulting Surgeon, Randall's Island Hospitals and Schools; formerly Chief in Surgery at the Vanderbilt Clinic. Illustrated with four hundred engravings from original drawings and photographs. New York and London: D. Appleton and Company, Price, \$5.00.

Dr. Edward Milton Foote in his *Minor Surgery* presents to the profession a book of the most practical nature; he covers fully and in detail exactly the class of surgical conditions with which general practitioners most frequently come in contact. He describes the treatment of many minor surgical processes which are almost untouched either by books on general surgery or the comprehensive systems of surgery. It will prove valuable to the older members of the profession by bringing some of their old-fashioned ideas up to date; although it is to be regretted that Dr. Foote has not seen fit to include such recently established principles as the treatment of acute inflammatory changes by vaccine injection or by the hyperæmic methods of Bier. It is almost needless to emphasize the infinite value of this work to both the surgeon in charge and the student in attendance at out-patient clinics, for it is from this class of cases that the author has drawn his data.

The book is divided into sections on the anatomical regions of the body, under each of which injuries, inflammations, tumors and deformities are discussed. The arrangement is excellent, and a good table of contents and index enable one to conveniently use it for reference. Original and well-finished photographs are profusely distributed throughout the book. If space allowed, one might mention numerous articles on particular subjects which are worthy of special attention. One cannot fail, however, to commend the author for including a chapter on the female genito-urinary organs, for which one usually has to refer to works

on gynæcology. Other chapters deserving of special mention are those on anus and rectum, on dislocations and fractures of the hand, on injuries of leg and foot, on bandaging and on surgical dressings.

The medical profession has waited long for just such a book as Dr. Foote has written, and will thank him many times for the admirable way in which he has accomplished his task.

TREATMENT OF DISEASES.

Treatment of Internal Diseases for Physicians and Students, by Dr. Norbert Ortner, of the University of Vienna. Edited by Nathaniel Bowditch Potter, M.D., Visiting Physician to the New York City Hospital, to the French Hospital, and to the Hospital for Ruptured and Crippled, Instructor in Medicine, Columbia University. Translated by Frederic H. Bartlett, M.D., from the fourth German Edition. Philadelphia and London: J. B. Lippincott Company.

The author in his preface states that his endeavor has been to set forth (1) the rationale and technic of every variety of therapeutic measure useful at the bedside; (2) directions in regard to the choice of mineral waters and baths suited to each individual condition; (3) prescriptions and an account of the actions of drugs.

The book takes up diseases under the headings of the various systems: circulatory, genito-urinary, the blood, metabolism, the mouth, the larynx, the bronchi, the lungs, the pleura, the stomach and intestines, the peritoneum, the liver and gall bladder, and infectious diseases.

An examination of the work makes it quite clear that the author is a person of wide experience in the treatment of disease. Throughout the book, indeed, on every page, are to be found suggestions or prescriptions of a most helpful character. Treatment is viewed from the widest standpoint, and embraces massage, electricity, etc., as well as the prescribing of drugs.

The subject of dietetics receives much attention. This part of the treatment of internal diseases is placed upon a thoroughly scientific footing in this work. It is the observation of the details herein laid down that leads to success in the management of obstinate cases.

The book is got up in a very attractive and readable form. The paper is soft and easy on the eyes. The type is clear and the binding good. We congratulate heartily all connected with this book and wish for it a wide circulation—the wider the better.

MINOR MEDICINE.

A Treatise on the Nature and Treatment of Common Ailments. By Walter Essex Wynter, M.D., B.S. (Lond.), F.R.C.P., F.R.C.S., Physician to the Middlesex Hospital and Lecturer on Medicine in the Medical School; Examiner in Medicine to the Royal College of Physicians; Late Lecturer in Pharmacology and Therapeutics, and Examiner in Pharmacy to the Royal College of Physicians. Toronto: D. T. McAinsh and Co., 123 Bay St. London: Sidney Appleton, 1908. Price, \$1.75.

This little book of Dr. Wynter's is a good one. It touches upon many of the minor ailments and is, therefore, of a thoroughly practical character. Any one who reads this book will be surprised that so much useful information could be collected into so small compass. We congratulate the author on the interesting manner in which he has handled much that is often overlooked in the more extensive works. The various systems are treated in regular order. There is some excellent advice on diet, stimulants, etc. At the end of the book will be found a very fine collection of prescriptions which will serve as a good guide in the ordering of composite mixtures. The book is attractively printed and bound. We have only words of praise for this book.

MISCELLANEOUS.

THE SIXTEENTH INTERNATIONAL MEDICAL CONGRESS.

The sixteenth International Medical Congress will be held in Budapest, the capital of Hungary, under the patronage of His Imperial and Apostolic Royal Majesty the King of Hungary (Emperor of Austria), from the 29th of August to the 4th of September, inclusive, 1909.

It will be the endeavor to establish a strong Canadian National Committee to represent Canadian medicine at this conference, and the Executive Committee of the Canadian Medical Association has re-appointed Dr. W. H. B. Aikins, of Toronto, to act as secretary of the Canadian National Committee, which appointment has been confirmed by the Executive Committee of the Congress at Budapest. Dr. McPhedran, who was chairman of the Canadian Committee for the International Congress held at Lisbon in 1906, will be associated in endeavoring to secure the formation of a strong and representative committee. Any member of the profession in Canada desiring information may communicate with either of the above named.

Matters of interest pertaining to the Congress will be published from time to time.

The members of the Congress will be (a) certified doctors who apply and have paid membership fees; (b) experts having paid membership fees with recommendations from the Canadian National Committee to the Executive Committee of the International Medical Congress, will be admitted as members. The membership fee is \$5.00.

The members will receive the first volume of the transactions of the Congress, and also a volume on the work of the department of their choice.

The Congress is divided into the following departments: Anatomy, embryology, histology; physiology; general and experimental pathology; microbiology (bacteriology), pathological anatomy; therapeutics (pharmacology, physical hygiene, balneology); internal medicines; chirurgy; obstetrics and gynæcology; ophthalmology; diseases of children; diseases of the nervous system; psychiatrics; dermatology and syphilography; urology; laryngology; otology; stomatology (dental and oral surgery); hygiene, and doctrine of immunity; juridical medicine; military and naval surgery; navigation medicines and tropical diseases.

The Congress will arrange two festival sessions, an inaugural and a closing one, at which none can take the platform except those summoned by the managing committee or certain representatives of the State after the announcements and customary speeches have been made. During the inaugural session, the managing committee will proclaim, in order of succession, the names of the honorary presidents, and in the closing session the congress-place.

The subjects of lectures or reports, and the lecturers to be selected by the departments and the programme of reports will be published at latest by the 31st December, 1908.

By the 31st January, 1909, reporters have to hand the manuscript of their reports into the office of the Congress; and the members of the representative departments receive them in print, sent to their abodes by the 31st July.

The corrections will be submitted to the care of the secretaryship. A legible hand is entreated. The term for the announcement of optional subjects is fixed for the 30th April, 1909.

Lectures announced after the above date will only be included in the order of the day, in one case only, viz., after those announced in due time have been negotiated and if time admits.

Two or more departments may hold general sessions, provided their programmes be published at latest by the 31st December, 1908.

Members are permitted to co-operate in the departments of others besides those of their own choice.

Only such of the discretionally announced lectures will be published whose authors have delivered them personally at the Congress, and the

copies of which the Executive Committee, in accordance with the decision of the presidency of the department, have determined.

The time allowed for the statement of reports must, in no case, exceed 20 minutes, for the other deliveries 15 minutes; for the discussions, for the former 10, for the latter 5 minutes. The answers of lecturers may be extended to 10 minutes.

The manuscripts of the speeches made on the occasion of both festival sessions are to be handed over to the Secretary-General on the day of the sitting, the manuscript of the lectures, and discussions delivered in the departments, are likewise to be handed to the managing secretary of the respective department on the day of the sitting, having reference to the lecture or the discussion.

The office of the Congress, in its international intercourse, will avail itself of the French, German and English languages. At the festival and general sittings the above named languages may be used; in the departmental sittings, however, other languages are available, provided one of the members present communicates, within the time fixed for the duration of the festival, the purport of the lecture or discussion in one of the above named languages.

The whole of the correspondence is to be directed to the office of the Congress. Office of the Sixteenth International Medical Congress, Budapest, VIII., Esterhazy-Utca 7.

On the envelopes of letters having reference to the scientific energies of the departments, the department must be written, to which the delivery or enquiry applies; letters of this description, the secretaryship at once has forwarded to the president of the respective department.

The term for forwarding applications with reference to the organization of the Congress expires on the 31st December, 1908.

The programme of social gatherings, of making known railway favors, of accommodation, and of excursions will be published by the 30th April, 1909.

THE ONTARIO MEDICAL ASSOCIATION.

The attention of the profession is again called to the 28th annual meeting of the Association, which will be convened in the Norman College Building, Victoria Avenue South, Hamilton, on the 26th of May next, and continue in session for the two succeeding days.

The provisional programme has been distributed throughout the Province. The prominence given to the scientific side of the meeting, and this will be of exceptional merit, will not be permitted to dwarf its social aspects. At the smoking concert at the Yacht Club, Hamilton Beach, on

Tuesday evening, there will be a most entertaining programme presented. On the succeeding Wednesday, at the Royal Hotel, the visiting members will be the guests of the medical men of Hamilton at dinner.

Outside members who are fond of golf are asked to take their clubs, as the privileges of the Hamilton Golf Club have been extended to all visitors through the courtesy of the President, Mr. J. J. Morrison, and of his committee. Members who are visiting the meeting are also extended the privileges of the Thistle Club by courtesy of the President, Mr. T. C. Haslett, and of the President of the Bowling Club, Dr. H. A. Wardell. Dows will be supplied.

A luncheon at the City Hospital has been arranged following the morning session on Tuesday. Other entertainment is under consideration and full announcement made in the final programme which will be issued in May. The Committee on Arrangements hope that visiting members will bring their wives and daughters, who will be happily cared for by the local ladies, and they trust that this may be one of the features of the meeting.

PRIZES OFFERED BY THE CONGRESS ON TUBERCULOSIS.

The Central Committee of the International Congress on Tuberculosis has announced the offer of the following prizes :

I. A prize of \$1,000 is offered for the best evidence of effective work in the prevention or relief of tuberculosis by any voluntary association since the last International Congress in 1905. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

Evidence is to include all forms of printed matter, educational leaflets, etc.; report showing increase of membership, organization, classes reached—such as labor unions, schools, churches, etc.; lectures given; influence in stimulating local Boards of Health, schools, dispensaries, hospitals for the care of tuberculosis; newspaper clippings of meetings held; methods of raising money; method of keeping accounts.

Each competitor must present a brief or report in printed form. No formal announcement of intention to compete is required.

II. A prize of \$1,000 is offered for the best exhibit of an existing sanatorium for the treatment of curable cases of tuberculosis among the working classes. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management, and results obtained. Each competitor must present a brief or report in printed form.

III. A prize of \$1,000 is offered for the best exhibit of a furnished house, for a family or group of families of the working class, designed in the interest of the crusade against tuberculosis. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award. This prize is designed to stimulate efforts towards securing a maximum of sunlight, ventilation, proper heating, and general sanitary arrangement for an inexpensive home. A model of house and furnishings is required. Each competitor must present a brief with drawings, specifications, estimates, etc., with an explanation of points of special excellence. Entry may be made under competitor's own name.

IV. A prize of \$1,000 is offered for the best exhibit of a dispensary or kindred institution for the treatment of the tuberculous poor. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management, and results obtained. Each competitor must present a brief or report in printed form.

V. A prize of \$1,000 is offered for the best exhibit of a hospital for the treatment of advanced pulmonary tuberculosis. In addition to the prize of \$1,000, two gold medals and three silver medals will be awarded. The prize and medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management and results obtained. Each competitor must present a brief or report in printed form.

VI. The Hodgkins Fund prize of \$1,500 is offered by the Smithsonian Institution for the best treatise that may be submitted on "The Relation of Atmospheric Air to Tuberculosis."

The detailed definition of this prize may be obtained from the Secretary-General of the International Congress or Secretary of the Smithsonian Institution, Chas. D. Walcott.

VII. Prizes for Educational Leaflets :

A prize of \$100 is offered for the best educational leaflet submitted in each of the seven classes defined below. In addition to the prize of \$100, a gold medal and two silver medals will be awarded in each class. Each prize and medal will be accompanied by a diploma or certificate of award.

Competitors must be entered under assumed names.

- A. For adults generally (not to exceed 1,000 words).
- B. For teachers (not to exceed 2,000 words).
- C. For mothers (not to exceed 1,000 words).
- D. For indoor workers (not to exceed 1,000 words).
- E. For dairy farmers (not to exceed 1,000 words).
- F. For school children in grammar school grades (not to exceed 500 words).

In classes A, B, C, D, E, and F, brevity of statement without sacrifice of clearness will be of weight in awarding. All leaflets entered must be printed in the form they are designed to take.

- G. Pictorial booklet for school children in primary grades and for the nursery.

Class G is designed to produce an artistic picture-book for children, extolling the value of fresh air, sunlight, cleanliness, etc., and showing contrasting conditions. "Slovenly Peter" has been suggested as a possible type. Entry may be made in the form of original designs without printing.

VIII. A gold medal and two silver medals are offered for the best exhibits sent in by any States of the United States, illustrating effective organization for the restriction of tuberculosis. Each medal will be accompanied by a diploma or certificate of award.

IX. A gold medal and two silver medals are offered for the best exhibits sent in by any State or country (the United States excluded), illustrating effective organization for the restriction of tuberculosis. Each medal will be accompanied by a diploma or certificate of award.

X. A gold medal and two silver medals are offered for each of the following exhibits; each medal will be accompanied by a diploma or certificate of award; wherever possible each competitor is required to file a brief or printed report:

- A. For the best contribution to the pathological exhibit.
- B. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any State of the United States. Brief required.
- C. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any State or country (the United States excluded). Brief required.
- D. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any municipality in the world. Brief required.
- E. For the society engaged in the crusade against tuberculosis having the largest membership in relation to population. Brief required.

- F. For the plans which have been proven best for raising money for the crusade against tuberculosis. Brief required.
- G. For the best exhibit of a passenger railway car in the interest of the crusade against tuberculosis. Brief required.
- H. For the best plans for employment for arrested cares of tuberculosis. Brief required.

XI. Prizes of two gold medals and three silver medals will be awarded for the best exhibit of a workshop or factory in the interest of the crusade against tuberculosis. These medals will be accompanied by diplomas or certificates of award.

The exhibit must show in detail construction, equipment, management, and results obtained. Each competitor must present a brief or report in printed form.

The following constitute the Committee on Prizes: Dr. Charles J. Hatfield, Philadelphia, Chairman; Dr. Thomas G. Ashton, Philadelphia, Secretary; Dr. Edward R. Baldwin, Saranac Lake; Dr. Sherman G. Bonney, Denver; Dr. John L. Dawson, Charleston, S.C.; Dr. H. B. Favill, Chicago; Dr. John B. Hawes, 2nd, Boston; Dr. H. D. Holton, Brattleboro; Dr. E. C. Levy, Richmond, Va.; Dr. Charles L. Minor, Ashville, N.C.; Dr. Estes Nichols, Augusta, Me.; Dr. M. J. Roseneau, Washington; Dr. J. Madison Taylor, Philadelphia; Dr. William S. Thayer, Baltimore, and Dr. Louis M. Warfield, St. Louis.

THE METRIC SYSTEM.

The progress of the metric system has been amazing. It is obligatory in every country of Europe, except England, Turkey, and Greece, which, however, permit and the two latter encourage it. In Russia the enforcement of it extends only to Finland and to certain uses in Russia proper, but the steps taken point to early and complete adoption. All South America and Mexico are also metric mostly by obligatory law and to a small extent by permissive enactments. The United States have made the system compulsory for the medical services of their army and navy, and private physicians in certain towns are voluntarily taking it up to the exclusion of the old measures.

Every year brings some new advance and the important question is not how far has this progress gone, but will it continue till England is left isolated with her own system. Some people plead that its difficulties are useful exercises for boys. To this the answer is that there are enough unavoidable difficulties without the addition of artificial ones, otherwise we might abolish roads as Mr. Balfour suggests, for the sake of the healthy exercise to be gained in jumping hedges. Every one can see how

far the world has gone and no one can mistake the end after reading the wonderful report presented in last October to the official representatives of the whole civilized world in Paris at the fourth of the great international conferences held there on the subject of weights and measures. The palace where it meets, near Sevres, is the only place in the world permanently guaranteed by all nations against the dangers of war, and it is devoted to the custody of the metric standard, copies of which are made there for the associated nations, England among the number. China was the only conspicuous absentee, but it is believed that she will soon join the others, for the Chinese Government has just directed an enquiry as to the best system of reform. She already has a decimal system, so it is practically certain that she will not follow England. Japan sent two delegates and Canada one, a remarkable assertion of her claim to be an "independent nation."

Among English colonies the Dominion of New Zealand has already passed a law empowering its officers to introduce the metric system in buying and selling, but before issuing orders desires England to do the same. Australia has expressed the same desire, but has taken no action. Unless the colonies act firmly they may have to wait as long as they did for the marriage of the deceased wife's sister, although there was only a small majority of 150 to 118 against the metric bill in March last.

The metric system has nothing to do with the distance between the earth's equator and the pole, for the metre is defined simply as the length of a certain international metallic standard kept at Paris. The original idea was to make it the ten-millionths part of that distance, and it is, so far as is known, almost exactly so.

A FEDERAL DEPARTMENT OF HEALTH.

The consolidation of the medical branches of the various departments of the Government into one central department under the direction of one Minister and administered directly by a Deputy Minister, was urged recently by a deputation of medical men who waited upon Sir Wilfrid Laurier and Hon. Sydney Fisher. The deputation represented the Public Health Committee of the Canadian Medical Association and medical men in the Commons and Senate.

Dr. E. P. Lachapelle, Secretary of the Provincial Board of Health, Quebec, with Dr. George Elliott, of Toronto; Dr. Powell and Dr. Carlton Jones, of Ottawa, addressed the Ministers on behalf of the association. Dr. Daniel, M.P., and Dr. Schaffner, M.P., backed up their request on behalf of the doctors in the Commons and Senate. It was urged that the Government could, with advantage, combine the medical branches of the Immigration, Marine, etc., Departments.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The following revision of the fee table (revised May, 1907), as ordered by the Council of the Faculty, is printed that every member throughout the State may note the changes introduced :

MEDICAL AND SURGICAL ATTENTION.

First visit in any case of sickness	\$2 to	\$20
Each subsequent visit	2 to	5
First consultation visit	5 to	100
Each subsequent consultation visit	5 to	100
Single visit and advice in special cases, where the physician is not the regular attendant	5 to	25
Distant visits, for every mile over two miles in addition to the usual charge, night visits double	1 to	5
Night visits, between 10 p.m. and 7 a.m.	5 to	10
Detention with patient all night	10 to	100
In case several patients in one family, charge the visit to one, and to the others each one-half the amount charged to the first.		
Advice at physician's office, night double	2 to	10
Advice anywhere except at office	2 to	10
Advice by telephone	2 to	10

SURGICAL OPERATIONS.

*Minor	5 to	100
Major	100 to	10,000
Obstetrical attention	20 to	1,000

MISCELLANEOUS.

Microscopical or chemical examination of blood, sputum, urine or other secretions	5 to	50
Administering anæsthetic	5 to	100
Gonorrhœa or syphilis, in advance	15 to	500
Written opinion as to health of patient	10 to	50
Oral opinion as to health of patient	5 to	25
Expert testimony or detention at court, per day	50 and up.	
Opinion involving a question of law	50 to	150
Examination for life insurance	5 to	10

* By the term minor surgery is meant those small operations or dressings which usually do not endanger life, require neither an assistant nor general anæsthetic.

Family physicians's certificate for life insurance	5 to	10
Certificate of cause of death for life insurance	10
Post-mortem examination for legal investigation	100 to	500
Post-mortem examination for the family	25 to	50

Maryland Medical and Surgical Journal, Dec., 1907.

PENSIONS FOR COUNTRY DOCTOR.

The Legislative Assembly of Lower Austria, has passed a bill allotting pensions to the amount of about \$300 annually, payable after thirty years' service, or before that time if the physician is permanently disabled while on duty, for country doctors, and also makes provision for the widows and children. The doctors receiving such pensions will have to perform certain duties gratuitously in recprocation thereof, such duties as vaccination of the poor and certain services in the poor houses and infirmaries. These pensions will be paid principally by the State, and partly by a decrease of three per cent. from the salary paid the State serving physicians. The government during the next five years intends to put aside about \$20,000 for this purpose and the law will go into effect in 1908, when fifty-two physicians with from thirty to thirty-five years of service to their credit will reap the benefit of the law. At the death of the physician receiving such pension, the full amount of the pension for the current year reverts to the family and after the current year for the rest of the years the family is to receive fifty per cent. of the amount.

MEDICAL PREPARATIONS, ETC.

BEDSIDE EXPERIENCE.

The best test, both pharmacological and ethical, for a medicine is bedside experience. For what avail is a laboratory product based upon a fine-spun theory in chemistry if it does not work out results in the laboratory of Nature, the human body? Or why wrangle over the "ethics" of a remedy which accomplishes results in healing disease? To heal one's patient is the best ethics. Send to Od Chem. Co., 61 Barrow Street, New York City, for "Laboratory Results Supported by Bedside Experience."

QUALITY IN MICROSCOPES.

The remarkable progress made in microscopes during the past few years is well shown in the Voigtlander instruments. No other microscopes so closely approximate the essential scientific requirements of quality and optical efficiency. The most accurate and satisfactory work is assured by the use of these high grade instruments, and physicians and laboratory workers who are using them are gratified in a ratio to correspond with the eminently pleasing character of the results secured. All the latest and most useful improvements are utilized, and the various stands represent the perfection of mechanical skill and workmanship.

Those who contemplate buying a microscope should not fail to investigate the various Voigtlander models before purchasing. Their general superiority will be immediately apparent, and, in daily use, their ease and accuracy of adjustment, together with their optical powers and clarity, will prove a constant source of congratulation.

The catalogues mentioned in the Voigtlander advertisement in this issue will be found instructive and interesting, and will be sent free to physicians on request by Voigtlander & Sohn, A. G., Optical Works, 225 Fifth Avenue, New York City.

POST HEMORRHAGIC ANEMIA.

The anemia which follows the hemorrhage of trauma, gastric or intestinal ulcers, severe epistaxis, child birth, profuse menstruation or hemorrhoids presents a clinical picture that is so well-known that it requires no description.

Examination of the blood immediately after a severe hemorrhage usually shows no apparent change in its number of corpuscles, for the portion lost withdrew the blood as a whole, and the portion remaining in the body, while decreased in volume, will be found to contain a normal ratio of the fluid and cells. Shortly after a hemorrhage, however, the tissues of the body give up large quantities of fluid to restore the necessary volume of the blood and a condition of true hydremia ensues. Examination of the blood three or four hours after a severe hemorrhage, therefore, shows a very marked oligocythemia. Reconstruction must now take place and the response to the bodily demand is sometimes remarkably prompt, but in most instances it is a hard up-hill fight. This is to be expected, for the disproportion between the cells and the fluid elements of the blood, and the essential depression of all vital functions, makes recuperation a difficult process at best.

Much can be done, however, to assist the body in its effort to restore normal conditions. The first and most essential requirement is absolute rest in a prone position. In some instances, it may be necessary for a few days to have the couch or bed tilted so that the patient's head shall be lower than the feet. Sudden movements or a sudden rising to an upright posture must be strictly interdicted as these are always liable to produce a fatal syncope. Following severe hemorrhage, the blood pressure is always lowered, and even if a certain degree of tension is apparently restored, it is very unstable, and may be lost instantly with all of the resulting dangers on the heart and central nervous system.

Another precaution to be taken is to frequently change the patient's posture from one side to the other. The hydremic state of the blood, and the loss of blood tension predisposes to gravitation œdema in the lungs and other organs, and the simple procedure of changing the patient's position often avoids annoying and serious complications.

Considerable quantities of water are always necessary after hemorrhage, but it should never be given in large amounts at any one time. Two or three tablespoonsful at a time by the mouth every few minutes is much more beneficial than to allow a patient to drink to satiation. Excessive thirst is always soon controlled by small enemas (one pint) of saline solution, as warm as can be borne, repeated every three or four hours. These also serve admirably to very materially raise arterial tension. It is no uncommon thing to observe complete anuria for even twenty-four hours after severe hemorrhages, but the warm saline enemas soon correct this condition.

Feeding is one of the most important details in post-hemorrhagic treatment. Liquid food should be used in preference to solids for obvious reasons, and may consist of milk, beef extracts, white of eggs, etc. Small quantities should be given at short intervals, as it must be remembered that the digestive function is always more or less depressed and can only do a portion of its usual work. A good reliable hematic is early necessary, one that can materially hasten hematosiis without endangering the digestive and assimilative functions in any way, shape, or fashion. Pepto-Mangan (Gude) is one of the most dependable remedies of this class and its hematopoietic properties are well-known. Under its use the cellular elements of the blood are rapidly increased, and the whole physical condition is greatly improved. The various organs resume their functions and the distressing and dangerous effects of hemorrhage are safely and properly overcome.
