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Original Communications.

THE HOME TREATMENT AND PREVENTION OF PULMONARY TUBERCULOSIS.*

BY T. F. McMAHON, M.B.

Professor of Medicine Ontario Medical College for Women; Physician to the Toronto General and St. Michael's Hospitals.

The sanatorium treatment of pulmonary tuberculosis is as yet, and for many years must remain, unattainable by the vast majority of patients. We have now to consider: (1) How shall we prevent the patient treated in his own home from communicating the disease to others? (2) How shall we deal with susceptible individuals so as to minimize the danger of their becoming infected? and (3), Having contracted consumption, what means shall be taken to cure the disease or stay its ravages?

The measures for the prevention of tuberculosis fall naturally under two main heads—first, those for the destruction of the germ or for the prevention of its entrance into the body, and second, those directed to the maintenance of the nutrition of the individual at the highest possible standard. Without the specific germ there can be no tuberculosis, and the germ cannot flourish unless it fall upon good soil. The main sources of infection are two: (1) The sputum, and (2), infected food. We may safely take it that it is the susceptibility and not the disease itself that is often inherited.

The prompt destruction of the sputum would go far towards blotting out the disease, removing as it would the most common factor in its dissemination.

*Read at the Ontario Medical Association, 1899.

Nuttall tells us that a tuberculous patient may expectorate at a moderate estimate, from two to four billions of bacilli in twenty-four hours. The sputum quickly dries, and the dried bacilli are spread broadcast. The public generally and tuberculous patients especially must be educated to a due appreciation of this fact. The risk of infecting even nurses and attendants is slight, if proper precautions are taken. This involves much thoughtfulness and care. It is almost impossible to abolish the handkerchief, but with the shaking out of a filthy handkerchief on which tuberculous sputum has dried, millions of the bacilli are thrown into the air to be inhaled, perchance, by susceptible persons. Instruct your patients, then, never to spit on the floor or handkerchief. The danger from spitting on the ground in the sunlight is not so great, but even this must be avoided in the streets of our cities and towns. The sputum should be received into proper spit-cups containing a suitable disinfectant, and finally thrown down the water closet or thoroughly destroyed by boiling. The mouth may be wiped by rags which must be promptly burned or boiled. That the danger from dried sputum on handkerchiefs is a real one is shown by the frequency with which the women who shake out and wash the handkerchiefs of tuberculous persons at health resorts contract the disease.

When consumptives mix with the public, they should be required to carry a spit-cup, and spitting in public conveyances, hospitals, halls, churches and other public places should be made an indictable offence.

The breath of a tuberculous patient is not a source of any considerable danger, but Flügge's experiments convinced him that the expulsion of fine drops of saliva and mucus containing bacilli, during coughing, constituted a real danger. He says that intimate association with coughing consumptives, especially when one frequently approaches the patient nearer than one metre, is dangerous.

I always instruct my patients that dried sputum is a source of danger not only to others, but also to themselves, by infection of previously healthy portions of their own lungs. Selfishness is the mainspring of human conduct, and there is no surer way of making a man careful than to bring into play the instinct of self-preservation. Another important instruction is that rooms in which consumptives live should be dusted with damp cloths.

Every possible means of educating the public concerning these dangers should be utilized, and the distribution and proper care of spittoons containing water or a disinfectant solution to prevent the drying of the sputum in public places, schools, factories, etc., should be encouraged. The Government

and Health Boards must take the question up in earnest. Insistent and persistent reiteration of the facts that consumption is (1), communicable; (2), preventable, and (3), curable, will in time bear fruit, and without education of the public all our efforts will be in vain. Posters setting forth the main facts and forbidding improper spitting, should be put up in factories, schools, churches, and other public resorts, and a vigorous newspaper propaganda should be carried on. The Health Boards should require physicians to report tuberculous cases in order that patients and their friends should be supplied with literature setting forth the dangers and the best method of meeting them. Premises occupied by a consumptive and vacated by removal or death, should be made fit for further occupancy under the supervision of the Health Boards.

For efficient prevention and successful treatment, an early diagnosis is absolutely necessary, and this would be greatly facilitated if our Health Boards would examine sputum free of charge. Bacteriological examination is quite as important in pulmonary tuberculosis as in diphtheria, and comparatively few physicians are equipped to make it.

The association of consumptive patients with others in our public hospitals, and the totally inadequate measures taken to prevent the spread of infection, are notorious and scandalous. Consumptives should not be treated in the same wards as others in public hospitals. It is bad for the patients and bad for the public health.

Next in importance to proper disposal of the sputum is efficient inspection of our milk and meat supply. Governmental inspection of dairies and systematic use of the tuberculin test would go far towards removing this danger. But time will not permit me to make more than this short reference to this branch of the subject.

The dangers of infection from tuberculous domestic pets, such as birds, cats, etc., must not be forgotten. Some authorities discountenance the keeping of such.

Efficient measures having been taken for the disposal of the sputum, and for the securing of a pure food supply, there are other considerations of equal importance. The germ of tuberculosis we shall probably always have with us, so we must take all possible precaution that it fall not on good soil. The improvement of the conditions under which people live and the maintenance of the health of the individual at the highest possible standard, are the best preventatives. An abundance of fresh air and sunlight in our homes and workshops, a sufficiency of cubic space, especially in sleeping apartments and work-rooms, clean and dustless streets, proper disposal of sewage and garbage, good food and clothing, and as much open-air

exercise as it is possible to secure, are among the general measures that commend themselves to all.

Individuals specially predisposed to tuberculosis by heredity or otherwise should receive particular attention. Their food and clothing, their occupation and manner of living should be carefully supervised. If the family physician would make it his duty to watch out for badly formed chests and faulty breathing, he could do much to minimize the dangers. Adenoid vegetations and enlarged tonsils should be removed in order that there should be a free entrance of properly warmed and filtered air to the lungs. The experience of orthopedic surgeons with systematic physical training and deep-breathing exercises, shows how much can be done in increasing the lung capacity of narrow-chested, stoop-shouldered, shallow-breathing young persons. The tight-laced young lady who thinks it vulgar to romp, never expands the apices of her lungs, and the enterprising tubercle bacillus finds them admirable places for rearing his large and voracious family. Every precaution should be taken against cold-catching, and the convalescence from diseases involving catarrhal conditions of the respiratory tract should be carefully guarded.

For an individual predisposed to tuberculosis to choose a sedentary occupation is to court disaster. For him, large, well-ventilated living and sleeping apartments, and such amusements and occupations as will involve a large amount of out-door life are especially desirable.

In the prevention of consumption, as in its treatment, the great desideratum is "air, air, more air." Nor must we neglect the prompt attention to dyspeptic and anemic conditions so often the forerunner of tubercular infection.

Treatment.—In the time at my disposal I shall not be able to do more than sketch the general measures advisable. I shall not attempt to enter into the treatment of special symptoms.

The cure is altogether a question of nutrition, and if this is maintained, the disease usually shows a tendency to spontaneous cure. But before saying what ought to be done allow me to first take most vigorous exception to the utterly indefensible treatment which is even yet so common. The patient will clamor for cough-mixtures. You might as well put a man on a hand-sleigh on an icy hillside and expect to see him soon arrive at the top, as to expect a consumptive to make any progress whilst taking opiate cough-mixtures.

In our home treatment of tuberculosis the nearer we approach the methods of the sanatoria the more satisfactory our results will be. The only method of treatment worth discussing is the open-air method. Other measures may prove useful adjuncts, but without pure air and sunlight they will be of little avail.

Seven years ago I had a patient who had extensive infiltration of the upper lobe of the right lung, and a small deposit in the apex of the left. He had fever, night-sweats and hemorrhages, and was rapidly losing flesh. I advised him to throw up the indoor occupation at which he was engaged, and as it was necessary that he should gain a livelihood, take up some outdoor occupation. He bought a horse and cart and took a position as overseer of extensive building operations in various parts of the city. He spent ten or twelve hours a day in the open air and slept in a large room with the window wide open, winter and summer. He took creosote in fair sized doses, as well as such tonics as arsenic, strychnia and hydrochloric acid. He ate four meals a day, and there was no restriction on his diet except that he was instructed to use meat (including fats) and eggs very freely. He commenced to improve at once, and within a few months had gained fifty pounds. He has had no cough for some years, the lung is healed, and notwithstanding a recent attack of inflammatory rheumatism, looks the picture of robust health and weighs 228 lbs. I have had similar experience with some others. Even advanced cases with cavities have shown remarkable improvement. One young man who had been confined to the house for months, and whom I at first expected to die within a month, gained thirty pounds, and was in fair health for a year, when an acute outbreak quickly carried him off. Before I adopted the open-air treatment I never saw a single case of pulmonary tuberculosis get well. The patient should, when in the house, occupy the room with the most sunshine. If the temperature is 100° F. or over, he ought to rest in the summer on a hammock or couch in the garden—in the winter wrapped up in blankets, with a foot-warmer under his feet, on a couch or chair on the veranda, or other sheltered place. Nothing must be allowed to interfere with a full exposure to fresh air for from six to twelve hours daily. The air of the mountains and forests is, of course, purer, and therefore better than that of the crowded city, but we are now discussing the home treatment, and must take the home as we find it, and climatic considerations need not be discussed.

Of specific treatment I need say but little, as none of them have as yet given uniformly satisfactory results.

The condition of the digestive organs and the diet are of the greatest importance, and but little progress can be made until digestion is put upon a satisfactory basis. It is worse than useless to stuff a weak stomach with strong foods. Rest in the open air, or better, a change of air will usually improve the digestion, if the diet is for a time restricted to milk, buttermilk or kumyss, with meat juices or egg albumen. If this fail it may be necessary to resort to forced alimentation through

a stomach tube, after washing out the organ with cold water. Excellent results have been obtained from this procedure in the sanatoria, and it is a method which is too much neglected by the profession. Among medicinal agents, tonics and aids to digestion occupy the first place, but we must be careful that in striving to do a little good, we do not do a great deal of harm. Cod-liver oil, when it agrees perfectly, is undoubtedly useful and the arsenic, strychnia and the mineral acids sometimes yield good results. But, of all the drugs I have used the best results have followed the administration of creosote. It lessens the cough and fever, and in many cases appears to have an excellent effect on digestion. The mistake is often made of giving it in too large doses, which disagree with the stomach and lead to a total abandonment of the drug. With regard to treatment by inhalations I find the reports very contradictory. Personally, I have seen but little benefit therefrom. Any treatment having the charm of novelty is apt to inspire hope and confidence in the patient, and, knowing as we do the triumphs of suggestion in therapeutics, we ought to take full advantage of its aid.

THE ROLE OF WOUND INFECTION AS A FACTOR IN THE CAUSATION OF INSANITY.*

BY A. T. HOBBS, M.D.,
Asylum for Insane, London, Ont.

The introduction of the microscope in the minute analysis of pathological tissues and in the discovery and differentiation of atomic germs is rapidly revolutionizing the etiology of disease. The patho-bacteriologist, by his researches, has shown how prominent a factor the micro-organisms are in causing the many physical ills that affect and decimate the human race. Furthermore, we are beginning to estimate the potency of these organisms and their products in the frequent production, directly or indirectly, of many cases of mental alienation.

THE GERMS OF WOUND INFECTION.

The bacteria usually found in wound infection are: (1) The streptococcus pyogenes, (2) the staphylococcus pyogenes, (3) the micrococcus gonorrhea, (4) the streptococcus of Fehleisen, (5) the saprophytes.

There are other bacteria found in wounds, but the above mentioned are the germs mostly concerned in wound infection.

Not only do the bacteria themselves act as a virus, but their chemical products—toxine and ptomaine—possess a specific virulent action when absorbed into the body.

WOUNDS USUALLY INFECTED.

1. Small abrasions, or incised wounds, or contusions on the face or on the scalp, usually subject to neglect.

2. Lesions of the genital tract entailed by maternity, such as perineal tears, bruising and contusions of the vagina, laceration of the cervix uteri, and the raw placental site in the puerperal uterus.

These wounds are the favorite portals through which the germs or their virulent products find entrance into the lymphatic or circulatory channels and thence distribute themselves throughout the system.

EFFECT OF INFECTION UPON THE CONSTITUTION.

Action of infection upon the central nervous system is brought about directly through its circulation. The contaminated blood filtering through the capillaries is absorbed into the cellular and ganglionic structures, bringing about abnormal changes in their protoplasmic elements, varying from cloudy

*Read before the American Medico-Psychological Association at the 55th Annual Meeting in New York, May 23rd, 1899.

swelling to distinct pigmentation. These noxious elements disturb the harmony of their exquisitely balanced functions, interfering with the infinitesimal chemesis so necessary to the production of rational action and thought.

The indirect action of the infection upon the central nervous system occurs through the disturbance of the organic mechanism engaged in the digestion of food. The effect on the functions of the alimentary tract by the toxic material is to lower the nutritive qualities of the ingesta, and, therefore, the blood plasma, upon which the brain, like other organs, is dependent for the maintenance of its vitality. Also, the infected blood current, circulating through the capillaries of vaso-motor centres, irritates these centres, and disturbs through them the equilibrium of the cerebral circulation, thereby enhancing the intoxication already produced in the centres of thought and reason. Furthermore, if in the infected patient there exists a prior condition of heredity, the effects of the toxemia are intensified. Is it then to be wondered at that such a delicately poised organ as the brain should show the various phases indicative of mental disquietude, ranging from hebetude or delirious muttering to the intenser or graver forms of melancholia and mania?

Effects of Infection Locally.

The effects of infection locally upon the wound or the tissues in its immediate vicinity are governed by the locality of the injury. Superficial wounds of the body, especially of the face and head, are easily amenable to treatment, and, as a rule, resolution is rapid. Injuries, however, of the genital tract, from its situation, and especially if located in or around an organic structure, are more difficult of amelioration. Pathological processes in uteri often embrace the whole organ, owing to its extreme vascularity, and by extension or penetration may easily implicate the adnexa or other pelvic contents. Thus, to the burden of infection in puerperal cases, are added inflammatory lesions, which often of themselves wreck the future health of the individual.

The Insanities Following Infection.

1. Erysipelatous insanities. A study of eight cases of insanity traced to the infection of the streptococcus of Fehleisen shows that the insanity may occur during the attack of erysipelas, or may follow the subsidence of the infection. They were all of the maniacal type, ranging from mild, paroxysmal mania to acute, violent mania, and which, in some cases, merged into a condition of chronic mania. Three, who became insane during the attack, recovered, one mentally improved, one died three

months after the attack, and the remainder became chronically insane. None of the types of erysipelas in these cases were of phlegmonous nature, and the local inflammation made the usual resolution.

2. The septic insanities of the puerperium. These embrace a larger field. For convenience they may be described under three heads:

(*a*) Puerperal insanity, with little or no local lesion, caused by septic infection.

The insanities from this origin occur probably from absorption into the circulation of the toxines of an infected clot, either through the placental site or some tear or abrasion, or by the absorption of the ptomaines of the saprophyte germ, which finds lodgment in the detritus of a puerperal uterus.

The majority of these cases, being of short duration, recover at their homes on elimination of the poison. They are usually of a mild contusional type or a form of muttering delirium.

(*b*) Puerperal insanity complicated by gross local lesion, the result of septic infection.

The insanities of this class are usually of a more serious character than those of the former. The local inflammatory lesion acts as a focus, keeping up the prior intoxication by distributing a continued supply of the virus to the already poisoned circulation of the patient, or by reflex irritation. The majority of these patients do not recover the normal mental condition under ordinary systemic treatment.

The study of the histories of ninety-eight cases admitted into the London Asylum since the year 1870, in which the alleged cause was given as the puerperium, discloses that just one-half, or 50 per cent, recovered reason. It is fair to suppose that very few of these had any serious local lesion complicating their insanity, as some recovered very soon after their admission. I have been able to examine gynecologically twenty-three of these ninety-eight cases. In twenty-two of them were lesions ranging from subinvolution to complete agglutination of the pelvic organs. This would indicate that over 90 per cent. of these cases had some complicating pelvic lesion. Suitable surgical measures being adopted in twenty-one of these resulted in the mental recovery of eight cases and in the improvement of four, while nine remained unimproved. The eight recoveries were included in the 50 per cent. before-mentioned total recoveries in the puerperal cases.

I may say that seven of the nine who failed to show any mental improvement subsequent to any surgical treatment had been insane for periods of from two to sixteen years.

(*c*) Post-puerperal insanity, induced by pelvic disease, the latter being the result of septic infection.

It is now generally recognized by obstetricians and gynecologists that a severe local sepsis may occur in the genital tract during the puerperium with apparently little systemic disturbance. This condition often escapes the notice of the accoucher, and, as a result, a prolonged and partial convalescence only ensues. The puerperal woman, on leaving her bed, has a constant feeling of malaise. The combination of pelvic disease, the main fact of causing the incomplete convalescence, together with the futile attempts to perform the duties of a wife and mother, ultimately result in a complete breakdown mentally and physically. This unfortunate sequela to the puerperium often occurs six, eight, or ten months, or even longer after the birth of a child, and which can be traced back to its puerperal source. Unfortunately, however, the physicians who fill and sign the commitment papers either are not in possession of the patient's previous history, or they fill out the forms very carelessly, giving very few, if any, facts of the prior health of the patients to be admitted. Alleged causes, like overwork, mental strain, or worry are usually assigned as the exciting factor, and in many histories a negative answer only is given. For these reasons I think it imperative that the history papers, when issued for the admission of an insane woman to an asylum, should have attached a slip containing certain leading questions, bearing upon the reproductive organs, to ascertain a fuller and more satisfactory history of the previous health of the patient in this respect. We would gain additional and valuable information which is rarely given in the usual insanity certificates. If the history then pointed strongly to the presence of lesions in the genital tract, and such be demonstrated, timely and invaluable treatment could be adopted, and mental and physical recovery very much accelerated.

During the past four and a half years we have, at the London Asylum, endeavored to secure from the friends of the incoming female patient and the family physician an account of the previous diseases (if any) the patient suffered from, and especially all the facts concerning the number of children and the history of the different puerperiums. Having this information to hand, we are then able to decide whether or not to make a gynecological examination of the insane woman.

We have, to date, examined 187 women—recent admissions and chronic patients—and found distinct pathological lesions in 163. Of the 163 there were no less than eighty who had inflammatory lesions of the pelvic organs that were, so far as we could judge, brought about by septic invasion at the time of a puerperium. All of these eighty women had marked subinvolution or chronic metritis, and forty-two had complicating

diseased cervices. Some thirty-three had retro-displaced uteri, and nineteen had more or less seriously lacerated perinei. In addition, eleven had inflammatory tubal or ovarian disease, three had fibroid tumors, and one a deep rectal fistula.

Subsequent upon suitable surgical treatment of these eighty cases we had return to physical health in nearly all, and thirty-six, or 45 per cent., recovered mentally, and twenty, or 25 per cent., had mental improvement, while the mental condition of the remaining twenty-four, or 30 per cent., remained stationary.

From this it is evident that, if septic infection is mainly responsible for the production of inflammatory conditions of the pelvic organs, occurring during the puerperium, and that so large a percentage of mental recovery and improvement succeeded the removal of these lesions, it strongly emphasizes how important a factor the micro-organism is in thus directly or indirectly being the cause of many a case of mental alienation. Moreover, it teaches these lessons, that too great care cannot be adopted by the accoucher in conducting a female through the really dangerous period of the puerperium and protecting her from sepsis; and to those having the care of the female insane, that the removal of inflammatory lesions of the pelvic organism when found, opens up a possible avenue of escape from mental thraldom of these unfortunate exiles of humanity.

ELECTROLYSIS AND CATAPHORESIS IN THE TREATMENT OF INOPERABLE AND RECURRENT MALIGNANT DISEASE.

BY R. N. FRASER, M.D., C.M., M.R.C.S. (ENG.), THAMESVILLE, ONT.

In connection with a consideration of the treatment of malignant disease, I wish to-day to report the history of a case in which apparently a favorable result has been secured after repeated failures.

I am not aware that any case has heretofore been reported in Canada in which a similar plan of treatment was adopted, and I shall therefore endeavor to give you details as far as time will permit, so that you may have an opportunity of judging for yourselves both as to the malignancy of the disease and as to the part played in the treatment by each of the means employed.

The patient was placed under my care on the 16th of December, 1896, with the following history:

F. G. A., aged 40, married, druggist. Family history good. Health previous to beginning of present trouble had been good. Had an attack of mumps in 1883, with orchitis, followed by partial wasting of the testicles.

During the fall of 1894 he occasionally noticed slight soreness in the right testicle, particularly after being much on his feet. He paid little attention to this until September, 1895, when the attacks became more pronounced, occurring about once a month, lasting two or three days, and being accompanied by some enlargement which did not completely subside between the attacks.

In July, 1896, he went for a two weeks' holiday trip on his wheel. The testicle at this time felt heavy and was somewhat sore, but the saddle of the bicycle seemed to support it, so that riding was not uncomfortable.

Ten days after returning from the trip, that is, in August, 1896, the testicle became much enlarged, and pain became almost constant, though not very severe. The enlargement gradually increased, and after two or three weeks he consulted his physician, who diagnosed hematocele and withdrew ʒ ss. of blood through a hypodermic needle, without, however, lessening the size of the testicle or giving relief to the pain. The operation was repeated with an aspirator needle, and again with a cannula and trochar, with no better result.

Septic inflammation followed, which made it necessary to lay the scrotum freely open. A large opening was also made about the situation of the external abdominal ring. Most offensive

pus and foul gas were in this way liberated, the cellular tissue being found gangrenous. A few hours later further incisions were made, extending along Poupart's ligament and the crest of the ilium.

The scrotum was found to contain a tumor which was so much decomposed and burrowed into as to be quite unrecognizable, and this was not removed. The wounds were packed with iodoform gauze, and the patient made a good recovery, but the testicle remained large, and becoming adherent to the scrotum fungated through the openings. It was therefore removed on October 16th, after which the wounds healed nicely.

The testicle was sent to Dr. J. Caven, of Toronto, for microscopic examination, and he pronounced the case one of cystic sarcoma.

I found upon examination the patient apparently in good health and well nourished, a cicatrix extending from the lowest extremity of the scrotum to a point a little above and behind the anterior superior spine of the ilium. This was somewhat dense throughout. Just below the external abdominal ring there was a small rounded tumor about the size of a filbert seemingly attached at its upper extremity, and adherent to the cicatrix.

On December 17th I cut down upon this tumor and found it attached to the cord, which was therefore amputated and the tumor removed. This was sent to Dr. H. B. Anderson, of Toronto, who, after microscopic examination, pronounced it a small round-celled sarcoma.

The wound healed by first intention, but the cicatrix remained thickened and hard, and early in January, 1897, a small rounded tumor could again be felt just below the site of that formerly removed. This also was adherent to the cicatrix, which was much infiltrated.

On January 22nd this little tumor had attained the size of that removed a month before, and, despairing of success by operation, I began treatment of the case by Dr. W. B. Coley's method of injecting a mixture of streptococcus and prodigiosus toxines. Dr. Coley himself very kindly gave me the benefit of his advice, and supplied me with the toxines prepared according to his directions. While, however, he advised a trial of this method, he stated that he had not had very gratifying results in such cases.

Beginning with a half minim the dose was gradually increased to fourteen minims without getting any very severe reaction. Bloody serum began to come away on January 30th through two of the needle punctures which had opened up, and these openings enlarging, the tumor soon began to fungate and

bleed. I therefore stopped the use of the toxines, and on February 8th, as a palliative measure, removed the growth, which was about the size of a walnut, and was attached to the cord. The cord was amputated as close to the internal ring as possible. The tumor was sent to Dr. H. B. Anderson, who pronounced it carcino-sarcoma.

A month later a small recurrence could again be distinguished, and I resumed the toxine treatment on March 19th, continuing until the 31st, sometimes getting a good reaction and sometimes none at all, but the tumor continued to increase in size until April 12th, when it had assumed an elongated shape about an inch in its transverse diameter, extending from a little above the external abdominal ring to the lowest part of the scrotum and infiltrating the cicatrix nearly as far as the spine of the ilium. Several small blood cysts had formed just beneath the skin. and two of these having given way the tumor was beginning to fungate.

I therefore again removed the whole mass, cutting as wide of diseased tissue as possible, excising the infiltrated cicatrix and again cutting the end of the cord. A small portion of this wound filled in by granulation.

No treatment whatever followed this operation until May 20th, when two small nodules were removed from just beneath the pubic arch, the perineal muscles being laid bare in the operation. At this time that part of the cicatrix about the external abdominal ring was much thickened, but was not removed.

Early in June, 1897, I learned through one of the medical journals that Dr. J. McFadden Gaston, of Atlanta, Ga., had read a paper before the American Surgical Association at Washington, advocating electrolysis and cataphoresis in cases of inoperable sarcoma. As I could not get a report of his case so early I wrote him for information, and he very kindly sent me the written copy of his paper. This paper was afterwards published in the *Annals of Surgery*, for August, 1897, and in it Dr. Betton Massey's independent work along the same line was duly acknowledged.

The case which he then reported was that of a boy, aged 12, who had suffered from a growth in the hypogastric region. An exploratory incision had been made by Dr. J. B. S. Holmes, when sarcoma was found with such adhesions as to preclude removal by the knife, and the incision was closed.

Dr. Hunter McGuire, of Richmond, Va., afterwards examined the case, reopened the incision, had the tumor subjected to microscopic examination, and declined operation. Dr. M D. Hodge, jun., of Richmond, upon microscopic examination, pronounced the tumor a small, round-celled sarcoma.

After this the patient was placed under the care of Dr. Gaston, on November 17th, 1895, and he, as a last resort, placed him upon the following treatment: Donovan's solution in 8-drop doses was administered three times a day, with succus alterans as a menstruum. Electricity was used as follows, a twelve-celled battery being employed: A needle representing the positive pole was introduced into the substance of the right side of the tumor, and a sponge electrode, representing the negative pole, was placed on the left margin. At first only six cells were connected and the seance lasted five minutes. This was continued daily at first, and afterwards every second or third day, while the time was gradually increased to ten minutes, and more cells were brought into the circuit. The punctures were made about half an inch apart, going around the outer border of the tumor. Later the needle was used on the negative pole, and a small piece of cotton, moistened with Donovan's solution, was placed under the sponge on the positive electrode, and after the punctures had encircled the tumor the needle was replaced by another sponge electrode. Under this treatment the tumor gradually lessened; cachexia disappeared; the boy returned to school, and on May 1st, 1897, presented no trace of disease of a local or constitutional nature.

On June 24th, 1897, the condition of my patient was as follows: Total length of cicatrix, sixteen inches, of which the lower eight inches was considerably infiltrated, the lowest five inches being much thickened and hard, and the infiltration extending for more than an inch and a half in breadth at the external abdominal ring. At the side of the scrotum a small rounded tumor could be felt, and there was some puffiness in Scarpa's triangle, together with slight enlargement of the glands. The malignant growth had been five times removed within eight months, and a very positively unfavorable prognosis had been given by each of several physicians who had seen the case with me and had assisted at the operations.

Following Dr. Gaston, I prescribed Donovan's solution in 8-drop doses with teaspoonful doses of succus alterans, and began the use of electricity with a twenty-celled battery. I had no means of estimating the strength of the current other than the manifestations of pain on the part of the patient and throughout the treatment I connected just as many cells as he could well bear, the number ranging from six to twenty, according as to whether they had been recently filled or not.

I just passed a needle connected with the negative pole into the side of the cord-like cicatrix beneath the pubic arch, while a sponge electrode, about two inches in diameter, and moistened with salt water, was placed above the external abdominal ring and connected with the positive pole. Under this sponge was

placed a small piece of absorbent cotton, saturated with Donovan's solution. Six cells were connected, and the seance was continued six minutes

The usual bubbles of gas and serum escaped alongside the needle, and a number of vesicles and pits were produced under the cotton. This procedure was repeated on four successive days, after which the needle was replaced by another sponge electrode, and the time was increased to ten minutes. The same vesicles and pits were produced under the positive pole, but no effect was noticeable under the negative. This treatment was continued daily until July 8th, and afterwards every second day. The needle had caused considerable thickening at the points of puncture, so that the tumor appeared larger in its lower part, but the infiltration of the cicatrix above seemed slightly lessened.

On July 14th the tumor was nearly as large as a walnut, and a couple of soft bluish spots indicated the presence of blood cysts. I therefore passed the needle into and through the whole length of it, connected this with the negative pole, and turned on a good, strong current for ten minutes, the positive electrode being placed above the pubis.

This was followed in three or four days by the sloughing of the destroyed tissue, and an open wound remained. The sponge electrodes were again applied, one on either side of the wound, and after a week soft gelatinous matter could be squeezed out of it, while pieces of softened or necrosed tissue came away at each dressing. I scraped away a quantity of this softened tissue with a spoon curette, but there remained a hardened zone, perhaps a third of an inch thick, all around the wound.

The hardness about the external abdominal ring was now certainly less marked, and many divisions could be felt in it. The cicatrix above this had become quite soft, and the puffiness in Scarpa's triangle had disappeared. The cicatrix was also less adherent to the pubis at the side of the penis.

I now packed the wound with absorbent cotton, saturated with Donovan's solution, and passed the current through it. This cauterized the surface, but the effects did not reach far enough to destroy the growth, which continued to increase in thickness.

On August 17th, two zinc needles, coated with mercury, were passed into the tumor and connected with the positive pole, while the negative sponge electrode was placed at a little distance. This was repeated daily until the 21st, and then every second day until the 29th; but although small portions near the needles were destroyed the mass continued slowly to enlarge. The tumor was again removed by the knife, on August 30th,

and such adhesions were found as to necessitate a very careful separation from the urethra, and the removal of a small portion of the surface of the crus penis. The wound did not completely heal, a small sinus remaining.

Cataphoresis, with the sponge electrodes and Donovan's solution, was commenced again on September 6th.

A small nodule which was detected deep in the perineum on September 14th, was removed a week later, and this again was with great difficulty separated from the urethra and cut away from the crus penis, bleeding from which was controlled by forceps, while silk was used to ligate bleeding vessels. One of these ligatures was removed on December 12th from a sinus which had remained.

Cataphoresis, which had been interrupted by the operation, was again applied, December 10th, but in a few days another small tumor was detected, and by the 20th had attained the size of an almond.

On December 31st, 1887, a soft mass the size of a walnut, together with the adjacent cicatrix, which was hard and thickened, was removed. This time the tumor was attached to the perineal fascia, and very little healthy tissue was cut away. No large vessels were divided and no ligatures used (a fact which I am not sure did not contribute largely to the success of the case). Short stitches were used to bring the deep surfaces together, and the wound healed nicely by first intention. The stitches were removed on January 4th, but two days later the patient sat upon a vessel to have his bowels moved, and the cicatrix gave way. I at once put in a couple of deep sutures, and was fortunate enough to secure healing by first intention a second time.

Cataphoresis was resumed on January 24th, 1898, at which time the cicatrix was somewhat thickened. I now placed the positive sponge electrode, with the cotton saturated with Donovan's solution, near the cicatrix, while that connected with the negative pole was placed at some distance, and so that the direction of the current was through the former site of disease. This was repeated every second day, each seance lasting ten minutes. The cicatrix gradually assumed a more normal appearance, and since that time we have had no sign of a recurrence.

In May, 1898, I sent to Dr. Cullen, of Johns Hopkins Hospital, portions of the fifth, sixth and seventh recurrences for examination, and he pronounced the case adeno-carcinoma.

Since the last operation cataphoresis has been persevered with, applications being made twice a week, and the internal medication has been continued intermittently, the patient meanwhile pursuing his usual occupation. At the present

time he is in excellent health, cicatrices are all perfectly normal, and there is not the least sign of a recurrence though almost eighteen months have elapsed.

In a letter which I received from Dr. Gaston in April last, he informed me that the treatment of his patient had three months previously been suspended, and the boy was entirely free from any sign of disease; also, that since his report of this case he has had under observation some half-dozen others in which similar treatment was adopted, with, in some instances at least, most gratifying results.

Dr. G. Betton Massey, of Philadelphia, in a paper read before the American Medical Association, and afterwards published in the *Medical Record* of July 31st, 1897, gave the results of his experience in a series of eight cases of malignant disease tested by him up to that time by cataphoresis. Of these, six were carcinomatous and two sarcomatous. His summary of results was: two cured, two apparently cured, two benefited, of which one was hopeful, and two failures.

While, of course, it is too soon to speak of a cure having been effected in my case, the patient not having passed the three-year limit, yet I think it must be conceded that, taking into consideration the very malignant nature of the disease, as evidenced by the rapid recurrences and quick growth of the tumor, his condition to-day is in marked contrast with that when this method of treatment was adopted. I cannot, however, give all the credit to the adoption of cataphoresis and the administration of arsenic as I am convinced that we should have failed but for the use of the knife. On the other hand, I feel quite sure that the knife alone would not have given us the result we have attained, and this leads me to advocate as strongly as I can the combination of all the means at our command in combating this deadly form of disease.

Dr. Massey has in some cases destroyed the new growth by mercuric cataphoresis at a single application, leaving an open wound to fill in by granulation, but this could not have been done in my case without destroying the urethra, and it seems to me more rational to remove with the knife, getting rapid union, and reducing the process of granulation to a minimum, then to follow the operation by cataphoresis, as I have done, though I believe this is the first case reported in which such a course has been pursued.

In conclusion, I wish to say that my experience in this case would lead me to make the following suggestions:

(1) Electrolysis and cataphoresis, together with the internal administration of arsenic, are worthy of further trial.

(2) Not being incompatible with operative or any other plan of treatment, cataphoresis may be judiciously combined with

any other method in the treatment of a case in which success is not assured by that other method.

(3) No case, either of sarcoma or of carcinoma, should be abandoned as hopeless until the effect of this method has been tried.

(4) Removal of even a portion of the diseased tissue by the knife is indicated in any case in which rapid healing of the wound can be expected, thus lessening the work to be accomplished by electricity, and thereby hastening the cure.

(5) In such operations the greatest precautions should be observed in order to minimize the process of granulation and secure rapid healing, ligatures being avoided if possible.

(6) By an early recourse to cataphoresis recurrences may be prevented in many operable cases.

(7) If good results have been secured in cases otherwise hopeless, and in which this treatment has been adopted only after several months' trial and failure by other methods, surely much more may be expected if given a fair trial in a wider field and in cases in which the system has not already been injuriously affected.

MEDICINE IN GÖTTINGEN.

BY THOMAS McCRAE, M.B.

References to German methods and work are now so frequent that much interest is felt when the opportunity comes to study them personally. Medical work in Göttingen may be taken as fairly typical of that in the smaller places. It is a place of about 30,000 population, and the University, with over 1,000 students, is a very large factor. Work in Berlin or Vienna, of course, differs widely from that in the smaller places. For the latter it is claimed that a great advantage is the chance of personal contact between the professor and student. It has to be kept in mind that in Germany much work comes from cities where there is no teaching body, and from men who do not hold university positions. This is especially true of pathology.

The number of medical students in Göttingen was about 250. The faculty have a complete set of comparatively new buildings for the final branches. The primary subjects are taught in an older part of the University. The hospital buildings are situated in large grounds, there being three large separate buildings for Medicine, Surgery, Midwifery and Gynecology. Each of these buildings contains about 100 beds; they have complete equipment, and numerous rooms for microscopical and bacteriological work, etc. There are also isolated buildings for infectious diseases and septic cases. This would seem a large number of beds for a small place, but the country round is so thickly populated, and patients come in from such distances, that the beds were always full. The hospital itself is spoken of as the "Klinik." They contain no rooms corresponding to our private wards. These are found in what is termed the "Privatklinik." A fourth building in the hospital grounds was the Pathological Institute. All these buildings were quite separate from the others, and each was under the charge of the professor of the department, who is called the "Director."

Some reference to the general course of study may be of interest. There are two terms in each year which are called "Semesters." The winter semester is from the middle of October to the middle of February, the summer one from the middle of April to the middle of August. This gives eight months' work a year, but, as the work begins late and stops rather before the end of the term, probably seven months is about the average time. The student has to spend at least eight semesters in some university. They all go to at least two different ones, and so get the advantage of different men

and methods. They can also, through this, hear the most celebrated men on various subjects. At the end of the fourth semester, they have an examination somewhat like our primary. To take their degree they must present a dissertation on some particular subject—Surgery, for example—and be examined orally on four others—for example, Anatomy, Pathology, Pharmacology and Jurisprudence. Considerable latitude is allowed the students in regard to the order in which their work is taken. Thus, in the class in Clinical Medicine, corresponding to our final year, were men who had not yet taken their course in Materia Medica, and who knew absolutely nothing of drugs. To one of these, who knew nothing of either quinine or arnica, Professor Ebstein gave the very sage advice: "You must at least know the drugs that your patients do." The man who desires to reduce the number of lectures in Medicine would find an opportunity for missionary work there. Many of the students began lectures at 6 a.m., and continued till 8 p.m., with only an hour for lunch. The course of lectures in Medicine was given at 7 a.m. Some Toronto students used to think that 8.30 a.m. was unnecessarily early,

The work done in the Pathological Laboratory may be spoken of in some detail. Professor Orth is at the head, and has complete charge of his department. He has two assistants, who have university appointments and are known as the first and second assistants. Dr. Aschoff, the first assistant, has been about seven years in Göttingen, and has done excellent work. Then, in addition, there are a number of men who are termed "Volunteer Assistants." These are usually recent graduates, who spend one or two years in this way before beginning practice. They spend all their time in the laboratory, and are, of course, under the orders and direction of the professor. There were seven of these working under Professor Orth during this summer. The secret of much of the laborious and complete work coming from German laboratories lies in this. It can be seen how much can be done by these men, who are under absolute control and are ready to undertake anything ordered by the chief.

As to the teaching in Pathology. Five days a week Professor Orth gave a lecture—on General Pathology in one semester, and on Special in the next. These were abundantly illustrated by experiments and specimens, both gross and microscopical. On two afternoons a week there was laboratory work for three hours. During the first hour, Professor Orth gave a course on diagnosis from the fresh gross material. Each member of a class of perhaps twenty-five was given a specimen which he examined for some minutes. Then the class was called together, the organs of each case going together, and the whole gone

over by Professor Orth. Every man was questioned about his specimen, the rest of the class, of course, looking on. Professor Orth placed great importance on inspection, and the man who used his fingers too much was always checked by the saying, "*Oculis non manibus.*" It will be seen that a large amount of material would be required for this, and more than could be furnished locally. They have an excellent system of obtaining material from larger cities, such as Berlin and Bremen. By this, many rare conditions were seen. After this course, the work in Pathological Histology was held for two hours. The subject for the day was first spoken on, and then the sections were mounted and examined.

There were two minor courses given. One was given by Dr. Aschoff. The students were taken in small groups, given instruction in the doing of sections, which they afterwards did themselves, and in the various diseased appearances. A course on diagnosis from fresh material was given by Dr. Bencke. Specimens were seen in the gross; then teased specimens, or free-hand sections, were made by the student; and, lastly, cut sections were examined unstained and, in some cases, stained also. In this way histological and gross appearances were associated. One is impressed by the importance laid on the gross appearance, and on the immediate examination of teased or scraped preparations. Professor Orth is a magnificent teacher. He makes his points very plain, and then is evidently a believer in "Repeat, repeat, repeat!"

In Medicine Professor Ebstein gave a lecture five days a week. This was at the hour of 7 a.m., and at 10.30 a clinical lecture was given, lasting till noon. On five days a week this was given in the amphitheatre, on Saturday morning the class being taken into the wards. Daily ward visits were not made. In these lectures the patients were wheeled in, and examined generally in bed. An average of two patients per day came before the class. A student was assigned to each case. He took the history and kept track of the case. By this, each man had three or four cases in the semester. Professor Ebstein usually took the history himself, and examined the patient, afterwards giving a clinical lecture. These were exceedingly good and practical. He evidently spoke from a large experience. The matter of treatment was always gone into, and that not only from the standpoint of the hospital patient, but also regarding the same case in private practice. Their therapeutics were usually very simple, and in no case was a complicated prescription ordered. After this clinical lecture the students might attend the outdoor department. Here there was ample material, of which the students made good use. In the afternoon there were limited classes in physical diagnosis, clinical microscopy, etc.

The students had comparatively little chance to follow cases from day to day on account of the few ward visits made. They considered—and rightly, too—that the best results with the large class they had, were to be got from a smaller number of cases seen in the amphitheatre. But one could not help feeling the advantage of a class being divided up into smaller groups. The teaching in the other clinical departments was much on the same lines. Through it all one was struck by the constant attempt to be practical. This was rather opposed to our perhaps too common idea of the German physician being only a laboratory worker.

Student Duelling.

There is another subject which, while hardly medical, still is of much interest; that is, the student duelling. This old custom is still very flourishing, and shows no sign of becoming extinct. The regular duels are fought between members of the various societies, and occupy the morning of one day per week. There are so many precautions taken that the danger of serious consequences is very slight. The combatants are very carefully prepared, so that only the head and face are uncovered, the eyes being protected by heavy iron goggles. Thick padding is wound around the neck, and the axillar and heart are covered by large pads. The swords have a long, light blade, with a very heavy handle. The sword-play is all from the wrist, and it is claimed that no blow can be struck sufficient to fracture the skull. The men stand very close to each other, and they are not allowed to move in the slightest. They begin with the swords high in the air, and, at the word, one sees the swords come down and hears them strike; after that it is impossible to see the blades. one can only hear them striking. As soon as one of the men is struck the seconds knock up the swords, and the damage is investigated. During each of these stops the blades of the swords are carefully wiped with antiseptic solutions and the cuts are mopped with the same. The actual fighting only occupies a few seconds, and this stop is usually much longer. In one duel, in which these were counted, the stops were thirty-one in number. Each fighting-time did not average more than five seconds, so that the actual fighting was under three minutes. This duel, with stops, went on for twenty-five minutes. But it must be remembered that the fighting does not go on for all of this time. There is always a surgeon present, who frequently examines the men and stops the duel if there seems to be danger. The wounds are of every position and degree. The most common serious cut is one dividing the temporal artery. The parotid duct is

sometimes divided, with the establishment of a fistula. Keloid occasionally develops in the scars. The wounds are dressed in an adjoining room, and, as soon as they are dressed, the men are back in the hall eating and drinking. They take pride in being seen with all their dressings on, and, as iodoform was an invariable dressing, one was never far away from its smell on the more public streets.

The custom to us seems a barbarous one. To see the duels is in many ways not pleasant, but it is fascinating and one cannot help watching carefully. The men show absolutely no emotion of any kind, even if being cut to pieces, nor do they make a movement of any kind. It is certainly an exhibition of one type of courage, and that we must always admire.

Selected Article.

EPILEPSY OR FALLING SICKNESS.

BY C. W. SUCKLING, M.D., Lond., M.R.C.P.
Consulting Physician to The Queen's Hospital, Birmingham, etc.

From Dr. Suckling's valuable paper we publish his views on the treatment of this disease:

I believe that if every case was properly treated from the commencement, in the great majority of cases a cure would result. After the first fit the patient should be under medical superintendence for at least two years, and should take the bromides for that time, and should have the general treatment necessary. The difficulty is that the people have not the patience to continue the treatment.

Medicinal Treatment.—The bromides still hold the field as the most useful drugs. The prescription I usually give to an adult is the following:

℞ Potassii bromidi..... x gr.
Ammonii bromidi..... x gr.
Tinct. bellad..... x ℥.
Aq. menth. pip..... ʒ j.

Two tablespoonfuls to be taken on getting into bed, and one tablespoonful to be taken before rising in the morning.

This mixture may be increased or diminished as necessary. It is best to give the medicine in this way, for the patient does not feel the worry of taking it, as he would if he had to take it in the daytime. The medicine should be continued for at least two years after the fits have ceased. The dose has to be increased or diminished till the minimum quantity necessary to control the attacks is found. I have many times found that the omission of a single dose has caused an attack. The larger dose is best given at night so that its effects wear off towards the morning, and the patient is not sleepy all day. I have known patients take this medicine for years without the slightest ill effect. If there is heart disease the belladonna should be replaced by digitalis. If the bromide mixture fails, borax may be tried, or ergot. In very obstinate cases iodide of potassium should be tried. Bromide of strontium has not in my experience been so useful as the bromides of potassium and ammonium. Arsenic is of no use in epilepsy. I have found that the addition of this drug for acne will bring on the attacks, and iron also does the same. I have met with two or three cases of epilepsy with a slow pulse (forty to fifty) and have found the attacks cease with the bromides combined with trinitrin.

Where the bromides have failed I have also found the zinc salts useless. In some cases the addition of a small dose of tincture of opium instead of the belladonna has done good. I have asked a friend of mine, Dr. Rutherford of the City Asylum, Exeter, how he treats cases of status epilepticus, and he writes that he has only lost one case during the last few years; before that most of them died. He clears the bowels with a large enema, and then injects one-hundredth of a grain of hydrobromide of hyoscine. If the convulsions are not better one-fiftieth of a grain an hour later is injected. After that he is guided by the condition of the patient, but more than two injections are rarely needed. The hyoscine used is procured direct from Merck, of Darmstadt. Dr. Rutherford thinks that most of the failures are due to using the so-called tabloids, which he considers are quite untrustworthy.

The general treatment in epilepsy is of the greatest importance, and unless this is properly carried out medicinal treatment is useless.

In the attack the patient should not be interfered with, except that biting of the tongue should be prevented by a piece of india-rubber wrapped in a handkerchief, the head should be placed on one side, and care should be taken that the patient does not injure himself against articles of furniture, or turn over on his face. Epileptics should not be allowed to climb ladders, or to bathe, or even to get into a bath. On more than one occasion I have known death to occur in a bath. Especial care should be taken in cases of procursive epilepsy that the patient is kept on the ground floor. After an attack it is best to leave the patient alone and let him sleep. Care must be taken to empty the mouth with a spoon when an attack comes on at meal times.

A quiet life free from mental excitement is necessary, and cold sponging or the application of cold water to the head does good.

In all cases where there is a local aura it is important to abort the attack if possible by a ligature, or a handkerchief, or a piece of tape applied round the limb; and the attack may sometimes be aborted by forcibly opposing the contraction of the muscles that are first convulsed. I have occasionally met with patients who by a great effort of will-power have been able to stop the onset of a fit. Daily outdoor exercise, short of fatigue, and a moderate amount of mental work are necessary. It is a mistake to keep epileptic children altogether away from school. I find that they are much better for a few hours' instruction daily. At the same time their lessons must not be made a worry to them, and should be of moderate duration. Tea or coffee should be taken sparingly. Epileptic patients should be advised

not to marry, except in rare instances where the fits have only occurred at intervals of years. A young lady under my treatment had had no fits for two years, and then they began again. I discovered the cause to be that she had just become engaged to be married. An epileptic should not be allowed to carry a gun Dancing, swinging, and romping are bad. I have mentioned the case of a little boy who always has fits after eating walnuts. I saw recently a middle-aged man who occasionally had severe attacks of cramp in the legs and very painful extension of the great toe; he had to jump out of bed and rub the parts to get relief. I found that these attacks always followed his eating walnuts. Children who have had eclampsia in infancy, or who come of a neurotic family, should be brought up most carefully; they should be properly kept in order, and should be brought up for an occupation which is suitable to them, which shall be free as far as possible from worry or excitement. I cannot give an accurate estimate of the number of cases not cured, cured, relieved or not relieved, for in a large majority of cases the patient desired only an opinion and a prescription, and I did not see him again. But I am surprised at the number of cases that I have found to be cured at the end of some years. One gentleman whom I saw ten years ago recently brought his wife to see me; he had taken medicine for three years, but for seven years he had had no attacks. His attacks always occurred on getting out of bed in the morning. After the fits had ceased he had occasionally what he called shocks in the morning.—*Birmingham Medical Review.*

Progress of Medical Science.

MEDICINE.

IN CHARGE OF W. H. B. AIKINS, J. FERGUSON, T. McMAHON, H. J. HAMILTON, AND INGERSOLL OLMSTED.

The Nosology of the So-Called Functional Diseases.

Drs. Joseph Collins and Joseph Fraenkel, of New York, in *Med. Record*, June 17th, claim that these diseases are due to disturbances in the sympathetic nervous system, either as centrally represented in the brain and cord, in its ganglia, or in its peripheral nerves. The diseases that they include under the term functional for the purposes of their paper, are insanity without gross lesion, epilepsy in all its varieties, hysteria and allied conditions, the neurasthenic state, migraine, angio-neurotic edema, asthma, non-pancreatic diabetes mellitus and insipidus, Graves' disease, rheumatism, rheumatoid arthritis, arthritis deformans, arterio-capillary fibrosis, pathological obesity. They contend that these diseases are better explained on the basis of disease or derangement of the sympathetic nervous system than any other assumption. They all have a common feature of heredity, degenerating and influenced by surroundings. A striking feature of the functional diseases is their mode of onset. This is almost invariably insidious. The patient can give but little information as to the initial phenomena. In the case of organic, the reverse is the case. In these, the patient can tell in most cases the very day the trouble began, and point out the initial phenomena. In the case of functional disorders the patient's language is inadequate to describe all his ills; whereas, in the organic diseases, the patient states his case in a few words and usually makes light of his trouble. Then again, in the matter of treatment there is a feature in common to all the functional diseases. The patient's strength must be improved in all cases. The vegetative system must be attacked. This does not mean that the acidity of the blood in rheumatism should not be lessened, or that the nasal membrane should receive no attention in asthma; but behind all this there lies a weakness that requires long-continued toning.

The Treatment of Abdominal Palpitation.

Sir Willoughby Wade, *Brit. Med. Journal* for June 17th, relates his experience with the above affection. He expresses the opinion that it is caused by an excessive accumulation of

blood in the abdominal aorta. Along with this, there is high tension in this vessel. Pressure over the aorta elicits tenderness, sometimes extreme tenderness. The trouble is most frequent among women, though occasionally met with among men. There is usually some disease in some splanchnic viscus, though this may not be severe and may be intermittent. The splanchnic and somatic circulations are complementary of each other. The treatment that has been found of most value is the administration of nitroglycerine. A bedtime dose of 1-200 or 1-100 usually is sufficient.

Arterial Sclerosis and Cerebral Hemorrhage and Thrombosis.

Dr. Edward D. Fisher, Professor of Diseases of the Nervous System, New York University, in the *Medical Review of Reviews*, discusses the relation of arterial sclerosis to cerebral hemorrhage and thrombosis. He makes the statement that arterial sclerosis is a chronic, progressive disease, and that the great importance of the condition lies in the changes that take place in the areas of the organs affected by the impaired or altered circulation.

When the cerebral arteries become sclerosed, it is only a part of the general conditions existing in the other portions of the body. When the external arteries, as the radial, temporal, retinal, etc., show sclerosis, it may be safely assumed that those at the base of the brain are in a similar condition, as well as the smaller ones throughout the brain substances. Even though larger vessels of the brain show no change, the smaller ones rarely escape when there is evidence of sclerosis in other arteries.

In order that the circulation of any part may go on properly three conditions must exist: the normal elasticity, contractility and diameter of the vessels. The normal elasticity of the vessels, especially the larger ones, causes the blood to flow in an unbroken, continuous current through the small vessels, relieving them of the direct pressure from the heart's action. When the larger vessels at the base of the brain are calcareous, the blood flows with force and high pressure into the small arteries.

Loss in the contractility of the smaller arteries is of much importance. Through the vaso-motor mechanism, this contractility regulates the amount of blood supplied to the brain. By changes in the contractility of the arteries there may result a condition of hyperemia, or anemia, and the consequent changes in nutrition. Unless there be disease in the vessels it is impossible for the heart to produce a rupture of their walls, and thus give rise to a hemorrhage. In the early stages of the sclerosis, there may be many functional disturbances of the brain, such as vertigo, slight loss of power over a limb, or temporary aphasia, etc.

One of the earliest symptoms of the commencing sclerosis is tension of the radial pulse. This tension at first disappears after exercise that sets the heart acting more freely, and returns after rest and eating. The principal causes of this hardening of the arteries are: syphilis in the later stages; alcohol, which has a selective influence on the smaller arteries; gout, especially in the more latent forms; lead poisoning; overwork, more particularly mental overwork and worry; advancing age, as many elderly persons suffer from sclerosis of the arteries; and heredity, as in many instances sclerosis runs through several generations. It is a disputed point how far chronic interstitial nephritis is a cause. It is more likely that the disease in the kidneys and the arterio-sclerosis are parts of a common degeneration.

The premonitory symptoms are the same, whether the case ends as a hemorrhage or a thrombosis. There may be an active or a passive hyperemia or an anemia. This may continue for months, or even years, before the vessel ruptures or becomes plugged. At this stage of the disease, the clinical picture becomes distinctive of the conditions of hemorrhage or thrombosis. In hemorrhage, where the blood effused into the brain substance is sufficient to cause cerebral compression, and this is usually the case, there is a sudden loss of consciousness, the breathing is labored and stertorous, the pulse full and bounding, the temperature at first lowered. In thrombosis the loss of consciousness is not so profound, the breathing at first is not labored, the patient can often describe the onset, often there is a gradual paralysis of the arm, leg, or loss of speech, which may pass into complete unconsciousness, with labored breathing. The pulse never shows the full, bounding, incompressible character of hemorrhage. The temperature at first is not affected.

The treatment of arterio-sclerosis is of the utmost importance. Many of these cases have consumed a good deal of alcohol and have lived sedentary lives. It is necessary to lay down strict rules on these subjects. It is not well to enforce total abstinence. Moderation is the safest course. Nor is it wise to change the sedentary habits into too active a life. Violent exercise, either in walking, rowing, cycling, or horseback, must be forbidden. A mixed meat and vegetable diet is the best.

In the early stage of arterio-sclerosis, hydrotherapy is very useful. Cold applications contract the arterioles at first, to be followed by dilatation. A warm bath, by dilating the vessels, may induce good sleep in these cases. When the sclerosis is far advanced, cold bathing is often dangerous. The tepid bath should then be taken.

When the tension is high 1-200 nitroglycerine is very useful. Potassium iodide in doses of gr. v. three times a day for a long time is of the utmost importance. Free movement of the bowels

by laxatives relieves the whole vascular system. These patients should drink a quart of water daily.

The Treatment of Sleeplessness.

Dr. John B. Bradbury, in his Croonian lectures (*Brit. Med. Jour.*, July 15th), remarks that the treatment of insomnia often resolves itself in a study of the causes. First, there are the irritative causes, as pain and uneasiness, such as children teething, or the presence of worms. Eye-strain or eczema keeps many an adult awake. Then we have the toxic causes, as alcohol, tobacco, the poisons of febrile diseases, conditions present in g[illegible] and rheumatism, and the toxines left in the system through bad circulation, kidney diseases, etc. Further, there are the mutual causes of grief, worry, shock and anxiety. There is usually in these cases a nervous temperament. There are also cases of insomnia due to change of habits and mode of life, such as late dinners, high altitudes, changing from day to night duty, or *vice versa*. No treatment of insomnia can be successful that is not deduced from a study of causes. But even though the causes have been sought out and removed, sleep may not return. The cells of the brain have become irritable. In mild cases, try bromides first. Paraldehyde is one of the best hypnotics. Chloramide is good and safer than chloral. Sulphonal is the best of the sulphones.

Tetanus Treated with Antitoxine.

Dr. A. de Yoanna, Brooklyn, reports in *Medical Record*, July 29th, a case of tetanus with severe spasms on the muscles of the jaws, neck, pharynx and larynx. The pulse was 120, temperature 102, and respirations 36. There was sore on one finger, discharging a greenish pus. The half of a nail was removed, and the wound properly dressed. During the afternoon three injections of antitoxine of 20 c.c. each were given—one in the arm, one in the shoulder, and the third in the back. Next day the pulse was 90, and the temperature and respirations normal. The antitoxine was continued for three days at the rate of 40 c.c. daily. The patient improved rapidly, and in three days could go from one part of the room to another, and partake of liquid nourishment freely. The injections were kept up for fifteen days altogether, and a total of 280 c.c. administered. The case did exceedingly well. The tetanus came on February 17th, and he returned to his work on April 15th.

Pneumonia in the Aged.

Dr. Robert H. Babcock, in *Jour. Amer. Med. Assn.*, August 19th, claims that the aged suffering from pneumonia require

and bear large doses of strychnine. Alcohol should be given in small and frequent doses, and ammonia is helpful, and should be administered often. Other than the above, as little medicine as possible, for fear of upsetting the stomach. The food should be liquid, and nothing suits better than milk and beef juice. The kidneys are apt to fail, and these nutriments favor these organs.

SURGERY.

IN CHARGE OF EDMUND E. KING, HERBERT A. BRUCE AND L. M. SWEETNAM.

First-aid Package in Military Surgery.

N. Senn emphasizes the following: (1) First-aid packages are indispensable on the battlefield in modern warfare. (2) The first-aid dressing must be sufficiently compact and light to be carried in the skirt of the uniform, or on the inner surface of the cartridge or sword belt, to be of no inconvenience to the soldier or in conflict with military regulations. (3) The Esmarch triangular bandage is of great value in the school of instruction, but in the first-aid package is inferior to the gauze bandage. (4) The package must contain in a waxed antiseptic envelope an antiseptic powder, such as boro-salicylic powder, two sterilized safety-pins wrapped in tin-foil, and between this package and the outside impermeable cover two strips of adhesive plaster one inch wide and eight inches long. (5) The first-aid dressing must be applied as soon as possible after the receipt of the injury, a part of the field-service which can be safely intrusted to competent hospital-corps men. (6) The first-aid dressing, if employed behind the firing line, should be applied without removal of the clothing over the injured part, and fastened to the surface of the skin with strips of rubber adhesive plaster, the bandage being applied over and not under the clothing. (7) The first-aid dressing must be dry, and should remain so by dispensing with an impermeable cover over it, so as not to interfere with free evaporation of wound section. (8) The first-aid dressing should not be disturbed unnecessarily, but any defects should be corrected at the first dressing-station.—*Phila. Med. Jour.*

A New Method of Reduction in Separation of the Lower Epiphysis of the Femur.

Hutchinson and Barnard recommend the following method of reduction in cases of separation of the lower epiphysis of the femur: Under complete anesthesia an assistant makes steady but strong traction upon the tibia in the line of the

limb. This overcomes the upward pull of the quadriceps extensor and brings the epiphysis down to the line of separation. The operator then clasps his hands beneath the lower thigh, and draws it steadily upward, gradually flexing the knee and hip-joint, while the assistant still keeps up the traction on the leg. This causes the epiphysis to move back upon the fractured surface of the diaphysis until it has reached its normal position, and further movement is prevented by the periosteum coming into tight contact with the anterior surface of the femur. A bandage is then applied around the thigh and ankle, fixing the knee at an angle of about 60°. The limb is laid on its outer side on a pillow, and an ice-bag can conveniently rest upon the front of the knee. After fourteen days the limb can be extended, under gas if necessary, and put up in plaster in a position about 30° short of the straight line. The patient can then go about on crutches. The plaster remains on for from a fortnight to three weeks, and a little massage restores the movements of the joint. Four illustrative cases treated by the method described are reported, and the following conclusions are expressed: (1) Separation of the lower epiphysis of the femur is a serious injury, and when compound, is attended with a high mortality. (2) In the extended position of the knee, even with an anesthetic, reduction of the fragment is very difficult, if not impossible. (3) When the epiphysis is not reduced, the patient is laid up for about three months, and is lame for about six months, while the end of the diaphysis frequently requires removal by operation. Shortening of the limb, and secondary curves in the spine, always follow. (4) Nevertheless, the ultimate result in most cases in which recovery at all takes place is good. The articular surface of femur gradually grows in a useful position. (5) With the method of full flexion, reduction is always easy, the treatment is short, and it is the rule to obtain perfect movement in the knee without shortening or deformity of the leg.—*Lancet.*

OBSTETRICS AND GYNECOLOGY.

IN CHARGE OF ADAM H. WRIGHT, JAMES F. W. ROSS, ALBERT A. MACDONALD, H. C. SCADDING AND R. C. McILWRAITH.

Chronic Valvular Disease in Pregnancy.

Jess (*Münch. med. Woch.*, October 4th and 11th, 1898) bases his remarks on twenty-nine cases observed in the Kiel medical polyclinic. A slight hypertrophy of the heart muscle during pregnancy is now very generally admitted. A diseased heart in which the compensatory hypertrophy has been carried to its furthest point is not in a position to overcome the increased resistance to the circulation present in pregnancy, and hence dilatation occurs. The dangers encountered during parturition are due to (1) the pains, (2) the mental excitement, and (3) the emptying of the uterus with the consequent fall in blood pressure may eventually lead to edema of the lungs and death. Of the twenty-nine cases, twenty-three were examples of mitral disease (mostly stenosis), three of aortic disease, and three of combined mitral and aortic disease. From a study of these cases it is obvious that many women with heart disease can get over the dangers of child-bearing. There was only one fatal case in the twenty-nine, and the total number of births was 114. Jess then analyses the recorded cases. Here the death-rate is much higher, because only the severest cases would be admitted into hospital. Leyden says that 40 per cent. of severe cases of heart disease in women die as a result of child-bearing. In three of the author's cases similar symptoms developed to those seen in the fatal case, but they passed off. In one case symptoms of disturbed compensation occurred in each of ten pregnancies, but they were really only threatening after the last pregnancy. In three cases symptoms only appeared in the fourth pregnancy, and in another two cases in the sixth pregnancy or later. In three cases the patients even said they were better during pregnancy. Child-bearing is borne almost as well by those with perfectly compensated heart disease as by the healthy, and this was so in sixteen of the author's cases. His figures also show that abortion is relatively common in those with heart disease. Thus, the author concludes that in slight and well-compensated heart disease childbirth is usually well borne. After repeated pregnancies symptoms may arise. In severe uncompensated valvular lesions, and especially mitral stenosis, child-bearing is harmful. The author has not seen any special ill effects in slight aortic disease. He does not agree that marriage must

be unconditionally forbidden in heart disease. Where symptoms of valvular disease have existed for some years, marriage must be forbidden, and especially also in women who have to work. The author finally makes some remarks on treatment, and draws attention to the care which must be exercised during parturition in these cases.—*Epitome Brit. Med. Jour.*

[We believe that the percentage of deaths from this cause that is given in text-books on obstetrics is too high. Osler in his "Practice of Medicine" says, under the section on "Prognosis in Valvular Disease": "Pregnancy and parturition are disturbing factors, but are, I think, less serious than some writers would have us believe." He also cites a case of a woman with mitral insufficiency who bore eleven children without injury to to the heart.]

Case of Vesicular Mole.

Dr. Carl E. Black, of Jacksonville, Ill. (*Medical Fortnightly* for July), reports an interesting case of vesicular mole. After concluding an account of a previous operation on the patient for the fixation of a floating kidney, the doctor continues:

"Supposing that after all an abortion was pending, I visited the patient at once. To my great astonishment I found my patient almost exsanguinated. The tissues all about the vaginal walls, vulva and rectum, were infiltrated and distended with blood, and the vaginal inlet almost obliterated by this infiltration. I was utterly unable to find the cervix. On examination all that I could discern was a ragged torn opening in the left vaginal wall, from which profuse hemorrhage was taking place Patient had no pains, nor had she any during the night. I tamponed this ragged opening with strips of gauze to stop the hemorrhage, and used general measures to support the patient. My supposition at the time was that we had an extra-uterine pregnancy which had ruptured downward instead of upward. After the tamponing the patient rapidly grew worse, until the pulse was imperceptible at the wrist, and the heart-beat could be counted with a phonendoscope at 170. Seeing that the patient would not survive long without more was done, and believing that there was intra-abdominal hemorrhage, as well as vaginal, the patient was taken to the operating-room, and abdomen hurriedly cleansed and opened by a median incision. The uterus was found normally pregnant, and the tubes and ovaries were normal. One point of difference from normal pregnancy was that the uterus seemed softer than usual.

"After closing the abdomen and putting on dressings, the packing was taken out of the vaginal rent. This opening was enlarged and the left uterine artery was ligated, thus putting

an end finally to our hemorrhage. After the infiltrated blood in tissues had somewhat subsided the true nature of our case became plain. Some small vesicles came out through the ragged opening, which showed the true character of the trouble. However, the cervix was normal and firmly closed. There were no uterine pains, there was no discharge, nor had there been at any time, either serous or bloody, and there was no way in which I could ascertain that normal pregnancy was not co-existent with degeneration of the chorion.

"What had happened was the invasion of the uterine wall by the vesicular degeneration, and its perforation into the tissues and then into the vagina.

"After checking the hemorrhage, and making free use of normal salt solution in the tissues, the patient rallied and rapidly recovered.

"The rent in the vaginal wall healed quickly and completely, although after each dressing, for a number of days, several vesicles would be brought out. At the end of five weeks the patient was able to walk about the hospital, and returned to her home, which was near by, where she remained five days, when she began to have uterine pains, accompanied by some discharge of blood. She returned at once to the hospital, but delivery did not take place for nearly two weeks. After she was put to bed and kept quiet, the pain subsided, and it seemed as though she might be going on to full term. However, on February 25th, 1898, five and one-half months after conception, uterine pains became strong, and she was delivered spontaneously of very large vesicular mole, accompanied by no semblance of fetal tissue.

"Examination of the interior of the uterus showed the whole wall to have been more or less invaded by the degeneration. While the mass discharged seemed complete in itself it did not bring away all the vesicular tissue. A few vesicles came away each day in changing the uterine packing, and it was necessary to thoroughly curette and apply iodine several times before anything approaching a normal condition of the uterine lining was obtained. There was some slight infection, and it required three months of almost daily cleansing and packings with gauze to bring the uterus back to anything like a normal condition; and, for a time, I was of the opinion that it could never be accomplished, and that the safest procedure would be to remove the uterus. However, the daily treatments were persisted in until finally, after four months, the uterus became comparatively normal."

One year following the date of delivery of the mole the patient again became pregnant. The result of this pregnancy is not yet reported. Dr. Black concludes his paper by a very

instructive *résumé* of the symptoms in one hundred cases collected from literature.

Secondary Operations for Rupture of the Perineum.

Kholmogoroff advises the performance of secondary operations for ruptured perineum during the puerperal period, that is, from the second to the twentieth day after labor. He performed the operation in twenty-five cases during that time, and in all cases obtained primary union. There is no danger of lochial infection of the raw surfaces, if suitable precautions are taken. The operation is undertaken in those cases where immediate suturing after labor has not been done, or where, if done, has not been successful. The patient's vagina is carefully washed out with corrosive sublimate solution and a tampon of sublimate gauze inserted to take up the discharge. The tampon is removed just before the operation, the vagina again syringed out, and a fresh tampon inserted, which remains *in situ* for twenty-four hours. This prevents the lochia coming in contact with the wound until some adhesion of the raw surfaces has already taken place. After this the tampon is unnecessary, and careful vaginal douching is sufficient. The operation consists in first marking out the extent of the raw surface, and then removing the granulation or cicatricial tissue with a sharp spoon within that limit. The sutures are then inserted in the usual way, and the raw surfaces brought together. The sutures are removed on the seventh day. The temperature generally remains normal after the operation, but there may be a slight rise. In this way many a perineum can be repaired during the time the patient is under observation after labor, and this does away with the necessity of her applying for advice in six weeks afterwards, which many of them fail to do through either fear or neglect.—*British Med. Jour.*

[At the Burnside a case in which the immediate operation was not successful, was operated on ten days after labor in the following manner: The two healthy granulating surfaces were simply drawn together with sutures, without any "freshening up," and good union obtained.]

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF J. CAVEN, H. B. ANDERSON AND J. AMYOT.

Cancer.

Bra states that he has isolated from carcinoma in the human being, fungi which, when injected into animals, gave rise to tumors; these, he said, showed the typical structure of fibro-sarcoma and carcinoma when examined microscopically.—*Presse Medicale*, February 22nd, 1899.

Woillez's Disease (Idiopathic Pulmonary Congestion).

Carriére (*Rev. de Méd.*, January 10th, 1899) sums up his study of this disease as follows:

"Woillez's disease appears to be produced by microbian agencies belonging to various species. The chief cause, however, is without doubt the Talamon-Fraenkel pneumococcus, other microbes capable of inducing the disease being the staphylococcus and streptococcus. In every case the virulence of these microbes is strongly attenuated. In cultures from this disease the pneumococcus loses its virulence on the fourth day.

"When the pneumococcus is the cause the début of the disease is always sudden and violent. Fever is high and the intensity of other symptoms especially marked.

"The natural virulence of the pneumococcus produces pneumonia; when this natural virulence is attenuated we get Woillez's disease.

"The frequency of idiopathic pulmonary congestion is about the same as that of pneumonia and pleurisy, and similar variations are noted from year to year.

"Men are more frequently affected than are women, and especially men who are naturally subject to exposure or to rapid changes of temperature. The maximum decade for frequency is between the ages of twenty and thirty."—*Med. Rev. of Revs.*, June 25th, 1899.

Co-existence of Carcinoma and Tuberculosis of the Mammary Glands.

A. S. Warthim, Instructor in Pathology, University of Michigan, records in the *Amer. Jour. of Medical Sciences*, July, two interesting cases of co-existence of carcinoma and tubercle in the mammary gland. The old doctrine—Roketansky's—that tubercle and carcinoma never were found together, has been abundantly disproven, even though recorded cases are not very numerous as yet. It has been shown that the diseases may not only co-exist in the same individual but in

the same organ. Omitting other considerations in this connection, the question of the relationship of the conditions is one that immediately obtrudes itself. Which disease is primary? Does tubercle cause cancer, or does cancer give an opportunity to tubercle?

Warthim quotes the conclusions of Lubarsch, who has made some study of the question, as follows:

1. The combination is purely accidental. Half the cases are in this category.

2. Carcinoma may be metastatic in or near tubercular lesions, old or recent. Not rare.

3. A fresh infection of tubercle bacilli may occur in well-developed carcinoma. Rare.

4. Carcinoma may arise in a progressive chronic tuberculosis the tubercular process acting as a predisposing trauma.

5. Both conditions may possibly arise at once. No proof.

Ribbert holds that, in some cases, tubercle may be the exciting cause of carcinoma. (*Cf.* No. 4 of Lubarsch.)

Warthim, after study of his two cases, thinks that the first gives support to Ribbert's view as quoted above, and that his Case No. 2 falls into Lubarsch's category No. 3.

The Diagnosis of Tubercle Bacilli in Pleuritic Fluid.

Besançon and Griffon (*Lancet*, April 1st, 1899) have just made known a discovery which promises to be of the greatest use in the diagnosis of the tubercle bacillus in cases where direct microscopical examination is of no avail, as, for instance, in the effusions of pleurisy. Until now the accepted method has been to inject some of the suspected fluids into the peritoneal cavity of a guinea-pig, but this procedure often failed to give any definite result even when the fluid came from a patient undoubtedly the subject of tubercle. Possibly the serum itself possessed immunizing qualities, or else the microbes were in so very dilute a solution that there were too few in the small quantity of fluid injected to affect the animal. The cultivation method would have given good results if the operator could have been certain of always using a cultivation medium of a constant nature. Such a medium, however, was not known until Besançon and Griffon took to using agar-agar (*gélose*) mixed with blood. Pus from a chronic abscess connected with the ribs, cultivated after this method, gave at the end of ten days bacilli visible under the microscope. Pleuritic fluid from two patients, cultivated in the same way, gave colonies visible to the naked eye at the end of twenty-eight days. Bacilli from these under the microscope are absolutely characteristic. As a control experiment two guinea-pigs were inoculated at the same time with the same fluid, and one of these animals, which was

killed at the end of twenty-eight days, showed no visible lesion due to experimental tuberculosis. In this case, then, the presence of the tubercle bacilli could not have been demonstrated without the culture method, and it is evident that this mode of research will be very useful. By it observers will be able to diagnose the presence or absence of the tubercle bacilli in various effusions, such as those into the joints, the tunica vaginalis, the peritoneum, or the meninges.—*Univ. Med. Mag.*, July, 1899.

The Micro-organism of Scarlet Fever.

William J. Class (*Chicago Medical Recorder*, May, 1899, p. 373), referring to the unsatisfactory results of the investigations of Kleim, of Crajkowski, and of other careful observers in isolating a specific micro-organism of scarlatina, concluded that the fault lay with the culture media employed. After various failures he has succeeded in finding a medium on which he has been able almost invariably to obtain, both from the scales and from the throats of scarlatinal patients, the growth of an organism which presents such characteristic features, both in its morphology as well as in its growth, that he believes it to be the specific germ of scarlet fever.

It is a diplococcus resembling, as ordinarily seen on slides made from fresh cultures, a very large gonococcus. This biscuit-shaped appearance is best seen in specimens that have been but slightly stained. In these is also noted a transverse line running through each half of the organism, giving it the appearance of a tetrad. The size varies. It is always considerably larger than the ordinary pus microbe. Lancet-shaped forms, as occur in the pneumococcus, are never met; but streptococcus forms are occasionally, though rarely, observed, as are also single cocci. They have no capsule and show no spores. Specimens from pure cultures are satisfactorily stained by watery solutions of methylene-blue, by carbol-fuchsin, Bismarck brown, and Pitfield's flagellæ stain. They are decolorized by Gram's method, though not to the same extent as the gonococcus, the larger variety holding the stain somewhat better than the smaller.

The culture medium consists of glycerin-agar, to which is added about 5 per cent. by weight of black garden earth, previously sterilized by discontinuous heating. On this medium the scales of a scarlet fever patient are placed with a sterile platinum loop, and the tubes put in an incubator, the temperature of which is kept at about 35° C. Within forty-eight hours to one week, small, whitish-gray semi-transparent colonies appear along the track of inoculation and around the scale. On agar-agar, glycerin-agar, and gelatin there is no growth, and bouillon is not clouded. Milk does not appear to be affected, but the

organism apparently multiplies in it. On potatoes there is no growth.

Rabbits and guinea-pigs were not affected by subcutaneous injection of pure cultures, by scarification and inoculation of the wounds produced, and by intra-abdominal injection.

The germ described has been cultivated from the scales of about thirty cases of typical scarlatina, and has also been found in the throats of these patients and in cases of angina occurring in persons exposed to scarlet fever in whom no eruption appeared, and lastly in the throats of children in a family where one member had typical scarlatina, the children being in normal condition when the culture was made, but subsequently developing a typical rash, in the scales of which the same organism was found.—*Amer. Journal of Med. Sciences*, July, 1899.

Hypotoxicity of the Urine of Normal Pregnancy.

Labadie-Lagrave, Boix and Noé have carefully studied the urinary toxicity of the pregnant woman from the date of suppression of the menses up to several months after delivery; and in opposition to both the *a priori* view of the facts obtained by other investigators, they find that in the healthy woman pregnancy does not involve the production of autotoxic substances. Pregnancy means normally hypotoxicity, and when we do not obtain this lowering of toxicity, *i.e.*, when the coefficient is unchanged or increased, we have to beware of eclampsia and other results of self-poisoning. The results obtained by these investigators are so diametrically opposed to the teaching of other authorities that the entire subject of urinary toxicity of pregnancy should be disregarded by the practitioner until some agreement is reached as to behavior of urine in the normal pregnant woman. Some observers have stated that from the moment of suppression of the menses the urinary toxicity is increased; while our present authors maintain the contrary to such an extent that lessened toxicity of the urine unexplained by tuberculosis, hysteria or chlorosis, is held by them to be due to pregnancy. The present authors publish toxicity curves as documents of the scientific accuracy of their work, and it would seem that researches undertaken upon a sufficiently large material ought to readily solve this problem.—*Med. Rev. of Revs.*, July, 1899.

Bacillus Icteroides and Bacillus Cholerae Suis.

Reed and Carroll (*The Med. News*, April 29th, 1899, p. 513) in the course of a comparative study of bacillus X (Sternberg) and bacillus icteroides (Saranelli) also observed the effect of the intravenous injection in dogs of the bacillus coli communis and

the bacillus cholerae suis. They found that the same clinical symptoms—viz., vomiting, increased action of the bowels, and profound prostration—which are produced in dogs by the intravenous injection of B. icteroides are also brought about by a like inoculation of the hog-cholera bacillus. The anatomical changes were similar with both organisms, but in neither instance was the degree of fatty degeneration at all comparable with that present in the human liver in yellow fever. The results of inoculations of guinea-pigs, rabbits and pigeons with these organisms and the feeding of them to hogs were similar in both cases. An important point in their work was the observation that the serum of an animal immunized with B. icteroides had a marked agglutinative action on the hog-cholera bacillus. The cultural characteristics of the two organisms were almost identical. As a result of the striking similarity in the cultural characteristics of the two bacilli and of their pathogenic action on various animals, Reed and Carroll believe that the B. icteroides (Saranelli) is a variety of the hog-cholera bacillus, and should be considered only as a secondary invader in yellow fever. They find that the bacillus X (Sternberg) shows marked difference from the above-mentioned organisms, both as to its biological character and its pathological action toward animals. They are of the opinion that the bacillus X should be placed with the colon group.—*Amer. Jour. of Med. Sciences*, August, 1899.

Supra-arterial, Epicardial, Fibroid Nodules.

J. H. Mason Knox, jun. (from Johns Hopkins University Pathological Laboratory), in a paper published in the March (1899) number of the *Journal of Experimental Medicine*, describes a pathological condition of the arteries of the heart, which must be rare—so far, at least, as records go—since no previous description could be found by the author. Five cases have been seen in the Johns Hopkins Hospital *post-mortem* room during the last few months. The condition must be distinguished from the ordinary "milk spots," so commonly seen on the epicardium, and more especially from the nodose condition of arteries described by Kussmaul and Maier under the name of "periarteritis nodosa." The gross appearance of the vessels affected is characteristic: the nodules vary from tortuous, more or less uniform elevations upon the arteries, to whitish dots so few and small as to almost escape notice; the number of nodules may be such as to give the appearance of strings of beads, or they may be widely separated; the epicardium appears otherwise healthy; nodules do not encircle arteries, nor do they seem to have any relationship to the bifurcations of arteries, nor, in fact, to any one part of a vessel

rather than another. They occur on the vessels of the ventricles chiefly, but also on those of the auricles, and even those in the adventitia of the aorta. There is no tendency to aneurysmal dilatation observable. The microscopic appearances vary somewhat in different specimens in some details, although, on the whole, the morbid process is the same. The sections were made from coronary arteries. In most sections the intima shows little change, but in a few there is proliferation of intimal cells; in one case intimal changes are marked, though chiefly in the myocardial segment of the artery, *i.e.*, opposite to the fibroid nodules. The muscularis is in most cases unchanged; in a few sections it shows degenerative processes and even cell infiltration. Changes in the adventitia are slight and inconstant.

The fibroid nodules lie upon the vessels within the epicardium, being seated primarily in the connective tissue between the endothelium and the delicate layer of elastic fibres which rest upon the main layer of loose, vascular, connective tissue containing the epicardial fat: in other words, in the same position as that occupied by the milky spots. The appearance on cross section is as though a compact mass of firm connective tissue, convex on its inner surface, were set upon the artery in the loose epicardial tissue. These nodules are, when formed, poor in cells. They are rarely observed upon veins, and bear no definite relation to endarteritis, though sometimes associated with it. The causation of the nodule formation is obscure.

Pyocyaneus Bacillemia.

In a short article in the *Amer. Jour. of Med. Sciences* for August, 1899, Brile and Libman review the previous records of this condition, and add a case of their own. Of a considerable number of cases reported but four are accepted by them as showing any proof that is at all convincing. Their own case makes the fifth. Of the five cases, in two only—Finkelstein's and their own—were cultures made from the blood during life. All cases recorded up to the present time are arranged under these heads: (1) Those in which the bacillus was found during life or *post mortem* in the gastro-intestinal canal, or in abscesses or exudates having a direct or indirect communication with the open air. (2) Those in which it was found during life in abscesses or exudates, not in direct communication with the open air. (3) Those in which there is claimed to have been an undoubted general invasion by the bacillus; in other words, in pyocyaneus bacillemia.

Editorials.

THE ABUSE OF MEDICAL CHARITY.

We have often directed attention to this subject, but it is not yet disposed of. The growth in the number of persons who obtain free medical and surgical treatment is enormous.

In the first place, it is very wrong that a patient who is much wealthier than the physician, or surgeon, in charge of his case, should be entitled to free attendance, simply because he elects to go to a public ward in a hospital. The fact that he enters a ward for which the weekly charge is $2.80, should not entitle him to free attendance. This is an outrage on the profession, and is putting the public wards to an improper use. We contend that, when public wards were opened and medical and surgical staffs appointed, it clearly was the intention that this was done in the interest only of those who entered as paupers. It was never intended that a patient in good circumstances could make use of these wards and claim free attendance because he did so. This is a complete perversion of the spirit in which public wards were founded. Charity is for the pauper—not for the pauper in spirit, the impostor, who desires to receive what he does not pay for.

Then comes the dispensary abuse. The community generally are able to earn enough money to obtain food and clothing. After the most careful inquiry, we are of the opinion that the great majority of those who go to the free dispensaries, could pay something for their attendance. Because this attendance is free, a great many go to these dispensaries who have very little the matter with them. More than this, they go from one charity to another, and obtain the advice of a number of physicians and surgeons. All this should, and could, be stopped. Such an abuse is not to be found in any other calling in life. It is just possible that things would be better if all the free dispensaries were closed, and let those who can pay for their attendance do so, and the really poor go to some physician known to them, and be treated in this way. We do not think there is a physician or surgeon

in the country who would not willingly prescribe for a poor person without the first thought about his fee. If dispensaries must exist, active steps should be taken to protect the general practitioners against the attempts of those who can pay, but desire to escape paying, by going to a free dispensary. The amount of service which medical men are giving to those who are not entitled to it, is annually very large, and, we are satisfied, is annually on the increase.

The movement on foot to lessen these abuses, both of hospitals and dispensaries, meets with our hearty approval.

DOMINION REGISTRATION.

Probably before this number has reached our readers, the question of medical registration in Canada will have been discussed at the meeting of the Canadian Medical Association. Dr. Thomas G. Roddick deserves much credit for his untiring efforts to bring about a modification of the system now in vogue in this country. In his address to the graduating class in medicine of McGill University (*Montreal Medical Journal*, August) he makes some reference to the subject, and gives certain advice to the graduates, from which we will quote as follows, for the benefit of recent graduates from other universities: "As you are aware, a movement is on foot to establish a Dominion Medical Council, whose license to practise shall be general throughout the Dominion. In view of the possibility of some such scheme becoming law within the next year, I should strongly advise those of you who have no fixed plans to keep up your studies, with a view to passing the examination before that Board in the near future. In the event of a failure of the measure, and, in any case, I wish to impress upon you the advisability of taking out your provincial license, as you originally intended. This will not involve any additional cost. You can, however, do much towards the success of the scheme by advocating it in the various parts of Canada where your homes are situated, or where you settle in practice. Make it plain that there is no intention on the part of the promoters of the measure to interfere in any way with the rights at present enjoyed by the Provincial Licensing Boards. Those, who so

desire, will continue as before, to examine and issue licenses to practise in their own province. The main objects of the movement are to improve medical education in Canada, to obtain reciprocity with Great Britain, to open the whole Dominion, and, indeed, the Empire, to deserving men, and to break down the barriers which at present exist between the various provinces. Any one of these is, I think, deserving of your support. We shall, therefore, look to you to lend us a helping hand."

OUR SUMMER RESORTS.

For many years it has been the fashion for a large portion of our community to take a holiday, especially during the months of July and August. These months are chosen chiefly as a matter of convenience, because it is the school holiday season for the children. As far as Toronto is concerned, it is probable that the Muskoka District is the most popular place for a summer outing. Some say that the air of Muskoka is so healthful that they derive great benefit from a visit there on that account. That is probably true, but the same people can find air quite as good and quite as healthful one mile north or one mile east of Toronto.

It is really not change of air that we want so much as change of scene and change of occupation. We may get as much benefit while living in a tent at Balmy Beach or Long Branch as we could while more fashionably housed in some palace hotel (there is none such there at present, by the way) in the Muskoka region. We might, as a fact, do much better in the tent than in the hotel. We have no desire, however, to discuss the relative merits of a tent and a hotel. We should allow our own patients to make their own choice in such matters.

We should, however, be solicitous respecting the sanitary condition of the places chosen for the summer outing. It is a sad thing to have children, who have left their homes well, brought back with disease contracted in the camp or the hotel. People once thought that anything in Muskoka would answer for their families; but, happily, that time has gone. Partly as a consequence of the demands of their patrons the proprietors

of summer hotels and boarding houses in Muskoka have in recent years greatly improved their premises in a sanitary way. Dr. P. H. Bryce, the Secretary of the Provincial Board of Health, has done much during the last few years in the way of educating the Muskoka folk in such matters. We are glad to be able to say that, as a general rule, the sanitary condition of all hotels in Muskoka is good. Ten years ago, on the other hand, we would have been compelled to say that the sanitary condition in many, if not the majority, was bad.

UNIVERSITY RESIDENCE.

About ten years ago, when a proposal was made to abolish the College Residence of the University of Toronto, a strong protest against such action was made by Sir Daniel Wilson on behalf of himself, the Chancellor, the Vice-Chancellor, the Faculties of the University and University College, the Board of Trustees, the subscribers to the fund for the restoration of the University, the great body of graduates, and many others whose sons had lived in Residence. There seemed then to be such a general consensus of feeling in favor of retaining the Residence that the Government decided not to interfere.

Recently another proposal has been made to abolish the Residence; and, strange to say, the initiative has been taken by the College Council. The following reasons have been given by the President of the University and the Minister of Education: The Residence has not during the last few years been self-sustaining; out of eight hundred students or more only twenty have been in residence; the rooms are out of repair, and it would take a large sum to make them habitable.

This very unsatisfactory condition of things calls for a radical change of some sort. Those who propose to abolish the Residence say that the portion of the University building which has been used for residential purposes should be converted into lecture rooms or laboratories. In 1887 the University architect investigated the matter, and reported that such a conversion would be so extensive that it would be better to pull down the whole structure and build anew. In referring

to this report Sir Daniel Wilson said: "But such a procedure involves the sacrifice of all the money expended in the erection of a residence without any equivalent advantage."

Without attempting to discuss the various phases of the question, we have only to say that the abolition of the College Residence would cause the deepest regret among the graduates of the University. Even on the grounds of economy we are inclined to agree with Mr. John King, that the best thing to do now is to renovate the present building so as to make it habitable. It would then attract a large number of students, and under proper management there would be no deficit. In fact, it might become a source of revenue, as it was in times past, as, for instance, under the *régime* of Professor Baker.

We learn that the Governors of the Toronto Western Hospital have secured a site of four acres on the corner of Bathurst and Nassau streets: and that active steps are now in progress to furnish the very best accommodation for a large number of patients.

Grace Hospital (formerly homœopathic) has been converted into a general, and, as a result of the conversion, the following appointments have been made on the staff: Medicine—Dr. W. Nattress, Dr. R. A. Pyne, Dr. R. A. Stevenson and Dr. A. Lynd. Surgery—Dr. G. P. Sylvester, Dr. J. H. Cotton and Dr. Holford Walker. Eye, Ear, Throat and Nose—Dr. Palmer. Obstetrics—Dr. J. H. Cotton. Bacteriology—Dr. Westman. Outdoor Department, Dr. J. T. Clark (secretary), Dr. D. W. McPherson, Dr. W. H. Harris, Dr. T. Coleman, Dr. W. J. O. Malloch and Dr. J. H. McConnell.

Personals.

Dr. Adam A. Beatty, of Toronto, was married in August to Miss Norris.

Dr. Arthur Jukes Johnson has returned with his family from the seaside.

Dr. Jerrold Ball, of Toronto, left for England July 9th. He will return shortly.

Dr. Clarence H. Sills, of Picton, spent a portion of the summer in London, England.

Dr. George A. Bingham, of Toronto, was married in August to Miss Emma Wilson.

Dr. W. P. Caven, of Toronto, is recovering from a mild attack of typhoid fever.

Dr. Allen Baines and Judge Morson left Toronto for the Pacific Coast, August 1st.

Dr. Thos. B. Fletcher, of St. John's Hospital, Baltimore, spent a few days in Toronto early in August.

Dr. Thos. McCrae spent the greater portion of the summer in Gottingen. He will return to Baltimore in September.

Dr. G. Sterling Ryerson, who spent a portion of the season with his family at his summer residence, Bobcaygeon, has returned to Toronto.

Dr. Chas. O'Reilly and Mr. Walter S. Lee left Toronto, August 3rd, for Winnipeg. From there Drs. O'Reilly and Baines went on to Vancouver, where they remained a few days, and then returned by way of Rossland.

Professor Wm. Osler, of Baltimore, has spent the greater portion of this summer with his family in a cottage in Dorsetshire, England. He, however, spent some time in London, and also attended the meeting of the British Medical Association at Portsmouth.

Obituary.

WILLIAM WELLS, M.B.

We have to announce with deep regret the death of one of our most promising young graduates, Dr. W. Wells, which occurred at Ailsa Craig, August 23rd, 1899. He was a son of Rev. Mr. Wells, Holland, Manitoba. He graduated from the University of Toronto last spring with high honors, being the gold medallist. He also held the Reeve Scholarship. A few weeks ago he was appointed house surgeon to St. Michael's Hospital, Toronto. He went to Ailsa Craig for a well-earned holiday, and while there contracted typhoid fever, complicated with pneumonia. He was generally recognized both by members of the Faculty and fellow-students as one of the University's most worthy and gifted students. His death has caused the deepest grief among his many friends.

THOMAS BENJAMIN DACK, B.A., M.D.

Dr. Thos. B. Dack, one of the best known physicians of the County of Simcoe, died at his home in Creemore, July 14th, 1899. He had a slight attack of paralysis last February, from the effect of which he never fully recovered, although he improved so much that he was able to attend to his practice for a time. About the end of June he was compelled to give up work on account of severe nervous prostration. From July 1st he failed somewhat rapidly, although there were no urgent symptoms indicating any serious organic lesions.

Dr. Dack was born in Ireland, and came to Canada when a boy. He took both an Arts and a Medical course in the University of Toronto, receiving B.A. in 1849, and M.B. in 1863. He had seen much of the world, and had a variety of experiences in the gold fields of Australia, among the Maori of New Zealand, in Brazil, and in an ocean steamer after graduating in medicine. After he grew tired of travelling he commenced practice in Toronto, where he remained for only a short time. He then went to Creemore, where he lived about thirty-five years. His practice was large, and he was highly respected. He took considerable interest in politics, and was a member of the Municipal Council for several years. He came from Cromwellian stock, and was a life-long Liberal. He was an Irish gentleman of the good old sort, a genial companion, a generous host, a charming man in all respects, and an excellent physician.

Book Reviews.

Pyorrhœa Alveolaris, and Its Relation to General Medicine. By JOHN FITZGERALD, L.D.S., Dental Surgeon to the Italian Hospital, and to the National Hospital for Diseases of the Heart and Paralysis, Soho Square. London: The Medical Publishing Company, Limited, 22½ Bartholomew Square.

This little volume of 57 pp. is beautifully gotten up as to the matters of paper, type, illustrations and binding. The reading-matter is excellent. The book contains a number of valuable formulæ for application to diseased and suppurating gums. The surgical treatment is carefully explained. The causes are given as tubercle, gout, syphilis, debility, and local gingivitis from irritation. The bad effects of pus in the mouth, and its constant absorption into the system through its mucous membrane and from the stomach are pointed out. Attention is given to the local action of the swallowed pus upon the stomach. The book merits a wide perusal.

The Mineral Waters of the United States and their Therapeutic Uses, with an account of the various mineral spring localities, their advantages as health resorts, means of access, etc. To which is added an appendix on potable waters. By JAMES K. COOK, A.M., M.D., Adjunct Professor of Clinical Medicine and Physical Diagnosis at the New York Post-Graduate Medical School; attending physician to the Post-Graduate Hospital; etc., etc. Lea Brothers & Co., New York and Philadelphia. 1899.

An octavo volume of 600 pp. should contain a good deal of information; and it can be truthfully said that such is the case with regard to this volume. It is full of information on the mineral waters found in the United States, their uses both for external and internal medication, the nature of the localities where the waters are found and the chemistry of these waters. It is really a handsome and very valuable work.

Over 1,000 Prescriptions or Favorite Formulæ of Various Teachers, Authors and Practising Physicians. The whole being carefully indexed, and including most of the newer remedies. Cloth, 300 pages, postpaid $1.00. The Illustrated Medical Journal Co., Publishers, Detroit, Mich.

This is the second edition of this handy manual, and is just from the press: it has nearly 100 pages of new matter added.

As the practical worth of this kind of a book consists in its having a handy and complete index, this book has it, for some 16 pages of small type are devoted to this object, and some of the lines have as many as 20 different references to as many different formulæ; this would go to show that there are 2,000 different prescriptions given in the volume. In other words, taking the price of the book into consideration ($1.00), it would argue that there are furnished some 20 different prescriptions for one cent. We notice that many of the newer remedies are among the prescriptions, thus bringing the treatment of many of the diseases down to date. Both old and new writers of both home and foreign countries are represented among its formulæ.

Blank pages are frequently introduced, so that a handy place is furnished for recording any new prescription that one might wish to preserve. The printed index will index all such pencilled additions, if care is taken to write them opposite a page with a formula for similar disease; this would then save the bother of indexing the pencilled additions.

Circumcision—Its Moral and Physical Necessities and Advantages.

Dr. A. W. Taylor, of Beverly, in an essay on this subject, said that the operation of circumcision was 3,797 years old, the first operation having been done on a person ninety-nine years old, and the next on his son of nineteen. The operation had evidently had its foundation in sound physiological reasons. There could be no doubt that the original divine decree had been intended as a sanitary precaution. Circumcision was the oldest of all surgical operations. Not all cases of congenital or inflammatory adhesions of the prepuce to the glans were continued to adult life, but circumcision and the removal of these adhesions contributed largely to the comfort of the individual. It was not necessary that the constriction should be complete or the prepuce narrow and long to give rise to severe nervous symptoms. The organ was exceedingly sensitive to mental or local irritation. Phimosis was responsible for a long series of formidable symptoms. The speaker was of the opinion that not infrequently marital unhappiness would be better relieved by circumcising the husband than by suing for divorce, and that a man, before marrying, should be examined with this operation in view should it be indicated.—*Medical Review.*

Selections.

Catarrh of the Stomach.

Simon, of Vienna, uses small doses of sulphate of sodium for the treatment of this condition. He usually gives from ten to fifteen grains of it in about six ounces of hot water, and, under these circumstances, the catarrhal condition of the stomach, with its hyperacidity, passes away, and the sensations of pain and discomfort in the epigastrium, with nausea, are relieved. This method of treatment is supposed to do good by improving the motor power of the stomach.—*Gaillard's Med. Jour.*

Chronic Affections of the Intestinal Canal.

"A limited trial of tannigen leads F. H. Williams to think that it is an excellent astringent when such action is desired upon the intestinal mucous membrane. Since its advent into therapeutics it has been chiefly utilized in chronic affections of the intestinal canal, and has been recommended by Müller and Künkler especially in the diarrhea of phthisical patients. Richard Drews has published the results of his experiments with tannigen in fifty cases of various intestinal diseases of childhood, which, in his opinion, demonstrate sufficiently the curative effects of tannigen upon the diseased intestinal canal, and prove that this remedy is efficient in a larger number of cases than those previously in use, such as calomel, benzoate of soda, bismuth, naphthalin, etc. Unlike Künkler, Drews finds that the remedy is as useful in acute as it is in chronic catarrh of the intestinal canal. In acute enteritis and gastro-enteritis doses of 3 to 8 grains, three times daily, in connection with regulation of the diet, effected a more rapid cure than any other method of treatment. The author advises that, after the disappearance of the catarrhal symptoms, the drug be continued for two or three days, to remove any remaining intestinal irritation and prevent recurrences. He states that tannigen is an excellent remedy in the intestinal diseases of childhood, producing a prompt cure by virtue of the astringent and antibacterial properties of tannic acid. Apart from this, it has the advantage over similar remedies of being tasteless, odorless, and of not disturbing the gastric functions, and of being perfectly innocuous, even when administered for a long time. For the latter reason it can be prescribed in knife-pointful doses for poor patients. Moncorvo has used tannigen in twenty-one cases of intractable diarrhea, usually malarial in origin, and in many cases complicated by hereditary syphilis or tuberculosis. It was easily administered in julep, and invariably well borne.

Its action was prompt, certain and effectual, both in chronic and acute diarrhea. In the province of antiseptics—such as salol, salicylate of bismuth, etc.—it lost none of its power, and Moncorvo strongly recommended the combination in cases where the fermentation processes in the large intestine are very active."—*Annual of the Universal Medical Sciences.*

Dionin.

Dionin, according to Dr. J. Heinrich, is the most valuable of all the morphine substitutes heretofore introduced as a cure in the morphine habit. It is particularly useful because of its very ready solubility, and because its solutions are absolutely neutral in reaction, hence insuring painless injections. So far as the dose is concerned, the author finds that about one-third more is required than when morphine is given, but the exhilaration following the injection is not nearly so great as that following morphine, therefore, all danger of a habit is obviated. A slight itching of the skin is usually observed a few minutes after the exhibition of the donin, just as generally follows in injection of morphine or any of its derivatives. The itching, however, disappears in at most ten minutes, even when of the most aggravated form. The good action of the dionin is ascribed to its not causing exhilaration, or conditions resembling it, and to its great solubility, in consequence of which it is rapidly absorbed, and as rapidly eliminated. This latter prevents any cumulative action; and it makes little difference by what channel it is eliminated, whether by the gastric mucosa, and from here passed into the intestines and voided with the feces, or whether, as Landsberg assumes with morphine, it passes into the blood circulation gradually from the subcutaneous cellular tissue, and is decomposed by the alkalinity of the blood, or the gases in the latter, or perhaps by some ferment, so that only a part of the dionin is excreted unchanged. In conclusion, the author states his belief that dionin is also useful in many other cases as a valuable substitute for morphine.—*Merck's Archives.*

Largin.

Largin has been successfully used by Dr. Stark in sixteen cases of gonorrhea, comprising eight cases of acute anterior urethritis, four cases of subacute anterior urethritis, and three of subacute posterior and anterior urethritis, and one of incipient gonorrhea. In the first fifteen cases the gonococci rapidly disappeared, without any irritation being experienced by the patients. In subacute anterior urethritis the remedy was also found to be very good, and this was the more remarkable because in the subacute processes the gon-