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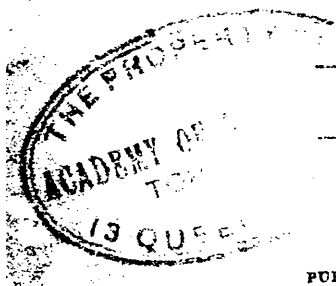
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# Kingston

# Medical Quarterly

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The KINGSTON MEDICAL QUARTERLY is presented to the Medical Profession with the compliments of the Editorial Staff. Contributions will be gladly received from members of the Profession and willingly published. JOHN HERALD, Editor.

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## THE MEDICAL PROTECTIVE ASSOCIATION.

AT the last meeting of the Dominion Medical Association the Committee appointed at the previous meeting to consider the matter reported in favor of establishing a Protective Association, and the report was adopted. Since that time circular letters have been sent out to the profession generally, asking the members for their co-operation. Under these circumstances it is not out of place to ask, what is the

object of this proposed Association? How is this object to be accomplished? Is it advisable for members of the profession to join the Association?

The object of the Association is very easily defined. It is simply to protect members of the profession from unjust prosecution for malpractice. This certainly is a laudable object and one that ought to meet with the approval of every member of the profession. We all know how trivial and unfounded have been some of the actions for malpractice brought against skilful practitioners. Anyone in general practice is liable to have such a charge laid against him. In such cases the party bringing the action is often financially worthless, and so whether the medical man wins or loses the case he is bound to lose financially. This is manifestly unfair. The object of the proposed Association is to come to the aid of any practitioner who is a member of the Association and who has had such an action entered against him. No one, we feel, can or will find fault with this proposal.

How is it proposed to carry out the object of the Association? First of all, funds are necessary. How are they to be raised? By levying an annual fee upon each member of the Association. This is fair. Every member of the Association would have a guarantee of assistance in case he had an unjust action brought against him. But what assurance will the members have that the Association will not be taken advantage of by unworthy members who will expect financial assistance to defend an action against them for just cause? The constitution of the proposed Association provides for such cases. No case is to be taken up by the Association until a committee appointed for that purpose has fully and carefully investigated the circumstances and reported to the Association that in the opinion of the members of the committee the practitioner accused of malpractice has used ordinary care and skill in the management of the case and that, therefore, he ought to be assisted by the Association in defending his reputation. Herein may arise the danger to the Association. Unless great care is exercised in selecting the committee of investigation the Association may be drawn into assisting a practitioner to defend an action which has

been justly laid against him. Members of these committees of investigation should not only be men of acknowledged high standing in the profession, but they should also be men of mature judgment, capable of sifting evidence and of giving an unbiased opinion. Any case that has been carefully inquired into by a committee such as we have indicated, and in which the committee reports that the practitioner has exercised ordinary care and skill, may be safely taken up by the Association and the action defended.

So far as we understand the objects of the Association and the proposed method of accomplishing these objects we have no hesitation in recommending any practitioner to join the Association. None of us can tell how soon it may be our ill fortune to be the defendant in a case of malpractice. In such a strait, it would be very comforting to feel that we had such an Association of our fellow practitioners pledged to stand by us financially in defending our reputation. We wish the proposed Association every success.

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#### PUBLIC HOSPITALS AND TUBERCULOUS PATIENTS.

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PROBABLY no question affecting the public health is receiving more attention both from the profession and the general public than is tuberculosis. We have an Anti-Tuberculosis Association with the Governor General at its head and members of the medical profession from all over the Dominion as members. We find doctors, clergymen and sanitarians in various sections of our country advocating the establishment of Sanatoria for the care of tuberculous patients. All seem to be agreed that tuberculosis is a contagious, a preventable and a curable disease. There seems to be a general consensus of opinion that the proper treatment for patients suffering from tuberculosis is isolation. With these views we perfectly agree. We are, however, of opinion that there is a danger of both the profession and the public running to extremes in this matter. Unfortunately such seems to be the tendency of the Medical profession. Not many years ago bleeding which had

been found advantageous in some cases was applied to all and every patient. No matter what his ailment might be he had to submit to a loss of blood. Later it was found that some patients instead of being benefited by this process were actually made worse and so bleeding came into disrepute. The profession ran to the other extreme and bleeding was utterly tabooed. Both extremes were wrong. Bleeding was undoubtedly injurious in some cases and it was just as surely beneficial in other cases. So too with regard to the use of cold water. Not many years ago a Medical man who would give a fever patient a drink of cold water would have been regarded as guilty of his patient's death if the case proved fatal. To-day no doctor thinks of refusing his fever patients cold water. In our opinion, as we have said, there is danger of running to extremes in the treatment of tuberculosis. It has been clearly demonstrated that this disease is due to a bacillus that is communicable from one patient to another, and that the germ which so communicates the disease is contained in the sputum and other discharges. So it has rightly been determined that a tuberculous patient should not be allowed to mingle promiscuously with others who are not as yet affected; that he should, as far as possible, be isolated; that every care should be taken to destroy the bacilli contained in the sputum and other discharges from a tuberculous patient. This is all good, right and proper. Some would, however, go further and exclude all tuberculous patients from our public hospitals. This, in our opinion, is carrying isolation to an unnecessary extreme. We believe that the hospitals of at least one city in the Province of Ontario has adopted the rule of refusing admission to patients suffering from tuberculosis. We have reason to fear that other institutions, while not absolutely refusing such patients admission, look upon their admission with disfavour and get rid of them as soon as they decently can. We believe that this is not right. We believe that there is no necessity for thus refusing tuberculosis patients admission to our public hospitals. We believe that such patients can be admitted to our hospitals and properly cared for without exposing the other patients to the danger of contagion. We admit patients suffering from typhoid fever, from erysipelas and in some institutions patients affected with

diphtheria, scarlet fever and measles are admitted without a question. In such cases, however, proper precautions are taken. The patients are isolated and everything about them properly disinfected. Now are we to admit that in these cases we can prevent the spread of the disease but that in the case of tuberculosis we are powerless? In the cases of tuberculosis the causal germ is well-known and the means of rendering it inert are equally well-known. Will the authorities of those hospitals who look with disfavor upon the admission of tuberculosis patients assert that they can prevent the spread of scarlet fever, the causal germ of which is unknown, but that they are powerless to prevent the spread of tuberculosis the causal germ of which is so well-known? If it is possible by isolation and proper disinfection to prevent the spread of scarlet fever (and no one denies that it is), is it not equally possible to prevent the spread of tuberculosis? We believe that it is. With properly isolated wards, preferably on the top storey, and with ordinary care in disinfecting the sputum and other discharges from tuberculous patients we see no reason why they should be excluded from our public hospitals. But some one may say granting that tuberculous patients may be properly cared for in our public hospitals would it not be better to have separate institutions for such patients? Perhaps it would. Would it not be better also to have separate institutions for the care of patients suffering from the other contagious diseases? Everyone will, we think, say yes. But look at the cost. A sanatorium for tuberculous patients must have a resident Medical Superintendent and other officials. Providing the municipalities assisted by the Government will establish these institutions in a large number of centres throughout the Dominion well and good. But until these sanatoria are established what are the poor consumptives to do if they are in the meanwhile refused admission to the already existing hospitals? Many of them are poor and cannot afford either to go away or to have a separate room at home. Are they then to be allowed to mingle with their neighbors and the other members of their families and thus spread the dread disease around? Surely not. The Government ought to compel the hospitals not only to admit such patients but also to provide properly isolated wards for them. This can readily be

accomplished by the Government refusing any financial assistance to any hospital that refuses to admit tuberculous patients and that has not proper accommodation for them. Were the Government to adopt this course we would hear no more of public hospitals refusing admission to tuberculous patients nor of the inability of these institutions to provide proper isolation for them. Were such a plan adopted by the Government we believe it would do more to limit the extension of this disease than has any other means adopted up to present time. Perhaps it would not be out of place for the Government to do more. Why not give an extra per diem allowance to those hospitals that provide properly isolated wards for tuberculous patients? Such an extra grant would stimulate all hospitals to provide the necessary accommodation for those afflicted with tuberculosis and would largely, if not entirely, relieve the Government from the greater expense of establishing sanatoria for the tuberculous. We will welcome such action on the part of the Government believing, as we do, that the object desired by all, the prevention of the spread of tuberculosis, can best be accomplished in this way.

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#### CHEMISTRY.

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**I**N the great provinces of human life, Science, Commerce, Politics and Religion, the men of Egypt have been the pioneers of progress. Egypt was the first and for many centuries the greatest of civilized nations. Even while Abraham was a childless wanderer in Syria the Egyptians were a cultivated people—writing prose and poetry, philosophy and theology, well versed in the arts and sciences; “to be learned in all the wisdom of the Egyptians,” was a proverb for the cultivation of science. It is to this people that we naturally turn for the early records of any science and it is while holding as it were a post mortem upon these old cities, dead 4000 years and more that we trace upon the walls of her obelisks, her temples and her tombs, the first faint outlines of chemistry,—the sacred art of the ancient Chemi.



We have abundant evidence that these people possessed a considerable knowledge of metals and their alloys, of the art of glass blowing and of pottery, they prepared fermented wines and beer, and were the first to employ chemical preparations for medicinal purposes. Their knowledge was purely empirical and in most cases accidentally acquired. No serious thought had been given to the composition of chemical substances, or to the nature and cause of chemical phenomena. They confined their study to the preparation and use of chemicals as a means of satisfying daily wants or adding to the comforts of everyday life. As a result of social and commercial intercourse the knowledge of chemistry gradually spread eastward among the Phœnicians and the Jews, thence westward to the Greeks and the Romans. To the Greeks we are indebted for the earliest theories regarding the ultimate constituents of the material world. They were perhaps no more inclined than were their predecessors to engage in the labor of chemical experiment and investigation, but the old Greek philosophers dearly loved to speculate.

Empedocles described four elements, Earth, Air, Fire and Water as the basis of the material world. Aristotle disputed this theory. He assumed one original matter possessed of the chief properties of the four elements, viz. : moist, dry, cold, warm, each element combined two of these properties, earth, dry and cold ; water, cold and moist ; air, moist and warm ; fire warm and dry. The difference in material things he ascribed to a difference in the properties inherent in matter, in other words one substance may be transformed into another ; example—by a simple process water is changed into air. As a natural sequence of this doctrine it was inferred that the baser metals might be turned into gold, and organs wasted by disease and age be restored to the vigor of health and youth. Thus was laid the foundation of the weird and mystic science of Alchemy, a science which dominated the study of chemistry from the beginning of the Christian era to the end of the 16th century. In every age men have been eager, to find some royal road to wealth and to avert disease and death, hence we are not surprised that all classes from the monk in his cloistered cell to the prince in the

royal palace for more than fifteen centuries devoted their energies and in many cases their lives to the delusive search for the philosopher's stone, that mythical jewel "the elixir of life" and the transformer of base metals into gold. It is needless to say that the ambitions of the alchemist were never realized. Throughout the Alchemistic period we find no tendency towards the scientific study of chemistry. We do find however, that by their strenuous efforts to solve the problem of transmutation, empirical knowledge was greatly increased; new processes were employed and valuable experiences recorded. To Geber, an Arabian chemist and writer of the 8th century, we are indebted for the first clear and concise account of chemical progress, prior to, and during the alchemistic period,—older writings there are none. He described the processes of filtration, crystallization, sublimation, cupellation, etc., and although an ardent believer in alchemy, he rendered valuable service in the realm of applied chemistry.

During the latter half of the 16th century alchemy declined and chemistry began to develop along other lines. By advocating chemical preparations for medicinal use Basil Valentine established a new epoch, the medico-chemical era. He was well supported by Paracelsus who taught that the object of chemistry is not to make gold but to prepare medicine. He regarded chemistry as the basis of the whole medical art. This doctrine of Paracelsus, that the province of chemistry was the adaptation of chemical substances to the cure of diseases, prevailed for the greater part of a century and resulted in the addition of a vast number of new preparations and a more careful examination of their composition and properties. It also introduced the study of physiological chemistry by the investigation of milk, blood, urine, saliva and other products of the animal body.

The middle of the 17th century marks the close of the medico-chemical era, and opens up a new epoch, a transition period from the dark ages of juggling, chicanery, alchemy and mysticism to an age of purely scientific investigation and healthy development. To Robert Boyle we are indebted for the first true conception of the aim of chemistry. He it was who first taught that the chief object should be to acquire a

knowledge of the composition and properties of chemical substances for the sake of arriving at the truth irrespective of the practical results. The history of chemistry as a science is regarded by many as beginning with Boyle. No one before his time grasped the main problem of chemistry so clearly as he. After the death of Boyle the phenomena of combustion became the *burning* question of the day, and engaged the attention of the most eminent scientists of the 18th century, prominent among these were Becher and Stahl, who revived the old Greek idea of a fire-material and explained combustion as a decomposition; to be capable of burning the substance must contain fire-material, which Becher called Terra Pinguis and Stahl, Phlogiston, as the substance burns the fire-material escapes. For more than one hundred years this theory of combustion, false and untenable as it now seems, was almost universally accepted as a workable basis for experiments and for chemical research. It was during the so-called Phlogiston era that Black, Cavendish, Priestley, Scheele and others contributed such a wealth of observations, experiments and new materials that Lavoisier was able during the closing years of the century to found a new era, the so-called modern period of chemistry which has continued down to the present time. Priestley, Scheele, Cavendish, Bergman and others were successful experimenters and discovered many important facts but they could not grasp the significance of their work or estimate its value. It was left to Lavoisier to interpret the meaning of their experiments, correlate the results and enunciate the great principles involved. By a judicious use of the facts and principles thus handed down to him Lavoisier succeeded in exposing the fallacy of the Phlogiston theory and finally replaced it by his own theory of oxidation, in which he explained clearly the part played by oxygen in the phenomena of combustion, calcination and respiration. He demonstrated the laws of combination, in constant proportion and the great principle of the indestructibility of matter.

The impetus given to scientific study by Lavoisier led on to the development of the "Atomic Theory," a principle so broad in its conception that it includes all previous and subsequent theories. It confirmed and generalized "Dalton's Law of Multiple Proportions." It rendered intelligible the profound

researches of Berthelott on affinity as a chemical force. It brought within range of probability the laws of Guy Lussac pertaining to the volume of gases. It enabled Berzelius to develop and apply the Dualistic system of Lavoisier and aided him in his determination of the Atomic weights. By it Dumas was able the more readily to interpret the action of chlorine on organic bodies and thus to deduce his celebrated theory of substitution, not only of one element for another but also of compound radicals for simple elements. From these theories of substitution and of radicals was evolved the theory of types, so simple in form and fertile in resource, embracing, as it did, the whole range of both mineral and organic chemistry and removing forever the barriers which had separated them. From what has been said it is easy to infer that the Atomic Theory embraces the science of chemistry in all its departments and that without it other chemical theories would cease to exist. Established, as we have seen, upon a purely scientific basis chemistry has, during the century just closed, grown and expanded until it is to-day the recognized ally of every other science and an essential factor of nearly every industrial art.

To trace the relation of chemistry to nature, to other sciences and to the arts would far exceed the limits of this paper. I would like, however, before leaving the subject to say a few words on the relation of chemistry to medicine. That we may the better appreciate this relation let us ask the physiologist to what science he is indebted for his knowledge of the proximate principles of life; of the secretions and excretions; of assimilation and metabolism; of the comparative value of foods and of their digestion. Ask the pathologist how he studies the deviations from health in the organs and tissues, in the secretions and excretions of the body. Turn to the bacteriologist and ask him how he determines the presence of bacteria in a specimen and how he differentiates the various species or more important still how he investigates the toxins produced by them. Turn to the surgeon and ask him to what science surgery owes its proud position. Ask the pharmacologist how he studies his drugs, their properties and preparations; let him take his materia medica and strike out all the products of the chemical laboratory and the drugs prepared

and purified by chemical processes. Each of these men will tell you his department is indebted to chemistry for what he has accomplished in the past and that in it lies his hope for the future. And now about the future. Medical science by her own efforts and by the contributions of sister sciences has been wonderfully developed and enriched, within the past century, and especially during the last decade. One might well ask has not the limit been reached, and if not, in what direction may we look for further development. We believe the possibilities of the future are unlimited, the foundations are now laid for results far greater than those in the century past, the lines of advance are already extending. Van Helmont more than a century ago made the remarkable assertion that "life is a process of fermentation," and to-day medical science and its allies are earnestly studying the phenomena of life from this standpoint. Eminent authorities tell us that the prevention, the diagnosis and the treatment of disease will in the future be based upon investigation of the nature and action of enzymes and their products. The subject is not new. The study of fermentation began far back in the remote ages of antiquity, the term being first used in connection with alcoholic fermentation and for many ages the fermentation of alcohol, putrefaction and the leavening of bread were the only fermentation processes known. More recently we have learned that the ferment unit, termed an enzyme, is inseparably associated with every living organism and that it initiates every change, physiological or pathological, that takes place in the processes of life. The searchlight of physical chemistry recently turned upon this subject has revealed for our investigation heights and depths and lengths and breadths, of which, it never entered into the mind of the scientist to conceive. As a result the physiologist is to-day busy revising his knowledge of the phenomena of life in its relations to these enzymes. The pathological processes are being traced back to the original cell whence function begins to deviate from the normal, through the action of enzymes or their products. The bacteriologist no longer wastes his energies in identifying and classifying microbes but with the aid of pathology and pharmacology he is endeavoring to find out the nature and action of the ferments and toxins they produce. Physical

chemistry has assumed the task of solving the biological questions involved. Pharmacology which formerly confined its attentions to drugs, alkaloids and mineral poisons is with the help of physiology and bacteriology busy propogating organo-therapy, serum-therapy, etc. And now that medical science and her allies are concentrating their energies along this line may we not reasonably hope that the formidable array of infectious diseases and the many no less fatal non-infectious forms which have so long defied medical science, may soon be made amenable to treatment. In conclusion I would call attention to the fact that the progress of medical science is becoming more and more dependent upon physiology, pathology, bacteriology and pharmacology, sciences which although developed along independent lines are now rapidly converging and tending to unification as sub-divisions of the ever-widening and all-embracing science of chemistry.

I. WOOD.

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#### CLINICAL CASES IN HOTEL DIEU HOSPITAL.

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**A** case of Empyema:—J. W., Age 18, Read, was admitted on September 17th, 1901. His family history is good, no member thereof exhibiting any hereditary tendency. His previous health was most excellent. He never had any serious illness except those incidental to childhood. On March 26th, 1900, he was taken ill with what was pronounced pneumonia. He was confined to bed till July 13th, 1900. He gained very slowly after this date, was able to be about though not feeling up to his usual condition of health. He was pale, had a poor appetite and repeated chills. On the 10th of April, 1901, he was again compelled to go to bed. Shortly afterwards a tumor made its appearance about the centre of the sternum which slowly enlarged and broke on 4th July, 1901, discharging a large quantity of pus. This discharge continued until he was admitted to the hospital. The patient appeared pale and anæmic when brought to the hospital. The heart was pressed over to the right side, the sounds at the base being one inch to the right of the sternum between the fourth and fifth rib. The

apex sound was half an inch above the ziphoid appendix and to the right of the median line. Between the third and fourth rib, a little to the left of the sternum was an opening from which pus was discharging. The left lung was about completely solidified. On September 27th, 1901, a portion of the 6th rib on left side was excised and an opening made in the pleura from which a large quantity of pus was discharged. Free drainage was inserted and the patient improved rapidly. He gained over fourteen pounds in weight, the heart regained its normal position, and the lung slowly expanded. The points of interest about the case are, first, the long period in which pus was contained in the pleural cavity, as there is no doubt in my mind but that the case was one of empyema from the outset, and secondly, the opening near the sternum through which the pus was discharging. Though many cases of empyema have come under my notice in private practice and in the hospital, I had not previously met with this condition.

#### SPINDLE CELLED SARCOMA WITH CYSTIC DEGENERATION.

Mr. I. C., aged 44, Kingston, consulted me on Dec. 22nd, 1900. His personal and family history were excellent. He had noticed a small lump near the angle of the left jaw which, moveable for a short time, now appeared to be attached to the bone. It was about the size of a marble. This I removed and he left on the following day. No microscopical examination was made. He returned again on the 24th of May, 1901, the growth having re-appeared, being now quite large—indurated and with no well defined margin. I made a large incision tying the facial artery and removing apparently every vestige of the tumor. On September 14th, 1901, he once more came to the hospital. The growth was now widely diffused covering the left parotid and the left cervical region to the median line. There was also quite a large tumor in the right cervical region beneath the right submaxillary gland. Immediately beneath the right angle of the inferior maxilla was a large tumorlike projection. It was quite soft on the summit and had all the appearance of containing pus. On October 10th he once more submitted to operation. Upon incising the projecting tumor a quantity of pale straw-coloured fluid issued. The walls did not collapse and were

found to consist of fibrous tissue on the outside, cartilaginous in the centre, and a mucous lining. The wall was fully one-quarter of an inch in thickness. The parotid and cervical regions were well cleaned out. The subsequent history was unsatisfactory. The patient lost the use of the inferior maxilla. The growth returned and he died on December 15th from hemorrhage and exhaustion. Specimens of the growth were submitted to Dr. Connell who pronounced it "spindle celled sarcoma with cystic degeneration." There were no signs of glandular infection during the progress of the case. The edges of the growth blended so insidiously with the surrounding tissue that it was impossible to draw any line of demarcation. Twice was the incision made far wide of the apparent termination of the growth. The importance of early microscopic examination seems imperative if anything is to be gained by surgical interference in this affection. I cite this case mainly to emphasize this fact. The degenerative character of this tumor was also interesting. In the cyst wall were the various degenerative processes fibroid, chondral and mucoid.

#### A CASE OF UTERINE AND VAGINAL DUPLEX.

Miss S— was admitted by Dr. Duff on September 28th, 1901, suffering from profuse and obstinate menorrhagia. Upon examination a double vagina was found to exist. Curettment was decided upon when two ossa uteri were found leading into two distinct uterine cavities. Each cervix was dilated and sounds passed into each at the same time. The sounds did not come into contact in the uterine cavity. Upon the same examination the ovaries were found to be enlarged and cystic. These were removed by Dr. Morrison at a subsequent operation. There was no further menorrhagia and the recovery was uneventful.

E. RYAN.

Mercuriol in the treatment of syphilis—Dr. Winfield Ayers, in the *Lancet*, London, Eng., Oct. 19th, 1901, has an article on the use of Mercuriol in the treatment of syphilis a perusal of which we recommend to our readers. He gives a resume of its effects in 180 cases. Judging from his statements the drug is a valuable curative agent in this disease.



## THE USE OF BONE CHIPS IN OSSEOUS CAVITIES.

A common method of treatment of cavities in bone, especially those resulting from necrosis, is, after removing the sequestrum and scraping away the diseased tissue down to healthy bone, to pack the cavity with iodoform gauze. In time granulation tissue gradually fills up the defect in the bone, requiring, therefore, less and less of the gauze until, ultimately, the cavity is entirely filled with new tissue. The great defect in this method is the length of time it takes to bring about a successful result, while occasionally the production of granulation tissue stops short of completely filling the cavity, especially if the latter has been of considerable size. To hasten the process, then, a number of different methods have been employed in place of the gauze packing. Thus, Neuber proposed, after chiselling away the involucrum, to cover the floor and sides of the cavity with flaps of skin raised from the adjoining surfaces of the bone retaining them there with aseptic nails. Blood clot, gutta percha, formalin gelatin, have been tried, the object being to fill the cavity thus making a frame-work or support for the new granulations. Martin speaks highly of the method of Barth, viz., the use of calcined bone, claiming that it supplies lime salts for the bone forming tissues. Senn employs decalcified bone chips and as this is the substance we have used for the last five years we will speak more particularly of it.

The chips are prepared as follows: Take the shaft of a recently killed ox, saw it in portions two inches in length, remove the marrow and place the fragments of bone in a 15% sol HCL. Change the solution every twenty-four hours. In from 2 to 4 weeks the bone will be decalcified. Wash in distilled water, place the pieces of decalcified bone in a dilute solution of potash to neutralize the acid and then immerse for twenty-four hours in distilled water. The pieces of bone are now cut into strips  $\frac{3}{4}$  of an inch wide and kept in an alcoholic solution of Hyd. bichlor (1:500). The following are some of the cases in which the bone chips were utilized:—

1. K. B., age 12, was seen July 1896 with a history of disease of the humerus of several years duration. A number of operations had been performed in which iodoform gauze had been employed but a sinus remained after each one. On operation I stripped back the periosteum, enlarged the cloacae, thoroughly scraped the diseased tissues, packed the cavity with bone chips, and, sprinkling a mixture of boracic acid and iodoform among the layers of the chips and sutured the periosteum over the chips, leaving a few strands of catgut as a subperiosteal drain. In four weeks she left the hospital cured and when seen in May last there had been no trouble with the arm since the operation.

2. Geo. R., age 15, presented a history of a severe inflammation of the humerus, beginning some months previously. On chiselling the bone as above, a sequestrum of about five inches in length was removed in three portions and the cavity filled with chips. Recovery was uneventful and he left the institution in about five weeks.

3. Addie M., age 18, gave a history of severe boring pain in upper part of right tibia. The bone was slightly enlarged in this situation and a diagnosis of tubercular abscess was made, the walls of which on operation were thoroughly curretted and the cavity filled as above a speedy recovery ensuing.

4. W. S., age 12; necrosis of femur: Bone chips were employed with results equally as good as above.

The chips are more serviceable in necrosis than in caries, since, in the latter the tubercular process generally spreads for some distance into the surrounding bone and hence the asepsis of the bone chips can not be maintained, as a rule; besides it is advisable to have a periosteal covering to the packing as otherwise an insufficient supply of blood is the result, and in caries this periosteal covering is as a rule unobtainable, though in one case—caries of the femur—I used the chips with a good result in six weeks time, whereas, in another patient with the same trouble and in as good a state of general health apparently as the former, the defect was not filled until after three month's treatment with the gauze.

D. E. MUNDELL.

## GUN SHOT WOUND OF LEFT SHOULDER—REMOVAL OF THE WHOLE UPPER EXTREMITY.

**B**ENNIE S., age 10, on the 17th of September last was accidentally shot by his brother, a lad about two years his senior. The latter was carrying an old Snider rifle loaded with a shot cartridge, and at a distance of from twenty to thirty feet from the patient pointed the weapon at him saying, "If you come any farther I'll shoot you." In his excitement, and needless to say, to his subsequent great grief his fingers pressed the trigger, and the little victim received the full charge of shot fair on the head of the left humerus shattering it into minute portions, and tearing through the acromion process and soft tissues posteriorly. About sixty pellets of the duck shot with which the cartridge was loaded, passed downwards and inwards along the anterior surface of the scapula and lodged just above the inferior angle. The force of the blow was such as to knock the little lad off his feet and his head struck the ground causing a severe scalp wound over the occiput. The arm was nearly severed from the body but so great was the laceration of the axillary and other vessels the hemorrhage appears not to have been excessive. The patient's father ascribes the arrest of the hemorrhage to the fact that there was an old man at the house who had a "charm" for stopping bleeding, and that he made immediate use of the said charm.

A doctor was procured who came a distance of twenty-two miles and remained at the house for two days, relieved his suffering and applied dressings of carbolic oil to the wound. The arm speedily became gangrenous and the little sufferer was evidently not expected to survive. However, on the 4th of October or "seventeen days" after the receipt of the injury he was started on his long journey to the Kingston general hospital. Leaving his home at six in the morning lying upon a mattress in a spring waggon he reached Calabogie station on the K. & P. railroad at noon and arrived at the hospital about 5 p.m. I saw the patient shortly afterwards and got the history as has been briefly related from the father. The sight

which the gangrenous wound and arm presented was rather appalling and the odour was simply frightful. The accompanying cut taken from a photograph which Dr. Garrett very kindly took for me a few minutes before the operation was performed, conveys a very fair impression of the condition of the parts. A sloughing wound extended inwards to the nipple line and



upwards, crossing the clavicle and continuing over the spine of the scapula to the posterior boundary of the axilla. The arm was attached to the body posteriorly only by two or three shreds of skin, and the comminuted fragments of the humeral head were freely exposed in the open wound. After the fatigue of his long and painful journey it was thought advisable to let the patient rest as well as possible during the night and defer operation until the morning. His pulse was

fairly good although rapid, and he exhibited great courage and patience during the examination: Temp.  $101\frac{3}{8}$ , pulse 120, Resp. 32. A little stimulant and  $\frac{1}{8}$ th grain morphia hypodermically aided in securing a very fair night's rest, and in the early morning the bowels were emptied by enema and the patient brought to the operating theatre at nine o'clock, Temp.



$99\frac{3}{8}\%$  F., pulse 110, Resp. 28. Chloroform was administered and by a few snips of the scissors the arm was detached and then quickly removed from the room. Clearing away the bony debris the glenoid fossa was reached and a fistulous tract discharging pus was seen leading down the anterior surface of the scapula. The nature of the radical operation necessary to save the child's life was explained to the father and his consent obtained. I then proceeded as rapidly as possible to remove

the clavicle (except the inner fourth), and the scapula—not on the lines as laid down by Paul Berger for as may readily be seen it was impossible to obtain in this instance the proper flaps as described in his method. An incision was first made directly upon the clavicle extending from the inner extremity of that bone outwards to the wound. The clavicle being exposed and cleared an aneurysm needle was passed beneath the bone and with its aid a Gigli saw drawn through and the clavicle rapidly divided close to its inner end. The wire was then slipped along the clavicle for an inch and a half and the bone again sawn at this point and the portion of bone removed. This gave access to the subclavian vessels which were then ligated. An incision was then made over the dorsum of the scapula as close as possible to the edge of the wound so as to utilize every particle of sound tissue in the formation of the flaps. The scapula was rapidly dissected out, all bleeding points being secured by pressure forceps, and a mass of shot removed from about the situation of the inferior angle. Several of the shot were imbedded in the intercostal muscles, and time was taken to dissect these out. The wound surface was then freely curetted of all gangrenous portions of tissue, flushed with one in twenty carbolic lotion and the flaps sutured. Two openings were left posteriorly for drainage and the usual dressing applied. My thanks are due to Dr. Campbell for able assistance and to Dr. Haig and the hospital staff for the careful administration of the anæsthetic and the necessary stimulation of the little patient throughout the severe operation. After being removed from the table his pulse rate was 168. Nutrient and saline enemata were given at regular intervals as well as hypodermics of strychnine and digitalis. The record shows the following condition:—4 p.m.: Temp.  $97\frac{1}{4}$ , pulse 156; 8 p.m., pulse 138. Oct. 6th: 6:30 a.m., Temp.  $98\frac{3}{8}$ , pulse 136, Resp. 28; 4 p.m., Temp. 100, pulse 130, Resp. 28. Oct. 7th: Temp.  $98\frac{3}{8}$ , pulse 128. Oct. 8th: Temp.  $98\frac{3}{8}$ , pulse 116. Oct. 9th: Temp.  $98\frac{3}{8}$ , pulse 104.

After two days he asked for and was given solid food and was very cheerful, stating that he was free from pain. The dressings were changed daily, and on the 20th October the wound was completely healed, and the patient out of bed. The

cut shows the condition of the parts at this time, but the photograph was not taken until three weeks from the date of operation. He has perfect control over all the movements of head and neck. Our readers may be interested to know that having but one parent living, the little fellow has been admitted into that excellent institution the Orphans' Home in this city, and is making rapid progress in his schooling. One or two incidents in connection with this case we may be pardoned for mentioning. The worthy and beloved principal of Queen's University was at the time a patient in the hospital, and learning of the boy's sad loss sent to him a kind message of love and sympathy accompanied by a gift of gold. Bennie was grateful as well as delighted and a day or two afterwards announced his intention of buying two calves with the money so graciously given, and that one of them was to be for his brother. Bennie was a very interesting patient always quick and bright with his answers as the following incident will shew. Dr. Manby, physician to the Duke and Duchess of York, visited the hospital on October 15th, and when saying good-bye to the little fellow Bennie, asked, "Will you come and see me again soon, sir?" "I'm afraid not, my little man. Do you know how far I have travelled already to see you?" "No sir!" "Well, I have come nearly 40,000 miles." Quickly came the unexpected reply, "Well, I came nearly a hundred miles myself to get here."

W. G. ANGLIN.

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We have the assurance of Parke, Davis & Co., that not one of the recent tetanus fatalities following vaccination at Camden, Atlantic City, Bristol, Cleveland, Three Rivers and St. John, succeeded the employment of their vaccine. In not a single solitary one of these cases was their vaccine used. We willingly (in justice to Parke, Davis & Co.), give publicity to this statement. We would only add that from what we know of the reliability of the preparations of this firm we would never have suspected their vaccine.

## A CASE OF ACTINOMYCOSIS OF THE LIVER.

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**I**N the article on actinomycosis in Alibutt's "System of Medicine," the following statement is made:—"The clinical course of actinomycosis is generally chronic but in exceptional cases there is rapid dissemination owing to the fungus having found entrance into the vascular system. Sometimes it pursues the course of an acute infectious disease, or even pyaemia, but such acute cases are rare and any considerable pyrexia, suppuration or septic infection is as a rule caused by accidentally associated pyogenic organisms.

But the manifestations of the disease may be as protean as the organs which the disease attacks are various. When one viscus alone is affected there is often no guide to the real nature of the disease. It is for this reason that so many of the cases recorded have only been recognized after death; during life they have been regarded as abscesses, empyema, appendicitis, vertebral caries, tuberculosis, sarcoma, etc. In a large proportion of cases no certain diagnosis can be made without the detection of the fungus in the discharges."

The following brief history of a recent case is given as illustrative of the above.

The first indication in the case of the patient, a young married lady who had previously borne two children, was in the latter part of April, 1901, when she was awakened in the early morning by pain of a lancinating character in the right lumbar region. At the time she was visiting in the country at some distance from the city. Mustard and hot fomentations were used and as chills and fever were complained of quinine was given for about ten days.

Then a doctor was called in attendance and a diagnosis was given of possible appendicitis and extra-peritoneal abscess. I saw the case in consultation shortly afterwards and found considerable tenderness over the right lobe of liver with pain on



deep pressure. The right kidney could be palpated and was evidently displaced forwards and an indistinct sense of fluctuation was communicated to the hand in the loin on bimanual examination. At this time, nor at any other period of the illness was there any jaundice. Chills with fever and copious night sweats were marked features, and pointed to suppuration in some quarter.

Shortly after this the patient came to the city and remained under observation. The edge of the right lobe of the liver could be distinctly felt below the costal margin, and beneath this a round mass which was diagnosed to be the displaced kidney. After consultation it was decided to make a posterior incision just below the last rib. This was done and after breaking down numerous adhesions the kidney was reached but no pus was found. The patient expressed herself as being much relieved by the operation, the pain and difficulty of breathing being overcome. The wound was kept open by gauze drainage for a time but finally closed.

The patient left the city, and late in August I was called to see her again. Chills and fever were prominent symptoms, and on examination the lower margin of right lobe of liver was found projecting well beyond the costal margin to within  $1\frac{1}{2}$  inches of the umbilicus. Marked tenderness on pressure over the right lobe. There was decided flexion of the thigh upon the abdomen with marked lordosis in attempting to straighten the limb. Moreover two small sinuses had appeared in the lumbar wound discharging a small quantity of pus. Removal to the hospital was advised, and that the lumbar wound be freely opened. On the night after the patient arrived at the hospital after a drive of fifteen miles in a buggy over roads that were somewhat rough, there was a sudden very free discharge of exceedingly foul smelling pus with a decidedly fecal odor from the lumbar wound. This occurred at 3 a.m. and the dressings were changed frequently during the day as the discharge was profuse. The following day the patient was anaesthetized and the wound enlarged and free drainage provided for. The general symptoms improved, and the thigh flexion was almost overcome. The patient was at all times very bright and cheerful, and hopeful as to the favorable result. The discharge

from the lumbar wound continued at times scanty, and again profuse and frequently grape seeds and small particles of fecal matter were mixed in the discharge shewing that there was some communication between the bowel lumen and the abscess sac, but although careful watch was kept there was never any pus found in the rectal discharges.

Later permission was requested to operate further by removing a portion of one or two ribs posteriorly and reaching the under surface of the right lobe of the liver as in this way it was hoped to secure more direct drainage of the abscess sac which was diagnosed to be in that situation. An anterior incision through the abdominal wall was not considered to be feasible, and as the autopsy shewed, would have been of no avail. However, any further operative interference was positively declined by the patient who in her inimitable cheery way would reply, "Just give me time and I'll be all right."

Towards the end there was considerable œdema of the lower extremities and ascites with prominent abdomen from tympanitic distension. A short time before death a small fluctuating mass appeared in the right nipple line just below the costal margin, and under cocaine anaesthesia was opened. A few ounces of pus were evacuated and the finger came upon the upper surface of the liver and impinged on a circumscribed abscess sac.

Death occurred early in January and permission was obtained for a partial autopsy.

The following account of the partial autopsy made two hours after death in this case has been supplied by Dr. W. T. Connell :—

Body quite warm ; no *rigor mortis*, marked œdema of the lower extremities extending upwards to the trunk. Upper extremities and head and neck much emaciated. Abdomen quite prominent, *linea albicantes* present.

A small sinus one inch in width discharging foul smelling pus is seen in right nipple line one inch below the costal margin. In the right lumbar region at site of the ordinary "nephritic" incision is a large discharging wound.

Partial examination of abdomen only made. On section the abdominal fat was very scanty and yellow. About two quarts of clear serous fluid in peritoneal cavity—ascitic. Scattered in the wall of the large bowel are a few pea sized nodules resembling tubercle. The liver is displaced downwards and the dividing line between right and left lobes comes in the mid-line of abdomen. The lower edge of the liver reaches to within one inch of the umbilicus but rapidly falls behind the right costal margin. Quite firm old adhesions bind together the transverse colon, the duodenum and the under surface of the liver. The convex surface of the liver for two inches under the costal margin is firmly adherent to the diaphragm; behind this there are occasional bands of adhesions. The veins of the round ligament are markedly dilated.

On breaking through the adhesions between the colon and under surface of right lobe of liver, the right wall of the gall bladder is seen merged in a firm walled, very tough abscess sac. Into this abscess sac the hepatic flexure of the colon is tightly bound and in fact there is a free communication between the bowel lumen at this point and the sac. The appendix vermiformis is very long passing back behind the ascending colon and is adherent to the abscess sac, but no communication can be demonstrated between the two, and the appendix presents no evidence of disease.

The right kidney is pushed forward and is shelled out with difficulty from its bed, but is readily stripped of its capsule. Its structure is markedly pale—not waxy but fatty. The spleen is very large, about twenty ounces, quite dark and cuts very firm; no gross lesions.

The limits of the sac under the right lobe of the liver can now be defined. Behind, it reaches to the suspensory ligament; on the left, to the gall bladder and cystic duct; in front, to the adhesions between it and the transverse colon; on the right, to the right edge of the liver. It communicates over the top of the right kidney with the sinus in the lumbar region whose course is directed upwards and inward and slightly forward. The wall of the gall bladder on the right, behind, and at the neck are all included in the sac though the bladder lining is intact and the bile natural. The cystic duct is patent.

Scattered through the liver substance are eight or ten pea to walnut sized quite firm walled purulent masses, and one large mass in the right lobe measuring about  $3\frac{1}{2}$  inches in line of right nipple and  $2\frac{1}{2}$  inches transversely. This mass was continuous through the liver substance with the sac behind the liver, and also communicated with the sinus in the line of right nipple.

While the general appearance reminded one of tuberculosis, there were some very marked departures from such type, and as is well-known tuberculosis in this form is very rarely seen in adult human beings.

Permission for examination of other organs was not forthcoming, but some small pieces of liver were taken for further examination. The result of this latter examination is as follows:— The pus from nodules shews leucocytes, fat granules, and broken down liver cells, with staphylococci and ray like clumps of fungus corresponding to streptothrix actinomycosis. Further search confirms this, so that the case is one of actinomycosis of the liver.

W. G. ANGLIN.

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We are in receipt of the introductory page of a work entitled "Code of Medical Ethics," by James E. Spargue, M.D., C.M., of Stirling, Ontario. As we have not been honored by a copy of the work we are unable to speak of its merits or demerits. The work is that of a medical gentleman who has been for more than thirty years actively engaged in medical practice as well as a voluminous writer for medical journals. It should be not only interesting but instructive reading.

## REPORT OF MEDICAL CASES.

CASE I. R. K., age 24; occupation laborer. This patient was admitted to my ward in the Kingston General Hospital in April last with the following history: Sometime in December 1900 he began to lose power in his left leg. This loss of power gradually increased until the time of his admission to the hospital when he was unable to use the leg at all. When he walked the leg was dragged and he could not stand upon it. A sclerosis of the cord was diagnosed and although no history or other evidence of it could be obtained syphilis was suspected as the cause. The patient was put upon Pot. Iodide and he commenced to improve immediately. About the middle of October he had almost completely recovered the power and the use of his leg and was working around the hospital. He then went home but returned in ten days with the following symptoms: Excruciating frontal headache, nausea and obstinate constipation. Within twenty-four hours his temperature went up to 104, pulse 90 and respiration 24. His abdominal muscles were rigid, his bowels were obstinately constipated, there was slight gurgling on pressure in the right iliac region. In the course of forty-eight hours the pupils became irregularly contracted and the patient developed opisthotonos. A diagnosis of meningitis was made and the patient was put upon a mixture of Pot. Iodide and Pot. Bromide. On account of the gurgling in the right iliac region the possibility of typhoid fever was kept in view and Dr. W. T. Connell was asked to make a blood examination. He reported a typical Widal re-action, in other words that it was a case of typhoid fever. The subsequent history of this case was that in eight days the patient's temperature, pulse and respiration became normal and all other symptoms disappeared. Was this a case of meningitis or of typhoid fever, or was it a case of typhoid fever with meningeal complications? The only evidences of typhoid were the right iliac gurgling and the Widal re-action. As against typhoid we had the character of the temperature chart and the complete recovery in eight days. It is true that the patient may have been

suffering from mild symptoms before he returned to the hospital. But it must also be remembered that he had been out of the hospital for only ten days and that when he left he was perfectly well except for a slight impairment in power in the left leg. In favour of meningitis we had the excruciating headache, the irregularity of the pupils, the opisthotonos, the rigidity of the abdominal muscles, the obstinate constipation and the complete recovery in eight days under treatment with Pot. Iodide and Pot. Bromide. Further it must be borne in mind that this patient had been in the hospital since last spring with what appeared to be a spinal sclerosis and that he improved under Pot. Iodide. If this was not a case of typhoid fever then Widal's re-action loses its diagnostic value as regards this disease. On the other hand if it was a case of typhoid fever then it is only another instance which goes to show that in this disease we do not always find the recognized evidences of it. My own opinion is that it was only a mild case of typhoid fever complicated with meningitis and that the meningitis was probably syphilitic in its origin.

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CASE II.—T.S.: The following history was obtained for me by my Clinical clerks:—Age 21; occupation, farmer; weight 150 lbs.; father has phthisis, mother in good health, one brother and two sisters in good health, one brother and one sister died when young, one of mother's sisters died of lung trouble; until three years ago patient has always been in best of health when he had an attack of la grippe; had another in 1899 and another in 1900; these attacks lasted about two weeks and the patient was not confined to bed during any of them.

Physical examination:

Inspection, chest normal and well developed.

Percussion, normal.

Palpation, vocal fremitus, normal.

Auscultation, nothing abnormal.

Last August patient had a sore throat which was supposed to be tonsillitis. This lasted three weeks. Both tonsils were covered with a greyish membrane which was closely adherent to them. It seemed, as he said, to grow right into the tonsil.

The doctor removed these patches or parts of them with difficulty. He says that the act of removing the patches caused considerable pain. He says that several others in the neighborhood had sore throats similar to his. Patient's gait is very unsteady. He can hardly turn around without support. He noticed this paralysis first about six weeks ago. Two weeks ago, he says, his feet felt like lumps of lead and he was unable to move his toes. The hands are both affected. His grip is not nearly as firm as it was. He has difficulty in the act of dressing or of undressing. He has no pain in either his arms or his legs. Sensation is normal in all of his extremities. Patellar reflex is absent. The paralysis is motor only. The paralysis came on gradually about one month after the attack of tonsillitis. His eye sight was bad just after the attack but is now as good as ever. After his eyes became well, he says, the trouble went to his stomach. It felt numb and just as if needles were sticking into it. He says his stomach feels perfectly well now.

Temperature on admission, 99; next morning and ever since, normal. Urine, normal. Diagnosis, post—diphtheritic paralysis.

Such is the history of this case obtained for me by Messrs. G. H. Bleeker and J. W. Merrill and their diagnosis based upon that history. I need not say that I perfectly agree with them. The case is self-evident. Why then do I think it worth reporting? For two reasons, first, to emphasize the necessity of making an accurate diagnosis of all cases in which there appears a membrane upon the mucous membrane of the throat. This is important both to the patient and to those who may come in contact with him. This case, looking at it in the light of its after history, was evidently one of diphtheria. I fully recognize the difficulty there often is in differentiating tonsillitis from diphtheria and for that very reason I have always felt that it was always safer to treat all doubtful cases as if they were diphtheritic until the doubt could be cleared up by bacteriological examination or otherwise. Such a course entails no hardship upon the patient and protects the friends and others from the danger of contracting the more to be dreaded disease. Secondly I thought this case worthy of being reported on account of

the mode of onset of the paralysis. A young man of fairly good health contracts diphtheria, is ill three weeks and one month thereafter evidences of paralysis show themselves. This interval is not usual. It will be noticed, however, that the paralysis began in the extremities and was practically confined to them. It is true that the patient states that after recovery his eyesight was somewhat impaired but no paralysis of any of the eye muscles was at any time apparent. This is unusual, the muscles of the extremities being as a rule not affected until those of deglutition and of the eye have become paralyzed.

The treatment adopted was massage and strychnine. The patient made a good recovery. He has been working on the farm for the last two weeks and reported when I saw him last week that nearly all evidence of paralysis had disappeared.

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Text Book of Medicine, by Strumpell. We have received from D. Appleton & Co., a copy of the above work. The book consists of 1215 pages and has eighty-five illustrations and one plate. The mechanical part of the book is up to the high standard always maintained by these publishers. The matter is arranged systematically and each subject is treated fully in a scientific manner. The text contains the latest information as to the etiology of disease, diagnosis, pathology, bacteriology and treatment. It is a work that every practitioner will be well repaid by carefully studying.



## MEDICAL NOTES.

### VACCINATION AND TETANUS.

Much discussion in medical circles, and many alarming rumors in the ordinary press have been caused by the recent series of eight cases of tetanus occurring during the course of vaccination in Camden, N.J., and in Philadelphia. Here in Canada a like case is reported from Ottawa (newspaper report). Naturally it may be taken for granted that these cases will be extensively quoted by anti-vaccinationists as an additional reason against the use of this prophylactic against the small-pox. It may be well then to analyze these cases, not only to arrive at the facts, but to meet objections that may be offered to the operation. In the Camden and Philadelphia cases none developed earlier than the 20th day after vaccination and some as late as the fifth week. The period of incubation of tetanus is quite variable, being usually two to ten days, seldom more than twelve to fifteen days, and when it develops after this time the cases are usually more chronic in their course with a greater tendency to recover. Dr. Samuel D. Gross, of Philadelphia, remarks, "Persons are most likely to recover from acute tetanus when the attack occurs subsequent to the ninth day after the injury." Many other authorities might be quoted in the same strain so there is no need to further emphasize this point. However, *all* of these cases were acute in character and ended fatally in from two to six days so that if tetanus were inoculated with the vaccine virus we have here a very wide departure from the usual clinical features following such a prolonged incubation. There was no such chronicity nor tendency to recover as usually seen in cases of such prolonged incubation.

Again Dr. Wilson, of Philadelphia (American Medicine, Vol. II, page 903), states that in all the cases anti-tetanic serum was employed so that the cases got the full advantage of the

only known specific treatment. Further, Dr. Wilson states "that in not one case was the wound properly cared for throughout the course of the vaccinia. In nearly all the shield was used persistently, and I can personally answer that in at least one case its influence increased the local inflammation, if by replacing the proper dressing it did not actually transmit the tetanus germ." In the two Philadelphia cases the patients were the children of stablemen and, as is well-known, the tetanus bacillus is found to flourish more abundantly in the soil and dust about stables, so that there is in these cases at least a common source of infection. To most inquirers the evidence brought forward will be quite sufficient to exclude from their minds the possibility of the tetanus infection being inoculated with the virus. When we add to this, the statements quoted above by Dr. Wilson, that in no case was the wound properly cared for during the course of vaccinia, we will note the very great possibility of such wounds being subject to secondary infection from scratching, etc. As an additional point large numbers of vaccine points and tubes, bought in open market, have been submitted to bacteriological examination and in no case yet have tetanus bacillus been demonstrated in the virus.

The Canadian case quoted in the newspapers followed very much the same course as the other cases and the physician in charge is quoted as saying that there was no causal connection between the virus and the tetanus.

The physician then must recognize certain points in connection with vaccination:

1st. Vaccination must be regarded as an operation and like any operation must be done aseptically (not antiseptically).

2nd. That the operation produces a *wound* which must be cared for like any other wound, that is, should have proper dressing; discharges should not be retained and permitted to putrefy or lay open the way for secondary infection with the common pus micrococci, the tetanus bacillus and such ilk.

3rd. The vaccination shield is not only a snare and delusion but may be a source of serious danger in ways which it is not necessary to further mention.

## ANTI-DIPHTHERITIC SERUM AND TETANUS.

In St. Louis, Mo., there has occurred (Oct. 26th—Nov. 16th), what can only be termed an unfortunate accident resulting in the death of fifteen children by the use of diphtheria antitoxin containing tetanus toxin. The blame rests upon the bacteriological division of the St. Louis Board of Health, and the circumstances so far gathered are as follows:—A horse was bled on August 24th and again on September 30th to obtain the serum. On October 2nd the horse developed tetanus and the serum of Sept. 30th was supposed to have been all destroyed. However, some of it (untested), was accidentally sent out labelled as serum of August 24th, and it was this serum which gave rise to the tetanus. The tetanus toxin is the most virulent poison known, as  $\frac{1}{175}$ th to  $\frac{1}{250}$ th grain is sufficient to kill a man of 165 pounds. Of course if this serum of September 30th had been tested as all such serums are and not accidentally used as serum of previous bleeding, then its toxin bearing qualities would have been discovered by its effects on the experimental animals. The medical profession can put every confidence in the antitoxic serum ordinarily on the market as all such serums are carefully selected and tested, and this one accident, though terrible in its results, will but lead if possible to greater care in the preparation of such serums.

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At the meeting of the executive officers of Health Association of Ontario, at Brantford, in June last, the following resolution was adopted on motion of Drs. Coventry and Hutchison:—  
 “That in view of the widespread dissatisfaction during the past two years, felt by the medical profession, in the use of vaccine, it is desirable to investigate the cause of its failure in a large proportion of cases. An extended report on this subject having the endorsement of the association, would confer a benefit on the profession at large, and the president is hereby authorized to name such a committee to report at the next annual meeting.”

In accordance with this resolution the President, Dr. Kitchen, named the following committee: Dr. W. T. Connell of Kingston, Chairman; Drs. Amyot and Shuttleworth of Toronto, Dr. Franks of Brantford, and Coventry of Windsor.

An appeal was made to the Hon. Stratton, the Provincial Secretary, who very kindly made the committee a grant of \$80 to cover some of the expenses of the investigation.

It is to be hoped that the committee will be able to arrive at some knowledge of the causes of the failure of so much of the vaccine on the market, and thus be enabled to direct attention toward the securing of remedies to overcome the defects.

The Ontario Association are not alone in pointing out the importance of this subject. We note that at the September meeting of the American Public Health Association in Buffalo, a strong committee headed by our own energetic Secretary of the Provincial Board of Health has been appointed. Then, too, the best American Medical Journals are asking the American Medical Association to take up the matter and to memorialize Congress on the subject. To an onlooker it seems as if the entire matter of testing vaccines, and perhaps also anti-toxines and toxines will yet drift under Government control, with the formation of what is very desirable, a Public Health Department.

W. T. CONNELL.

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### BOOK REVIEWS.

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An American Text-Book of Pathology, edited by Drs. Ludvig Hektoen and David Riesman, 1245 pages, 443 illustrations, of which 66 are in colors. Cloth, \$7.50. Sheep or half Morocco, \$8.50. W. B. Saunders & Co., Philadelphia. J. A. Carveth & Co., Toronto, Canadian Agents.

This work is on the same lines as the others of the excellent series of text-books issued by Saunders & Co. Each department of the subject is treated in a very clear and comprehensive manner by specialists. For pathology and pathological anatomy are now growing so limitless that the

specialist has plenty of scope to flourish in their domains. There seems from a short review of the book to be very little to criticise. In fact the work is the most promising of all the recent books that have appeared on the subject and can be heartily recommended to all those who desire a wide acquaintance with modern pathology.

“Atlas and Principles of Bacteriology,” by Drs. Lehmann and Neumann, of Warzsburg. Translated by Dr. George Weaver, assistant professor of pathology, Rush Medical College, Chicago; in 2 volumes. Vol. I, plates and description, price \$3.50; Vol. II, text, price \$2. W. B. Saunders & Co., Philadelphia; Canadian agents Carveth & Co., Toronto.

These two volumes are part of that excellent series of hand-atlases now being issued by Saunders. The plates are very well executed and afford an excellent aid to the student in studying the characters of the different bacteria. The text (Vol. II.), gives a very clear summary of our present bacteriological knowledge. The nomenclature of the various bacterial species is fashioned on some new lines and while it may be more strictly botanical it would but load us with a new lot of synonyms, as there is but little probability of such terms being generally adopted, at least in English speaking countries. As a pictorial aid to the student and as an excellent summary on general and special bacteriology, these volumes can be heartily commended.