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A MONTHLY JOURNAL DEVOTED TO MEDICINE & SURGERY

VOL. XX. HALIFAX, NOVA SCOTIA, MARCH, 1908. NO. 3.

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CONTENTS FOR MARCH, 1908

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THE
MARITIME MEDICAL NEWS

VOL. XX., *MARCH, 1908*, No. 3

Diaprosis of Tuberculosis. A paper on Recent Diagnostic Methods in Tuberculosis, contributed by William H. Park, to a symposium on tuberculosis in infants and children at a recent meeting of the New York Academy of Medicine, is reported in the *New York Medical Journal* of February 22. The meaning of the reaction following the inoculation of skin or eye with tuberculin is first discussed. He argues that the reactions are not reactions to bacterial poisons, but to the body products in response to the poison. After referring to the old method of injecting Koch's original tuberculin, he called attention to the new methods. Von Pirquet placed tuberculin on the abraded skin, using a 1 to 4 strength, one drop of which was rubbed into the abraded skin. He found that in tuberculous cases he got a typical reaction. He took an arm, and made a little vaccination mark; that would be the control spot. Then two other "vaccinations" or scarifications were made, and into them was rubbed a 25 per cent. solution of Koch's tuberculin. In the course of eight, twelve, or twenty-four hours appeared a papular swelling and redness, of the size of a dime or larger. So by contrasting the reaction of the two scarifications with tuberculin with that without tuberculin, one could judge of the difference between a very slight inflammatory reaction due to the abrasion and that due to tuberculin. Wolff-Eissner believed that he might get the same reaction without the use of this scarification by applying it to the conjunctiva, and he tried using a 1 to 10 dilution placing one drop of it on the lower eyelid. This gave a marked reaction. Calmette, in order to avoid such a marked reaction or any non specific irritation, tried a method of purifying the tuberculin by precipitating the toxines in 65 per cent. alcohol. This precipitate was washed and dried, and a 1 per cent. solution was then used as in the Wolff-Eissner method. The reaction might develop in from 6 to 36 hours. It was very important in following up these new methods to carefully note the amount of reaction that occurred, and the following scheme had been adopted by many for the sake of uniformity: Two solutions were employed in diagnosis, which contained 0.5 per cent. (No. 1) and 1 per cent. (No. 2) respectively, and which might be used successively in each eye if time permitted. In this way unnecessarily severe reactions might be avoided. The eyelid should be held down until the drop was distributed about the sac without overflowing on the cheek. The same eye should not be used for a second test, as it appeared to become sensitized to some degree by one test. The tested eye should be kept from external irritation by rubbing, wind, dust and smoke. The first symptoms of a reaction appeared in from three to twelve hours in some cases, but might be delayed twenty-four or even forty-eight hours,

and continued for a week. The presence of a reaction was indicated by a scratchy feeling or secretion and redness of the inner canthus, caruncle, or lower lid, which might increase and include the entire conjunctiva with œdema of the lids. The following scheme was proposed for recording reaction: *Negative*: No difference in color when the lower eyelids were pulled down. *Doubtful*: Slight difference with redness of the caruncle. +—Distinct palpebral redness with secretion. ++—Ocular and palpebral redness with secretion well marked. +++—Deep injection of entire conjunctiva with œdema of the lids and photophobia, and secretion.

Contraindications:— Any existing disease of the eye or lids, conjunctivitis, blepharitis, trachoma, keratitis, and iritis. Eyestrain from errors of refraction need not prevent the use of the test so far as had been observed. The objections to the test were slight. No permanent ill effects had remained. Dr. Park said it was yet too early to estimate the exact value of either the skin or the eye reactions. Most observers believed that the skin reaction was little less apt to occur than the eye reaction. In young children the reaction was believed to indicate generally an active focus of tuberculosis, while in older children the reaction became less definite, as it might mean either a present or recently healed infection. In the adult the reaction was present in such a large percentage of the cases that it was hard to know whether there was an active or a late tuberculosis, or whether the bacilli had simply been absorbed through the mucous membrane, giving no reaction whatever except sensitizing the individual. Negative results were always helpful in excluding absorbed tubercle bacilli, latent or active tuberculosis.

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Ocular Reaction to Tuberculin

After first reviewing the previous work of French investigators, F. Smithies and R. E. Walker, writing in the *Journal of the American Medical Association* of January 25, point out the possible explanations of the discrepancies in some of the results obtained with Calmette's reaction, such, for instance, as the possible failures of technic, the possible variations in the tuberculin used, the difficulties of diagnosis in certain cases, the lack of uniform standards for estimating the occurrence or severity of the ocular reaction and, lastly, the possibility of still unknown conditions that might prevent the reaction in tuberculous cases or favour it in non-tuberculous ones. They then describe their own methods with a stable and, as it was shown by experience, dependable preparation of tuberculin obtained through the experimental department of Parke, Davis & Co. Two hundred and seventy-three instillations were made on 242 individuals, including normal individuals as well as cases from practically all services in the University Hospital at Ann Arbor. In 39 cases a positive reaction was obtained. In all but ten there was a previous clinical diagnosis of tuberculosis. In no case of active tuberculosis, pulmonary or otherwise, was there a negative reaction observed. In the 10 cases not clinically diagnosed tuberculosis, 3 gave a history of earlier tubercular processes. One of the remaining 7 was suspected of being syphilitic, the others were poorly nourished patients, clinically, hypospadias, hernia, tertiary syphilis, melancholia, clubbed feet

(2) and chronic meningitis. In but one was the reaction marked. Five cases gave a doubtful reaction, and there were 198 negative reactions; 126 of these individuals were hospital patients suffering from at least one ailment, but none of them suspected to be tuberculous. Of the 76 apparently normal individuals of both sexes, only 2 reacted. Inquiry developed in one of these a history of an old tuberculous knee (here the reaction was very slight and fleeting), and in the other the history and the physical findings were suspicious. Among the 198 negatively reacting cases there were 6 which had been clinically diagnosed as tuberculous, but in only one of these was there any reason to suspect an active process, and in this one even a third instillation of tuberculin was ineffective. The various types of the reaction, from the very slight temporary reddening to the severe conjunctivitis, are described in detail. In very advanced cases of pulmonary tuberculosis and acute miliary tuberculosis the reaction may fail. In discussing the cause, the authors offer the following hypothesis: "The inflammatory changes in the eyes of tuberculous individuals following the instillation of tuberculous suspensions is due to the slight stimulation of hypersensitive cells forming productive substances with the production of antibodies. These antibodies so produced, by acting on the tubercle bacilli or fragments of such enmeshed in the conjunctiva, liberate endotoxins which are capable of producing the inflammatory changes observed." They consider the reaction a valuable one in the diagnosis of tuberculosis, and that when positive reaction follows promptly on the first instillation a diagnosis of tuberculosis is reasonably certain. This does not necessarily imply an active process, though the evidence points that way. A thorough examination of the suspected focus should follow and in all suspicious cases failing to respond to one instillation the tuberculin should be instilled from two to five times and careful examinations, local and general, made after each instillation. None of the reactions, ocular, cutaneous or subcutaneous, can supplant thorough examination of the patient from every viewpoint. They are all confirmatory, and the authors think that the ocular reaction will probably prove as valuable as any. Its convenience and rapidity of action certainly commend it.

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Vaccination Diagnosis of Tuberculosis

William J. Butler describes the technique of tuberculosis vaccination by the skin as a means of diagnosis, in the *Medical Record* of February 1. Its action is similar to that of vaccine against small-pox. A positive reaction consists of a papule, at first bright red, later dusky red with a slight areola appearing in twenty-four hours after vaccination with tuberculin. Small vesicles may appear at the site, which soon fade and leave slight pigmentation. There are no constitutional symptoms. The test acts best in children, since healthy adults may give the reaction. It also fails in the last days of life in fatal tuberculosis. A positive reaction in a child is diagnostic of tuberculosis, and failure of the reaction does not prove the absence of tuberculosis.

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Dangers of Gauze Pack.

A paper read before the Southern Surgical and Gynæcological Association in December last, by Herbert A. Royster, is reported in the *New*

York Medical Journal for January 25 as follows: "Dr. Royster said we drained before we knew why we drained. A strip of gauze was simply a means of applying the law of capillary attraction. Rubber tube and tissue had been substituted, because the gauze so frequently failed to drain, acting as a successful stopper to the outlet. The one thing to be desired was patency of the wound, but there could be no more efficient plug that the stereotyped gauze packing. When intended for a drain, gauze should be inserted after the manner of a lamp wick; when used for hæmorrhage, it should be packed in like wadding with a ramrod. There was a field for gauze in packing sinuses, fistulæ, and granulating wounds, so that healing might take place slowly from the bottom. Some would persist in using gauze drains, and in the event of disaster would console themselves by believing that it was better to have drained and lost than never to have drained at all. The use of gauze to wall off septic matter in abdominal operations was fraught with danger and full of inconsistencies. The placing of large pads or rolls of gauze in the cavity necessitates a long incision and undue handling of the viscera, and almost always uninfected regions were in contact with pus-soaked gauze. When one end of the gauze was soaked with pus, the other end would become soiled sooner or later. The common practice was to push the gauze packs through pus collections into healthy parts or to wall off around localized abscesses with pads, which soon become saturated with purulent products. Exposure of the peritonæum to gauze soaked with pus was just as dangerous as the presence of pus itself among the intestines. A glaring inconsistency was seen in the removal of the packs with contaminated hands. The surgeon should resolve, first, that he would employ gauze sensibly if he could, and not at all if he could not. Second, if the using of gauze "maketh our technique to offend, we will use no more gauze while the world standeth."

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Chronic Sigmoiditis. Heinrich Stern, in an article contributed to the *Medical Record*, of February 29, says that sigmoiditis is not generally recognized as a separate entity because of the vagueness of its symptom-complex as generally understood. Pressure pain is not reliable, since the sigmoid is a very movable portion of the bowel. Obstipation is a constant symptom of other troubles. Sigmoiditis is characterized by exacerbations lasting several days, with tenderness and pain in the lower abdomen, moderate abdominal distention, slight elevation of rectal temperature, burning and aching in the buttocks and left thigh, and nervous and vesicular irritation. An examination of the lower colon and sigmoid should be made with the sigmoidoscope, when the mucous membrane will be found inflamed, the muscular coat being generally not involved. There is exudation and inflammatory swelling, increased mucous and pus secretion, and small hæmorrhages from ulcerations. The pain and tenderness are recurrent, the intervals between being free from pain. There is sometimes tenesmus, and usually an accumulation of fæces which is at times relieved by diarrhœa. Temperature is from 99° to 103°. Obstipation may be spastic or atonic. The condition is much more frequent in women than in men. The author

gives histories of seven cases treated by himself. Habitual constipation and drug catharsis are causes of the disease. Treatment consists of diet devoid of irritation, sedatives like lupulin and belladonna for the spasm and pain, and local treatment by high enemata containing soothing and mild astringent solutions. Hydrotherapeutic measures and proper exercise are important.

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Corneal Anæsthesia in Cerebrospinal Meningitis. E. Burvill-Holmes contributes an article to the *Journal of the American Medical Association* of January 25, in which he calls attention to a symptom of cerebrospinal meningitis that he has not seen noticed in the literature of the disease, viz., analgesia, or partial or complete anæsthesia of the conjunctiva and cornea. He has found this sign in fully one-half of a large number of cases seen by him in the Municipal Hospital at Philadelphia, even in patients who were perfectly conscious in some instances. Occurring as frequently as it does, it would seem likely to prove a valuable sign in differentiating cerebrospinal meningitis from other diseases in which meningeal symptoms are likely to occur, such, for example, as typhoid and typhus fever and uræmia.

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Spinal Anæsthesia. Recent experience in spinal anæsthesia is reviewed in an article entitled "Spinal Anæsthesia; Its Advantages and Disadvantages," contributed to the *Edinburgh Medical Journal* for November last, by J. W. Struthers. He mentions the fact that cocaine has been practically abandoned, preference being now given to stovaine, tropa-cocaine, and novococaine. The principal points to observe in technique are rigid asepsis, and the injection of one of these drugs, dissolved in an unirritating solvent, into the subarachnoid space below the spinal cord. Paralysis of sensation and motion follows, affecting first the sacral and then the lumbar nerve areas. If the dose be large the lower dorsal nerve areas become involved. The effect usually lasts from one to two hours. In from 60 to 90 per cent. of the cases, no complications or important sequelæ develop, but unfortunately several deaths have been attributed to the method, while occasional attacks of severe collapse and frequent attacks of slight collapse have been experienced by everyone who has used it. After abdominal operations vomiting is common, while nausea and involuntary evacuations are of frequent occurrence. In from 4 to 10 per cent. of cases the degree of anæsthesia attained is unsatisfactory. The degree and duration of the anæsthesia are variable, and we cannot as yet control these important factors. Moreover the mortality is not less than that attending chloroform anæsthesia, and decidedly greater than that associated with ether, so, when the objectionable fact that the patient is conscious of all that is going on during operation is considered, it is very doubtful if this form of anæstesia will gain in popularity.

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Signs of Incipent Tuberculosis. Albert Abrams describes certain original methods for the diagnosis of tuberculosis in its incipiency, in the *Medical Record* of February 22. Lung cavitation is not necessarily a bad sign. In health the lungs are resonant in inspiration, dull in forced expiration. In emphysema the per-

cussion note is the same in both phases of respiration. In tuberculosis pulmonary vesicular emphysema exists in the incipient and predisposed state. Another important sign is the extension of the lung borders downward. Unchanged percussion resonance, hyperresonance, and prolonged expiration indicate deficient expiratory force, and constitute the first signs of the pretuberculous stage. Pulmonary anæmia characterized by atalectatic zones in the lungs is an important sign. This form of anæmia is not benefited by iron. Vibrosuppression, that is, elimination of vibration by pressure on the sternum, aids in obtaining proper percussion signs in the lungs. The author describes the tracheal traction test and the use of the tuning fork in testing conductivity of the lung substance.

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X-Ray Treatment of Cancer

E. G. Williams reports his experience with the X-Ray in the treatment of cancer, in the *Journal of the American Medical Association* of February 22. He divides his cases, 107 in number, into six classes. The first class included 53 cases hardly advanced beyond akeratosis, having a thiek scale covering an ulcerated area of long standing but with recent more rapid growth, and also those growths with elevated margins with ulcerated centre growing steadily and usually starting from a mole or papilloma. In fifty-two of the cases, the lesions were healed, in the one not healed the treatment was interrupted by pneumonia and after the attack excision was performed and there has been no recurrence now for three and a half years. In four cases there was a recurrence which healed again under the X-Ray and remained well. The question of recurrence in these cases depends on the thoroughness of the treatment—whether or not all the malignant cells have been destroyed. A dosage should be given that in ten days would not be quite sufficient to produce an erythema. Unless the malignant cells are destroyed they will acquire renewed activity and be more difficult to subdue; hence the importance of regular applications. In Class 2, cases of advanced superficial carcinoma, seventeen patients were treated, two were unimproved, four were improved, five were temporarily cured but had recurrence, while six were cured and remained well. In Class 3, growths in the deep structures, the results were less favourable, five patients were unimproved, two were temporarily improved, in one the growth disappeared but recurred, while in one the patient has remained apparently healed now for twenty months. Class 4 includes carcinoma of the mucous membranes, of which there were ten cases, five on the lower lip. In no case was there a cure, though in four of the lip cases there was more less or improvement. He now advises excision in all such cases. Class 5 consisted of three cases of primary mammary cancer. In two of these the growth has disappeared under the rays, in one of them after recurrence. He advises, however, excision in all such cases. In Class 6, fifteen cases of recurrent mammary carcinoma were treated. In five there was complete disappearance of the disease which has persisted up to date in two of them. In only three of the fifteen was there no improvement, and much can be expected from the treatment in such cases in relieving pain and prolonging life. He concludes that all incipient skin cancers are curable in the early stages by the X-Ray and much improvement can

be expected even in the advanced cases. Cancers of the mucous membranes and primary cancers of the mammary glands are to be excepted. Recurrent growths after X-Ray treatment are as amenable as the original growths, while those after pastes and surgical treatment are, in his experience, deeper and of greater malignancy.

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Cytodiagnosis. An interesting and practical paper entitled "The Value of Cytodiagnosis in Practical Medicine," is contributed to the *Lancet* of February 1, by J. E. H. Sawyer. The examination of pleural serous effusions, cerebro-spinal fluid and ascitic fluid, is discussed. It may be said in a general way that the cells found in all effusions, and the percentage of each kind of cell to the total number, vary in the same way in all these pathological fluids, according to the disease which produces the effusion. The examination should be made as soon as possible after the receipt of the specimen, as degeneration of the cells begins within a few hours after the removal from the body. In centrifuging, care should be exercised not to continue the process too long, nor to practice it too forcibly. The small lymphocytes, the polymorphonuclear cells, and the endothelial are the structures to be especially studied. The author's observations have led him to the following conclusions: 1. Effusions of tuberculous origin contain a large percentage of small lymphocytes, ranging from 5 to 100 per cent. 2. Effusions of acute inflammation contain a large percentage of polymorphonuclear cells, ranging from 64 to 97 per cent. 3. Mechanical effusions contain chiefly endothelial cells, the highest count being 98.8 per cent. 4. Effusions due to malignant disease can rarely be diagnosticated by cytological methods alone, but when such a condition is suspected to be present the predominance of endotheial cells would greatly support that view.

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Gonorrhœa in Women. H. J. Boldt, in the *Journal of the American Medical Association*, February 1, says that while the usual primary site of gonorrhœal infection in women is the urethra, the vaginal and cervical mucosa may be first infected when the vulvar entrance is large and the urethral orifice is very high. Follicles with small openings and the ducts of Bartholin's glands do not become infected till later. While the rectum may become infected from the genital tract, the usual cause is cohabitation per rectum. Gonorrhœal vaginitis is rare in the adult, except when an infantile type of vaginal mucosa persists. Next to the urethra, the uterus is the favourite site of infection, and then there is always an interstitial endometritis and purulent catarrh. When it takes a chronic course glandular endometritis is produced; frequently inflammatory changes also occur in the myometrium. Boldt has never found the uterus infected without the urethra being likewise involved. When the infection passes on to the tubes we find similar inflammatory changes there, and sometimes very intense, extending to adjoining parts and producing pelvioperitonitis, with adhesions. When the ovaries become affected by continuity, the destructive processes may be very severe, but he has never seen them so much so that there was no functionating stroma left. Boldt has had positive evidence of the mixed infection of gonococci and streptococci in pyosalpinx, and Witiee and A Mar-

tin have likewise seen it. In strictly urethral gonorrhœa in women, if there is no extension of the infection and the patients abstain from irritating diet and cohabitation, and keep the external genitals clean, the majority, he says, get well without any special form of treatment. It is not safe, however, to rely on this, as some cases go on to a very obstinate chronic stage. Skene's urethral glands are often a late lurking place of the gonococci. While the diagnosis of acute gonorrhœal endometritis should not be difficult, it is otherwise with the chronic type. Subjective symptoms may be slight and yet the case be a very obstinate one. Boldt mentions the puerperal and menstrual periods as specially favouring the extension of gonorrhœa in the female genital tract. He notes the serious effects of tubal infection and thinks that it is likely to leave the patient's reproductive power impaired and to increase the liability of tubal conception. As regards prophylaxis, he has little faith in police regulation, and more in the improvement of masculine morals and the use of prophylactic injections. The treatment is discussed at length, and the range of opinion shown by a rather extensive review of authorities. Particular mention is made of the importance of a suitable intrauterine applicator syringe for use in cases in which the cervix has not been previously dilated, and of its advantages over the usual applicators. In some cases of extremely troublesome metrorrhagia he has used intrauterine applications of pure carbolic acid with advantage, and has never seen any harm result. Adnexal infections, when acute, can be treated conservatively by absolute rest, ice applications, keeping bowels quiet and avoiding any chance of traumatism, and when improvement appears, using mild antiseptic vaginal douches, following this later with judicious local treatment, avoiding intrauterine measures and frequent bimanual examinations. If pus tubes form and gravitate to the floor of the pelvis, surgical treatment is required, as is also the case with those patients who, after an apparent recovery from an acute attack, suffer from a chronic salpingo-oöphoritis. Here he recommends, instead of a bilateral radical operation, a salpingectomy and implantation of the ovary, or part of it, in the cornu of the uterus. It is seldom necessary to sacrifice both ovaries. In other cases, in which there is chronic pelvic inflammation undermining the patient's health, even if there is and possibly has been no suppuration, a salpingectomy or radical operation may be advisable, together with such other measures, uterine fixation, etc., as are required to relieve the pelvic situation. In all instances when a salpingectomy is made a thorough curetting should precede the opening of the abdomen, and the patient should always be informed that conservative surgical measures may not relieve and that a later radical operation may be required.

EDITORIAL.

VITAL STATISTICS.

The subject of Vital Statistics has for many years occupied the attention of the profession in Nova Scotia, and in this journal was very fully entered into by Dr. G. M. Campbell in his Presidential Address to the Maritime Medical Assocition in 1904, and there is now before the Legislature of Nova Scotia a Bill which is an effort to carry out this desideratum.

We may recall the fact that the Province of Nova Scotia for over ten years (1864-1876) carried out a very good system of *vital statistics,* as a review of the reports of the late John Costley will very clearly shew; but owing to the question that "Under the British North America Act" the Dominion Government had sole control of "vital statistics" and that it was alleged "the returns were unsatisfactory" no provision was made in the estimates for 1877, and the Dominion Government ceased conducting the statistical department of Nova Scotia.

There appears to be no question as to the liberty the local legislatures have to deal with "vital statistics," and the province of Ontario has continued to carry out a system. Other provinces, notably British Columbia, Quebec and New Brunswick, have done the same, and now, in Nova Scotia, our old system is to be resuscitated.

As to its desirability, nay its necessity, there is no question, and for so many reasons, that we need not at present take up space in its discussion. The only dominant question is—how is it to be most successfully carried out ?

It would be premature at the present time to enter largely into the details of the Bill, because it is evidently a tentative measure, to be amended and modified as experience of its working may suggest, and we hail it as an indication of the good will of the "powers that be" with the hope that it will eventually be so perfected as to fulfil its valuable mission.

We may be excused *en passant* to refer to some difficulties that transpired in the working of the old system that should be avoided in the present Bill.

1st.—Many districts were without any registrar, others inconveniently large, some too small; and in many there was want of definiteness in the boundaries, so that the registrars had difficulty in knowing where their districts began and ended, and it was suggested that school districts, being well defined, should be taken as a basis or general guide.

2nd.—The number of registrars were found to be too few (between 300 and 400) to perform the work properly.

3rd.—Registrars made little or no effort to perform their duties in many districts, and there should be a penalty for neglect.

4th.—The plea of ignorance of the statute was made, and the Bill should be very definite on this subject.

5th.—It was found that sufficient remuneration for looking after the registration of the district, perhaps travelling over it, instituting inquiries, etc., entailed labor and expense that the compensation did not cover.

The present bill defines the remuneration the registrars shall receive, but does not contemplate the payment of a fee to the doctors, undertakers, midwives and other parties who are required to send in reports that in any

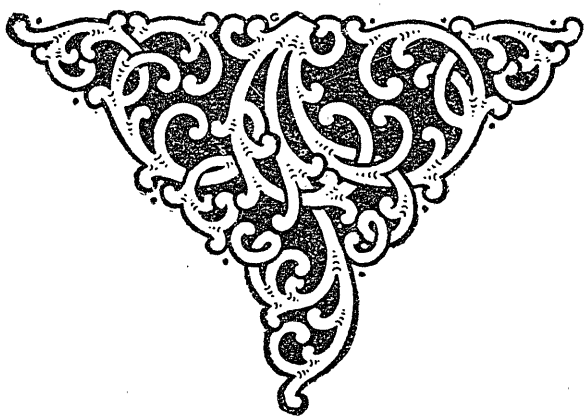
case demand more or less expense, as well as labor, and though it may be assumed that parents and friends directly interested should report without pay, yet those above referred to, can scarcely be placed in the same category.

The question may arise, "has the legislature the power to demand the needed certificates from outside parties without compensation." If we be rightly informed, such a question has arisen, and the aggrieved parties were given redress in the Courts.

We only mention the above to the end that the working of the Bill be not handicapped by indifference or a feeling of injustice on the part of those who must assist in carrying it out, and we think a small fee should be given to every one reporting who is not personally interested in the birth or death reported.

Marriages do not come under the same category.

Our best wishes are for the efficient working out of a system of "vital statistics" for Nova Scotia.



ON HODGKIN'S DISEASE.

By ARTHUR BIRT, M. D. (Edin.)

(Read before the Halifax and Nova Scotia Branch British Medical Association, Jan. 22, 1908.)

WHILE appreciative of the compliment you have paid me in asking for a paper, I have been somewhat at a loss in the selection of a subject of general interest, owing to my limited clinical material.

The disease I have chosen offers a fair field for all-round discussion on several grounds: It is not a common affection, and yet it crops up now and then in most men's experience. Considerable misunderstanding seems to exist about it, and many do not seem to even yet realize that it is a definite pathological entity. In its various forms it may simulate quite a number of other ailments, and thus present very interesting diagnostic puzzles. Its ultimate etiology is yet to be found. And, finally, it is one of those diseases that is, as yet, refractory to treatment, though advances are now being made in this direaction.

Hodgkin's disease has suffered from a plethora of names: pseudo-leukæmia (Cohnheim), malignant lymphoma (Billroth), lympho-sarcoma (Virchow,) adeni (Trousseau), desmoid carcinoma (Schultz), Hodgkin's disease (Wilks) and others. Of these names, it has been suggested that lympho-sarcoma has probably occasioned the most confusion, as it suggests a sarcoma composed of lymphocytes, while in reality Hodgkin's disease is not a malignant growth in the sense that it infiltrates, and is not composed exclusively of lymphocytes. Wilks christened it by the name of the original describer, Hodgkin, (1832), and it seems in the present state of affairs the best name until the real etiology is known.

The different varieties of Hodgkin's disease may be classified in various ways, but the division which is clinically perhaps the most useful is into the acute, subacute and chronic forms, lasting weeks, months or years respectively.

I propose to report a chronic case which presented some interesting features; and, afterwards, time permitting, to take up certain points in connection with the disease on which your experience, criticisms and discussion would be welcomed.

CASE REPORT.—A widow, age 71, was seen in the spring of 1903 for a rapidly growing group of glands in the neck which had first been noticed three or four months before. She had suffered for years from chronic delussional insanity with a degree of dementia an dcould give one little assistance herself. The glands in the submaxillary region, those in the posterior triangle and the supra-clavicular glands were those involved. They were discrete, rather elastic, freely movable under the skin, and not at all tender. The opposite side of the neck was free and the other accessible group of glands were not involved. The tonsils on both sides were much enlarged and fibroid, the right being the worse. Examination of the viscera was negative except for the heart, which shewed moderate dilatation and a systolic, poorly conducted blow over the apex. The spleen was not palpable and the temperature and pulse were normal. She had no cough and was not emaciated. Enucleation of the tonsils, and of a gland (for diagnostic purposes) was declined. A tentative diagnosis of incipient Hodgkin's disease with

relative mitral incompetence, was made, and the patient was put on ascending doses of Fowler's solution. No improvement was noticed for two months, when rapid shrinkage of the glands took place, and at the end of eight months the mass (originally as large as a small orange) had diminished to a quarter of its original size, and the neck contours were nearly normal. In spite of the continuance of treatment recrudescence took place within a few months, the enlargement becoming nearly as great as before.

The case was seen at somewhat lengthy intervals, and its handling was interfered with by the mental condition and the objections to remedies. The circulation required treatment from time to time.

In the third year of her illness a harsh barking cough was noticeable, but physical signs of tumour or pressure in the chest were absent back and front, and the symptom was not in evidence in the later stages. At this period (third year) the submaxillary and supraclavicular glands and those in the posterior triangle, on the left side of neck, became enlarged, whilst those in the right axilla were easily palpable, and the right neck was markedly deformed by the glandular masses, now partially matted together from periadenitis. There was still no reddening of skin or adhesion to it. There was some general darkening of skin of face, neck and trunk, except where pressure was made by the clothes around the waistline. A brownish yellow discolouration of the buccal mucosa was also noted.

The spleen could now be easily palpated, but did not project beyond the costo-chondral margin. The patient was often flushed and feverish-looking, and shewed at these times elevation of temperature to 100° or 100.5° F. Unfortunately no regular chart could be kept. Blood examintion showed a moderate grade of secondary anæmia, red cells and hæmoglobin proportionately diminished, slight poikilocytosis and some microcytes. There was no marked excess of leucocytes, which were in about their normal ratios. No excess of eosinophiles was noted. The patient's cough was attributed to enlargement of the bronchial glands. She complained of burning pain in the pit of the stomach, and not infrequently vomited without preliminany nausea. The writer referred these symptoms to enlargement of the retro-peritoneal glands, or, possibly, to lymphadenomatous changes in the stomach itself. There was more or less œdema at times of hands and feet.

No great change was noticed except for increasing emaciation and astehenia until the later months of her life when the complaints of abdominal pain and colic became more pronounced, and alternating attacks of constipation and diarrhœa were troublesome. There were many firm palpable glands in both axillæ and one groin. There was tenderness and a sense of resistance in the epigastric region and it was thought that the abdominal glands might account for those symptoms. Her skin was now definitely more bronzed and dark than formerly, the pulse was at times very feeble, and stray glands were detected in one leg and around one ankle, and at the back of the neck.

The terminal stage of the illness was ushered in by an obstinate attack of fæcal obstruction lasting about ten days. This was followed by a similar period of uncontrollable diarrhœa, and this, in its turn, by a

week of bloody stools which became almost pure blood on the day she died in December, 1906.

To this terminal sequence of symptoms I would particularly direct your attention, in view of the interesting conditions in the abdomen found at autopsy. The duration of the disease was five years and one month from the first-noticed glandular enlargement.

Autopsy.—The body was greatly maciated. The tissues were very dry. There were a few enlarged mediastinal and peri-bronchial glands, yellowish-white in colour, waxy, smooth and firmly elastic. There was no mass in the chest that could have caused compression symptoms. There were no pleural adhesions, and the lungs were everywhere crepitant except at the extreme base posteriorly. In the substance of each lung were scattered a few lymphadenoid (?) nodules, yellowish-white in colour, irregular in outline, and exuding a thin, whitish juice on section. The apices of the lungs were free from anything that would suggest tuberculosis. The heart was fatty, and shewed moderate dilatation with a wide mitral free from vegetables.

On opening the abdomen a large portion of the visible intestine was seen to be very darkly congested; in fact it was on the point of becoming gangrenous *en bloc*. The limits of this extensive threatened necrosis of the gut appeared to be the pars inferior duodeni above, and the transverse colon below, though the lines of demarcation were not sharp. This area, corresponding pretty closely to the area of distribution of the superior mesenteric artery, suggested compression of this vessel. There were many subserous ecchymoses on the bowel, which was much altered, and its lumen contained a considerable amount of grumous blood. Above the pancreas, and lying mostly behind the stomach and transversely, was a plaque-like mass of enlarged glands (post-peritoneal) measuring about four by two inches. They were more or less matted together by periadenitis, but the individual capsules could be made out as intact. On section some were yellowish-white and as large as an olive, some were whitish homogeneous-looking and more elastic. The superior mesenteric artery was involved in this glandular mass, and compressed to the point of obliteration. The condition of the vein was not so well made out, but it probably suffered compression to a lesser degree. The lumbar glands were moderately, the mesenteric glands not noticeably, enlarged. The spleen was about twice the normal size, rather soft and pulpy. It shewed on section a number of soft, whitish bodies, like suet lumps, surrounded by the dark-red parenchyma. The liver was not noticeably enlarged. A few (four or five) white nodes similar to those in spleen were detected. The kidneys were somewhat atrophied and shewed two or three lymph-adenoid, somewhat circular, patches. The adrenals appeared normal on inspection.

Glands were taken (*a*) from neck (*b*) from the retro-peritoneal group, and (*c*) from the thorax. Dr. L. M. Murray reported that these showed giant-cells, epitheloid cells and caseation. He regarded the change as probably tubercular. At the same time he suggested that this might easily be a secondary and terminal infection, a view which the writer himself holds. He regrets that in a rather hasty single-handed examination the larger and more degenerated glands should have been selected,

and thinks that a better choice might have given more typical findings. The presence of giant cells and epitheloid cells certainly is not against Hodgkin's disease, though cascation to some extent *is*. Unfortunately we did not have tubercle bacilli or other organisms looked for.

Here was given, as a contrast to the preceding case, a short report of two *acute cases* from outside sources.

(a) In a child two years and nine months, ending fatally from syncope in eight weeks.

(Redfern "Lancet.")

(b) In a male, seventy-two, with autopsy, ending fatally in six months from onset.

(Kindness of Dr. Theodore Janeway, New York.)

And now, to take up in a little more detail the points suggested by this case. In the first place, as regards *predisposing causes*, although tuberculosis, syphilis, parturition, etc. have been noted as antecedents in stray eases, it is to be remembered that in more than half the recorded cases patients were in good health previously and the stock showed no serious flaw. On the other hand the frequency with which a local source of irritation, *e.g.* otorrhœa, enlarged tonsils, carious teeth has been present, and has given rise to enlargement first of the nearest tributary group of lymphatic glands, has been recognized since Trouseau's day. In the present case the old diseased tonsils supplied a focus of infection, and the glandular enlargement in the neck began on the side of the worst tonsil. The lymphoid tissue at back of tongue later became hyperplastic.

As to *sex*, it is generally conceded to be much more common in males. In a considerable number of cases which he has now seen in various clinics the writer can only recollect two occurring in the female, but this may be exceptional.

Age at onset. It is decidedly more frequent in the young; and, since of 43 cases collected by Mitchell Clark, ten were below ten years, and 33 were below the fortieth, the onset in the writer's case at 71 must be quite unusual. Rerfern has reported in the *Lancet*, a case in a child 2 years and 9 months, terminating fatally in 8 weeks.

The First Symptoms Noted. The general symptoms of anæmia, loss of weight and strength, may precede the glandular enlargement; but this case followed the general rule, in that the enlargement of the glands, and especially of those in the posterior triangle of the neck, was the first thing to attract attention and that a long interval occurred as happens in many of the chronic cases, before any further group was involved. As in most cases, the opposite side of the neck became affected before the axillary, inguinal or other groups showed enlargement.

It should be borne in mind that the inguinal groups or the mediastinal or abdominal glands may be the first to give rise to symptoms, the axillary glands somewhat more rarely. Gowers found enlargement of the superficial glands the first symptom in 52 out of 78 cases of the disease.

The enlargement is peculiar in that the glands remain independent of each other, are freely moveable, and in the early stages are elastic and moderately firm. At the later stages of chronic cases they may present very varying degrees of firmness, some quite soft, some very hard and gristly, so that the attempt to clinically differentiate the disease into a hard and a soft-gland variety is (according to Dr. Longcope, of Philadelphia) impracticable. In my own case, before death and at necropsy, glands of every consistency were ob-

served. The glandular enlargement only reached the stage of the deforming masses, sometimes seen, in the first year or two of the disease and was confined to the original groups in the right neck which were as large as an orange, but never tender.

The long delay in the advance and the rapid initial shrinkage of the glands, as observed here, has been frequently commented on. This may occur with or without treatment, though the arsenic appeared to be effective in this instance. Unfortunately the patient's mental condition interfered so seriously with the treatment, that the full benefits of arsenic pushed to the limit were never ascertained. It is well to bear in mind the possibility of this spontaneous shrinkage, of a temporary or, in rare cases, permanent arrest in the growth of the glands: also that whilst, for instance, an inguinal or neck group may be rapidly shrinking, those of mediastinum or abdomen, or both, may be just as rapidly increasing in size. In short the behaviour of the glandular groups in protean, and the apparent extent of the glandular involvement is no certain criterion of the severity or rate of advance of the disease. It is interesting to note that shortly before death several glands which are described as belonging to the tertiary groups were palpable, viz., over the cervical spine, over the lower and outer side of the shin, etc.

The question of intervals of quiescence brings up the point of the duration of the disease. Sir W. Gowers gives the following table from 50 fatal cases:

Less than 1 year in 18 cases
Between 1 and 2 years in 15 cases
Between 2 and 3 years in 6 cases
Between 3 and 4 years in 6 cases
Between 4 and 5 years in 3 cases
Over 5 years.....in 1 case

Acute cases may terminate fatally in a few weeks. The duration of the writer's case, 5 years and 1 month from the time that, under very casual observation, the growths were first noticed, would make this case rather exceptional in that respect.

The Spleen.—Enlargement of this organ, usually quite moderate in degree, is not an early symptom, and, as a rule, cannot be detected until the glandular enlargement is well marked. (Murray of Newcastle.) In the present case it was only established in the second half of the disease. This is important to recollect in eliminating splenic leuchæmia. When it can be made out the writer surmises that the organ must be at least twice its normal size, unless it be dislocated downwards. As usually happens it was not at all painful.

Anæmia.—This is pretty constant and appears early as a rule. In addition to the debility there has often, as in this case, been noted œdema of the hands and feet. Here it did not extend above the middle of the leg and was variable. In my case the leucocytes were estimated at about 10,000, and there seemed a doubtful excess of lymphocytes. But accurate and repeated examinations were impossible. Blood counts shewing the steady and rapid blood deterioration up to the fatal termination are to be found in an able paper by Dr. Channing Simmons, of the Massachusetts General Hospital, in which he gives a pathological analysis of nine cases. The blood picture, however, shows nothing typical. It is a steadily advancing secondary-type of anæmia without much tendency to a leucocytosis, but often showing some relative increase in the lymphocytes. The red cells are diminished in numbers *pari passu* with the hæmoglobin, and anomalous types of cell are the exception rather

than the rule. The importance of this point in the differentiation of Hodgkin's disease from various blood diseases is evident.

(Here was given a series of differential blood counts from a case age eighteen, quoted by Dr. Simmons, showing the steady blood deterioration up to the termination).

The Fever.—Although ascertained only occasionally, it seemed probable that the temperature in the writer's case was never much above the normal. For long periods there seemed to be no fever. Fever in Hodgkin's disease is, however, an important symptom, since cases with slight glandular involvement, high fever, prostration and emaciation may closely simulate acute miliary tuberculosis of the lungs. (Lawrason Brown).

Frederick Taylor, of London, has recently called attention to the chronic relapsing fever of Hodgkin's disease. This author in reporting nine cases, draws the following conclusions: 1. A varying temperature is common. 2. In some cases there are relapses with periods of apyrexia. 3. The temperature may be continuously high for long periods, and periods of higher fever may alternate with periods of lower fever. The relapsing pyrexia may be of assistance in the diagnosis of doubtful cases of Hodgkin's disease.

The writer considers the occurrence of these varying types of fever in Hodgkin's disease to be a subject of great interest in view of the opinion held by many that this is an infective disease, and in view of the fact that, quite recently, two competent observers have isolated from the glands of an undoubted case, spirochætes indistinguishable from pale spirochæte of syphilis—a disease which itself involves the glandular system characteristically, and which may show, in all three stages, fever of very varied type. Should Hodgkin's disease finally turn out to be a spirochæte infection, then, doubtless, the fever represents the natural reaction to the toxines of the organism as they escape intermittently into the circulation. I might state, however, that Dr. Warfield Longcope writes me that he has as yet failed to demonstrate spirochætes in the glands, etc., of Hodgkin's disease.

High fever, if continued, is of evil omen.

The next point that occurs in my case is the *cough* during the middle period, which was apparently due to irritation of the vagus by the enlarged bronchial glands. Pain in the chest and cough may be the earliest symptom just as pain in the abdomen or pain and œdema of the leg may be. It all depends which group of glands is the first to enlarge. It is easy to see what difficulties in diagnosis may result, if the superficial glands are free from enlargement The symptoms of thoracic gland enlargement are often marked. In July last in St. Luke's hospital, New York, under the care of Dr. Theodore Janeway, I saw repeatedly the following case: Boy, nine years old; emaciated; skin deeply bronzed generally; periods of moderately high fever; glands enlarged in neck, groins and elsewhere; brassy cough; dyspnœa; marked secondary anæmia. In the interscapular region there was an extensive area of relative flatness opposite the mediastinum, and the lower lobe of right lung showed evidence of compression of the bronchus. The X-ray picture revealed an extensive shadow in the area of the demonstrated dulness, mostly to the right of the middle line, and this was in all probability de to a mass of lymphoma-

tous glands in the mediastinum. The case ended fatally but unfortunately no necropsy was obtained.

Time does not permit me to detail possible pressure symptoms which indeed are described far better than one could do it in all the text-books.

In the case of a man of 60, under one's care when with Greenfield, of Edinburgh, the masses of lymphomatous glands in the mediastinum produced many of the pressure symptoms met with in the cases of aneurism of the aorta or malignant growths, and but for the glandular enlargement externally might have led to serious mistakes.

As to the abdominal pains, vomiting attacks, etc., which occurred in the case under discussion, these were probably, in part, pressure symptoms from the post-peritoneal glands, and, in part due to involvement of the solar and other important sympathetic nerve plexuses.

The most interesting point of all was the terminal stage in which steady obliteration of the lumen of the superior mesenteric artery was proceding, with death occurring at the point when gangrene of a large portion of the intestine "en bloc" was occurring. This termination may be compared with advantage with the picture that results from acute infarction of the bowel from embolism into the s. mesenteric artery.

The Skin Pigmentation. — The gradual dirty-brown darkening in the last year of the patient's illness, and the yellowish brown, faded-leaf coloured patches on her buccal mucosa, are of interest, as they were probably referable to involvement of the suprarenal plexuses, an offshoot of the solar plexus. In a case of Sir W. Jenner's, Sir W. Gowers found that the solar plexus was concerned, though the supra-renals as in the writer's case, appeared unaffected. In the present case nothing but inspection supports the latter opinion, but at any rate, they were not caseous. This pigmentation is of course one of the characteristic Addison symptoms and a leading French clinician holds that the symptoms of Addison's disease are to be divided into two distinct sets—those, such as the cardiac weakness and general asthenia, which depend on the loss of the pressor secretion (adrenalin) from disease of those glands; and those, chiefly the pigmentation, which depend on implication of the semilunar ganglion and associated sympathetic plexus. In the writer's case the latter could not have escaped involvement. In Dr. T. C. Janeway's boy patient, previously mentioned, there was the same general brownish darkening of the skin. The possibility of arsenic being responsible for it was considered, as he had been previously treated by cacodylate of soda hypodermically. If I recollect rightly a necropsy was declined and the point remained in doubt. Possible arsenical pigmentation from previous treatment should be borne in mind.

Histology.—Thanks to the recent work of D. M. Reed, of Johns Hopkins, W. Longcope, of Philadelphia, Channing Simmons, of Boston, and others, we now have a definite and pretty generally accepted picture of the pathological changes in the glands and lymphadenoid growths in Hodgkin's disease. Osler, accepting Reed's conclusions, gives the changes found as follows: 1. Proliferation of the endothelial and reticular cells; 2. The formation of lymphoid cells (uniform in size and shape) from the mother cells of the lymph nodes and from the endothelial cells of the reticulum; 3. characteristic giant cells, formed from proliferating endothe-

lial cells, which differ from the giant cells of tuberculosis; 4. great proliferation of the connective-tissue stroma, leading to fibrosis; and, lastly, eosinophile cells which form a marked feature in a large proportion of the cases. The metastatic nodules present the same structure as the glandular growth.

The giant cells are described by Simmons as varying greatly in size, some as large as 4 microns in diameter. They were of irregular shape, and contained from two to five or more vesicular nuclei, having no particular arrangement. In some the nuclei were much smaller than others, and the cytoplasm darker. Vacuoles were often seen in these cells. They did not at all resemble the giant cells and giant cells were found in the one or two glands examined, but neither tubercle bacilli nor spirochætes were looked for.

The etiology of Hodgkin's disease is as yet an unsolved problem. There are in this complaint many points which suggest that it is of an infective nature, and that it is comparable generally to the infective granulomata such as syphilis, tuberculosis and actinomycosis. Yet evidence of direct infection is almost entirely wanting. One case, however, is quoted by Geo. R. Murray which is important. It was under the care of Obratzow. "An assistant who helped to plug the nose, and also to examine the urine and fæces of a patient who was suffering from acute Hodgkin's disease, soon afterwards was attacked by the same disease, and died a month after the time of the alleged infection." The writer inclines to the opinion that Hodgkin's disease will, in the near future, be proven to be dependent on a specific micro-organism, and that this will most likely turn out to be a spirochæte which has hitherto escaped detection owing to a failure in the technique of the staining, etc. It is but fair to state that Dr. Longcope writes me that he and his colleagues in Philadelphia have so far been unable to confirm the finding of spirohætes resembling the spir. pallida in Hodgkin's disease, as was reported by Dr. Wm. C. White, of Pittsburg, in the *Journal of the American Medical Association*, August 31, 1907. Delbet's experiments seem to point to a bacillus as the cause. He obtained a bacillus from the splenic blood of a case of Hodgkin's disease, obtained also pure cultures of this, and inoculated a dog. The animal emaciated rapidly and when killed shewed glandular enlargements corresponding to those of Hodgkin's disease in the human subject. His observations have not, so far as the writer knows, been confirmed.

The diagnosis of Hodgkin's disease may be quite clear at the first thorough examination, or it may present difficulties that are almost insurmountable. To the writer it seems that these difficulties may be roughly grouped into these classes:

(a) When only a few superficial glands in one or two groups are enlarged and the general symptoms of anæmia and progressive cachexia are as yet in abeyance, the differentiation from other forms of gland enlargement, especially tubercular lymphadenitis, may be difficult. To-day the short and most satisfactory method of settling the point is the excision of a gland under local anæsthesia, and its examination (by an expert is possible) for the typical histological picture described by Dr. Reed, of Johns Hopkins, and confirmed by W. Longcope, Channing Simmons and other pathologists. This picture is now definitely accepted as character-

istic of Hodgkin's disease by such experts as Osler, Musser and others; and it at once separates the disease under discussion from others like tuberculosis, lympho-sarcoma, syphilis, etc., which also implicate the lymphatic glands.

If this be declined, and if the case be afebrile, Osler recommends a trial of tuberculin as safe and effective. Tuberculous adenitis is stated to give a prompt reaction. In the case here reported the diagnosis seemed to lie between Hodgkin's disease and lympho-sarcoma. The discrete, elastic-feeling glands showing no tendency to break down or involve the skin at the end of four months, seemed to the writer to weigh against malignancy and tubercle, though there was no real certainty until the other side of the neck became involved. Symmetical enlargement is always in favor of Hodgkin's disease.

(b) When the disease begins suddenly with acute symptoms, marked fever and loss of strength, but the superficial glands are not noticeably involved, there is a serious risk of mistaking it for miliary tuberculosis of the lungs, or for typhoid or other infective fever. In one of Frederick Taylor's cases above mentioned, the high relapsing pyrexia and the splenic enlargement of very unusual shape might easily suggest malaria. Indeed the splenic tumour was so puzzling that the following opinions were expressed by different clinicians: that it was renal; that it was glandular; that it was malignant; and that it was a tuberculous mass in the omentum.

(c) Thirdly, in cases in which the thoracic or abdominal groups are involved before the superficial glands or constitutional symptoms are noticeable, though this is quite against the rule in Hodgkin's disease, it is evident that a variety of problems may present themselves. It is well to bear in mind the possibility; but Hodgkin's disease causes pressure symptoms in chest and abdomen much less frequently than sarcoma or aneurism. The negative blood picture and the histological examination of a gland should differentiate Hodgkin's disease from the leukæmias. The occasional occurrence of hæmorrhages should be kept in mind. They might suggest purpura. My patient showed subconjunctival hæmorrhages before death.

Prognosis is a ticklish subject. Cases look gloomy in which there is high fever and many groups of glands rapidly involved; in the old and feeble; where the mediastinal glands are early affected and pressure symptoms are present; and where arsenic fails to make a prompt impression and the X-ray treatment is not available.

TREATMENT.—If the disease can be caught in the stage when a single group of glands is alone involved, *e.g.* the cervical glands as is common, and if involvement of the thoracic glands can be excluded with reasonable certainty, extirpation of these glands should be practised. This course has the endorsement of many leading clinicians, and the task is the easier since the glands are discrete and non-adherent.

Arsenic, whether in the form of Fowler's solution or the more fashionable sodium cacodylate, has until quite recently been our great standby. The former should be pushed to the limit, and the risk of pigmentation or even arsenical neuritis may have to be assumed at times in the attempt to control a lethal disease. The latter is given by mouth in doses of about ½ grain; or the hypodermic solution of the acid may be used once daily. It contains ¾ grains of the

acid and in 1 c.c., which should not be exceeded. (Martinda'e).

In the consideration of the reasons for the beneficial effect of arsenic in so many cases of Hodgkin's disease, analogies with other diseases which are known to be infective suggest themselves.

Thus, the most potent known remedy in sleeping sickness, a trypanosome disease, is atoxyl, an organic compound of arsenic which rapidly drives the parasites from the peripheral blood. This remedy has also been found recently to be effective in syphilis, a spirochæte disease. Moreover, the workers of the Liverpool School have recently found that if the use of atoxyl in sleeping sickness be followed up by mercury, thus attacking the second phase of the trypanosome's existence, the results are much more brilliant and more permanent. The favourable effect of arsenic and the cacodylates on Hodgkin's disease might easily be due to destruction say of a particular form of spirochæte which has hitherto evaded detection in the absence of the right staining methods to demonstrate it. Recollecting the long, fruitless hunt for the infective agent in syphilis and its final victory in the hands of Schaudinn, this does not seem a wild conjecture; and the report of the actual finding of such parasites, previously referred to, is at least very suggestive. The trial of atoxyl and mercury hand in hand might prove worth while in Hodgkin's disease.

THE X-RAY.—This is the treatment that appears at present to be giving the best results. Dr. G. W. Morris, of Philadelphia, writes me: "It seems to nearly double the length of life—four to six years, instead of two or three." And Dr. Longcope, of the Pennsylvania hospital, says: "As for X-ray treatment, I may say that two of our cases received 25 exposures of ten minutes duration with the anode eight inches from the skin; one case received 50 exposures, each dose varying from ten to fifteen minutes in duration with the anode six to ten inches from the skin. A small Willyoming induction coil was used with a six-inch spark and a four-inch Queen tube. The exposures were made, I think, about every week or ten days, but perhaps sometimes less frequently. The writer in conclusion tenders his thanks to Dr. T. C. Janeway, of New York, Drs. G. W. Morris and Warfield Longcope of Philadelphia. Dr. B. F. Cline, of Post-Graduate Hospital, New York, and Dr. Channing Simmons, of Massachusetts General Hospital, Boston, for their kind asistance in supplying literature, information on doubtful points, and the fine slides from which my friend, Dr. L. M. Murray, will demonstrate to you the histological picture of the study in Hodgkin's disease.

IMMUNITY AND SERUM THERAPHY.

By EDWIN B. ROACH, M. D.,

Halifax, N. S.

(Read before the Halifax and Nova Scotia Branch British Medical Association, February, 1908.)

SERUM theraphy in a "strict" sense of the word means the injection into the body of antitoxic or antibacterial serums for prophylactic or curative purposes. It depends upon the fundamental fact that our body cells have a way of rising to an emergency when compelled to defend themselves against the invasion of foreign cells, and of producing substances antagonistic to such cells or their products.

The condition called Immunity is at the foundation of the principles of serum therapy, and it may be of benefit to deal first, briefly, with this condition. An immune individual or animal is one who exhibits unusual or complete resistance to an infection to which other individua's or animals are in a greater or less degree susceptible. Our use of the word immune is confined in medicine to the infectious diseases, never being applied to such proceses as Bright's disease or arterio-sclerosis. No medical fact is more widely known than that an attack of certain of our infectious diseases brings about some change in the patient's tissues which protects him, or renders him immune, against further attacks of the same disease. Hence, as the patient was previously susceptible, the new property is an acquired one, and he is now said to possess an acquired immunity against this infection. Many diseases which man is subject to cannot be inoculated into animals, for example scarlet fever and measles, nor can man be inoculated with chicken cholera; and it is well known that the negro is less susceptible to yellow fever than the white man. These are examples of natural resistance, not as a result of having had the disease, and can be called a natural immunity. Immunity is then in the main of two kinds, (1) natural, and (2) acquired.

The difference between the two as you can readily see is that natural immunity is for the most part an inherited condition, whereas acquired immunity is the condition produced by some infectious disease, which condition protects him against further attacks of the same disease. On the contrary, to an inherited or natural immunity, we see many examples of what is no doubt an inherited susceptibility to some diseases running in families, as cancer and tuberculosis. Experimental work on animals has proved within certain limits than an immunity to certain infections, e.g., tetanus, acquired by a female, may be transmitted to her offspring. You have all noticed that in a given family there may be a marked difference in the susceptibility or again in the resistance of its members to disease.

Last November, in a family of six children, ranging in age from fourteen years down to eight months, three had a typical mild attack of scarlet fever. The two oldest had fever, sore throat, headache, etc., but not any rash, while one girl, in about the middle of the lot as to age, escaped altogether, although she was constantly mingling with the others. This last child no doubt is an example of natural immunity to scarlet fever.

The preceding facts in regard to immunity were familiar long before anything was known about the principles on which they depend. It has become necessary to recognize special types of immunity although they all fall under the headings, *natural* and *acquired*. Of the special types are antibacterial and antitoxic. In such diseases as typhoid and cholera there are pronounced toxic symptoms; the poisonous substances seem to be integrally associated with the protoplasm of the specific bacteria, and are not secreted in a soluble or diffusible form by the living bacteria. These poisonous substances are ixtracellular toxins, spoken of as endotoxins, and only supposed to be liberated after the bacteria are killed and dissolved. After an attack of typhoid fever, or cholera, the blood serum is able to kill the respective bacteria, but cannot neutralize their toxic substances. From the basis of the nature of the serum, you can see that immunity to such diseases as typhoid and cholera is antibacterial—not antitoxic. On the other hand the symptoms of tetanus are produced not by the contact of the bacteria with the tissues of the nervous system but, by the soluble toxin which is secreted by the tetanus bacilli and blood in the wound, and conveyed by the lymphatic and blood channels to the nervous system. The serum of a person or animal who has acquired immunity to tetanus or diphtheria is able to neutralize the corresponding soluble toxin, hence such immunity is antitoxic rather than antibacterial, the difference between the two being an important one.

Again immunity may be said to be active or passive. Active immunity is that state of the tissues produced by the chemical changes that have taken place between the infecing bacteria and the body cells, while on the contrary passive immunity is the resistance established by the injection of a serum, as diphtheria antitoxin which already contains substances able to neutralize the toxins of the disease.

Anyone of the above types may be relative or absolute. If absolute, infection is impossible; while if only relative, different conditions may render infection possible, by lowering the resistance of the body, as exposure, overwork, hunger, etc.

By proper combination of terms one may describe accurately the different types of immunity. For example a child who has received a prophylactic injection of diphtheria antitoxin is in a state of acquired passive antitoxic immunity to diphtheria. If immunity to typhoid has developed as a result of the disease, the condition is that of acquired active antibacterial immunity.

Bearing in mind the significance of the above terms, we may pass on to some of the most important serotherapeutic measures, and for sake of simplicity, we may consider the principles involved in serum theraphy under the headings (1) Antitoxins, (2) Antibacterial Serums, (3) Vaccination.

ANTITOXINS.—The neutralization of a toxin by an antitoxin implies a chemical change between the two substances. Outside the body there is no third substance with which either will unite, but in the body the conditions are more complex. In the body two combinations are possible for the toxin: one with the antitoxin which has been introduced, the second with the tissue cells. Certain experiments have illustrated not only the rapidity with which a toxin may be bound by the tissues, but also the way in which antitoxin affects a cure

In relation to tetanus Donitz found that if the toxin were injected first, and the antitoxin four minutes later, a quantity of antitoxin slightly in excess of the neutralizing dose was needed to prevent tetanic symptoms; if he waited eight minutes six times as much antitoxin was needed; after sixteen minutes twelve times as much antitoxin was needed; and after an hour twenty-four times the neutralizing dose was required. Practical experience with diphtheria has shown that the longer the disease has lasted the greater the quantity of antitoxin required for a cure. The curative action of antitoxin depends not only upon the neutralization of the circulating toxin, but also upon the wresting away from the tissues of the toxins which have been bound. To release the tissue-bound toxin, a much greater amount of antitoxin is needed than is required to neutralize the circulating toxin. When diphtheria or tetanus has advanced so far that no amount of antitoxin will affect a cure, the relation of the toxin to the tissue cells is supposed to be something more than a chemical union, the toxin having become an integral part of the cell protoplasm. Antitoxin cannot repair the damage already done by the toxin, as this depends upon the recuperative power of the cells; hence antitoxin cures by tearing away from the cells probably not all, but so much of the toxin, that what remains is not fatal to the life of the cells.

Two important principles of antitoxic theraphy are (1) early administration before a fatal amount of the toxin has been found, and (2) the necessity of injecting sufficient quantities. The comparative study of diphtheria and tetanus has been of great help in understanding the principles of antitoxic therapy. In diphtheria the affinity between toxin and antitoxin is relatively strong, as complete neutralization takes place in a test tube in fifteen minutes, whereas in tetanus the affinity between the two is weak, as about forty minutes is required for neutralization. Clinical experience has shown that the affinity between diphtheria toxin and tissue cells is less than that of tetanus toxin, as diphtheria may readily be cured on the second or third day of the disease, whereas tentaus is rarely cured. From this we may infer that the diphtheria toxin is so situated in the body that it is accessible to the antitoxin.

For the success of antitoxin therapy the following factors are important: (1) concentration of the serum, (2) freedom from contamination, (3) time of administration, (4) quantity injected, (5) degree of affinity between toxin and tissue cells, (6) amount of toxin which may be bound without fatal issue, (7) accessibility of toxin in the body for the antitoxin. The above relates to the curative action of antitoxin, but it is evident that its use as a prophylactic agent is of a simpler nature, as for this purpose it has opportunity to be uniformly distributed in the lymphatic and blood circulations where it can meet and neutralize the toxins before they have had time to become bound by the tissue cells. The high value of tetanus antitoxin as a prophylactic probably depends upon this condition. The immunity afforded by a prophylactic injection of an antitoxin is short, probably not more than two or three weeks in duration.

Antibacterial Serums.—Mention has been made of certain organisms whose toxic substances are integrally associated with the protoplasm of the cells. Certain of these organisms, such as those of typhoid fever, acute dysentery and cholera cause the de-

velopment of strong antibacterial serums in the immunized animal. Such serums have no power to neutralize the endotoxins of the corresponding organisms, but can destroy the living organism. These serums have not been successful curative agents, although in test glass experiments they can kill large numbers of organisms. This seems to depend upon the fact that they only have the power of destroying the organisms, and do not in any way seem to netralize the toxin that is circulating or already bound by the tissues. In animal experiments they have proven much more powerful as a prophylactic than as a curative agent. The duration of the immunity as in the case of antitoxins is of short duration. For this reason they do not seem suited for general prophylactic use in man, but when combined with vaccination may be of distinct value.

In animal experiments antibacterial serum can save lives provided the serum is injected before or very shortly after the bacteria are introduced. By injecting the vibrio of cholera and anticholera serum simultaneously, it has been found that a guinea pig may readily be saved from ten times the fatal dose. After a few hours a sufficient amount of serum to kill all the vibrios may be injected, yet the animal will die from the action of the endotoxins which have been liberated on the death of the bacteria. In such a case the organisms have proliferated to such an extent, that the mass of bacteria though dead, contained a fatal amount of endotoxin, therefore, the administration of an antibacterial serum may be injurious rather than beneficial because it dissolves or destroys so many bacteria that a fatal amount of endotoxin is liberated.

Having determined the amount of antibacterial serum that will save the life of a guinea pig from an incipient infection, on the basis of weight, one may calculate the amount required to save a man. Frequently it amounts to hundreds of cubic centimetres, an almost impossible quantity. The drawbacks to its use are therefore the large amount required and the fact that usually the infection is well established before the physician is called upon to treat the case.

Vaccination.—By vaccination we generaly think of the protective inoculation against small-pox, but it can also be used in all instances in which the attenuated or killed virus of a disease is inoculated to establish resistance to an infection. The process set in motion by vaccination is one of active immunization in which the cells form specific antibodies over a long period of time, thus the resistance established is more protracted than that produced by passive immunization. In diseases such as typhoid, cholera, plague, etc., where the specific bacillus is known, living or killed organisms are inoculated. Protection does not immediately follow an inoculation as it requires several days for the formation of the necessary amount of antibodies, as is the case in small-pox.

Following the inoculation there is a period of decreased resistance termed the "negative phase," during which time there is an increased susceptibility to infection. This negative phase lasts a day or two and during this time the amount of anti-bodies is decreased. During this time a second injection should not be given as it causes a further decrease in the antibodies. Following the "negative phase" is the "positive," during which time antibodies in large numbers are produced. By proper spacing of injections, a high state of immunity may be induced.

The diseases of chief interest to us in which serum therapy may be of benefit can be grouped roughly as follows:

Group I includes such diseases as diphtheria, tetanus, hay fever, snake venom, infections by bac. pyocyaneous, etc. The symptoms are caused by soluble toxins of animal, plant or bacterial origin. Infection or immunization induces immunity to subsequent attacks (except in hay fever), the immunity being characterized by the formation of serum antitoxins. The serum of highly immunized animals is protective or curative for the corresponding intoxications in man. Of this group of diseases the therapeutic use of serum is at the present day well established in diphtheria, both as a prophylactic and curative agent. In tetanus the prophylactic use of antitoxic serum is an almost absolute preventative of the disease, but as a curative agent its use is dependent upon its early injection after infection. In hay fever, which is caused by a soluble toxin of the pollen of such plants as rye, maize, wheat, barley, millet, rice, etc. we have for serotherapeutic purposes, an antitoxin called pollantin or Dunbar's antitoxic serum obtained by immunizing horses with the toxin. It is reported to be of undoubted value in a certain percentage of cases, but unaccountably fails in others. It is supposed to be most effective when used in the prodromal stages of the disease. The antitoxin comes in small bottles with a pipette. Dose several drops instilled in eye or nose. The cure is only temporary and one should carry a small vial during the hay fever season.

Snake Bites.—For the treatment of snake bites there is the antivenin of Calmette, obtained by immunizing horses with a mixture of venoms—eighty per cent. cobra and twenty per cent. viperine venom attenuated before injection. It requires six months to produce a strong serum. This serum is not of use in all snake bites, having little influence in that from the rattlesnake. Noguchi has produced a serum that promises to be of practical value in the treatment of rattlesnake bites. The antitoxin to be effective must be administered not later than a few hours after the bite.

Group II. includes such acute infectious diseases as typhoid fever, acute dysentery, cholera, plague, anthrax, and other rarer conditions as meat-poisoning by bac.-enteritidis, colon bacillus, mata fever. These diseases are caused by bacteria which do not secrete soluble toxins, but contain endotoxins. Infection or immunization causes immunity for a prolonged period. The serum in acquired immunity is antibacterial and protective for other animals, but of little curative value. The formation of antibodies is not yet established, but in most instances vaccination has been accomplished.

Typhoid.—There are two methods of specific prophylaxis: (1) the injection of antityphoid immune serum (2) preventive inoculation with killed cultures of the bacilli. Antityphoid serum confers a strong and almost immediate immunity, which is of short duration, because of its rapid elimination. On this account its use as a general preventitive is not so advocated. Wright has proved the utility of preventive inoculations of bacilli. The method has been carried on extensively in the British regiments in India and South Africa where the mortality has been reduced by one half. The protection from these inoculations generally lasts two years or more, although in some instances reinfection has occurred in

from three to six months. In France by the use of antibacterial serum the mortality of typhoid was reported as sixty per cent., whereas among cases untreated it was ten or twelve per cent.

CHOLERA. — Protective inoculation has shown itself to be of distinct value as a prophylactic. Serum therapy in cholera has been no more successful than in typhoid.

ACUTE DYSENTERY.—In acute dysentery, treatment by serums or inoculations is as yet not proven to be on a practical basis. At the Rockfeller Institute, the serum has not proven to have any distinct value. Serums produced by such investigators as Shiga, Kruse, Rosenthal are reported as having reduced the mortality to one-third that of the untreated disease.

PLAGUE. — Prophylactic injections of antiplague serums produce a temporary immunity of about two weeks duration. On the basis of results obtained these serums have no positive curative value, but the course of the disease is favourably influenced. Vaccines have been used quite extensively by an Indian plague commission, with beneficial results, although many of the inoculated contracted the disease in a mild form.

ANTHRAX.—Vaccination with an attenuated culture of the organism has caused a decrease of the disease in heavily infected districts with a consequent decrease of the disease in man. The serum treatment is of value as a protective agent, but less so as a curative, the serum having no effect after the invasion of the blood stream by the bacilli.

Group III. includes acute infectious diseases in which acquired immunity is not of long duration. The most important are the infections due to the pneumococcus, staphylococcus, meningococcus, streptococcus, influenza bacillus and the gonococcus.

PNEUMONIA.—In the treatment of pneumonia some of the serums have been used therapeutically in man. So far the results have not been satisfactory, although some favourable results have been reported. From the material at hand I cannot find that vaccination has been practised to any extent even as an experiment. This I would suppose to be difficult, as many different organisms may be the cause of pneumonia.

STREPTOCOCCIC INFECTIONS. — The serum treatment is not at the present day believed to be on a sound basis as a curative agent, but its use gives favourable results in lowering of temperature and an improvement of the general condition. It is being used in cases of puerperal septicæmia, scarlet fever, erysipelas, cellulitis, acute rheumatic fever, etc., with decided benefit in many cases. In erysipelas and cellulitis, I have used it with marked beneficial results. In cases of scarlet fever and rheumatism it is of benefit in combating the complications which are no doubt due to the streptococcus.

Vaccination against streptococcic infections can produce immunization.

The treatment of staphylococcic infections is much the same as that of those due to the streptocossus, but vaccination has been most successful as shown by Wright in the cure of obstinate cases of acne, furunculosis and sycosis barbæ.

In gonococci and menirgococcic infections, serums have been used, and shown to have had some protective power in animals, but as yet have not been demonstrated to be of use in man.

Group V. includes infectious diseases which usually are chronic, but may run an acute course. Of these

the chief are tuberculosis, leprosy, glanders, and actinomycosis. Infection produces little or no immunity, and the serums of immunized animals show little or no protective power for man. Tuberculosis being such a widespread and fatal disease, it may be interesting to note what has been done in an experimental line in the serum treatment of this disease. Of the toxic preparations of the bacillus the greatest interest has been attached to tuberculin. This is used for specific diagnostic purposes, and if properly administered has certain curative effects. A healthy man is not susceptible to a moderate dose, but in the tuberculous, it often causes an intense reaction. There are certain limitations to its use among which are: (1) The test cannot be applied to febrile cases, as the preexisting fever cannot be separated from that which the tuberculin produces. (2) Cases of advanced tuberculosis frequently fail to give the reaction as the tissues of such patients have become resistent to the poison. (3) It is said the tuberculin often cases the same reaction in leprosy, actinomycosis and syphilis.

On account of the reaction it produces around tuberculous areas, with a possible dissemination of the bacilli, its use as a diagnostic and therapeutic agent is accompanied with some danger, but Osler says, that "in obscure internal lesions, in joint cases, and in suspected tuberculosis of the kidneys, its use gives most valuable information." For therapeutic purposes, minute doses are used. One-tenth to one-twentieth of a millegramme, is the initial dose. The dosage is gradually increased over a period of months until a dose of 50 millegrammes is reached by which time the patient has lost his power of reaction. It is then discontinued until he again becomes sensitive. A cure is recognized when the patient has permanently lost his power to react.

Antitubercular serums have been produced by Marmorek and Maragliano. The latter claims that it is possible to immunize the animal organism against tuberculosis, as in other infections, and that there is hope for antitubercular vaccination for man. The results of serum treatment are very conflicting.

In leprosy and glanders, serum treatment has not been of very decided value.

Group VI. includes diseases of unknown etiology, among which there are syphilis, small-pox, scarlet fever, whooping cough, measles, chicken-pox, and acute rheumatic fever.

Vaccination and serum therapy in syphilis are future possibilities, but so far no true antisyphilitic serum has been produced. Small-pox, I need not mention. In scarlet fever and acute rheumatism the use of antistreptococcic serum has been spoken of. For measles there is as yet no serum therapy, but it is stated that the serum of convalescents exerts a favourable influence on the course of the disease. In whooping cough, experiments in the use of serums have been going on. Reports of cures in from two to twelve days are given where the serum was used within the first fifteen days of the disease.

In conclusion, I may say that the future possibilities in this field of medicine are great. Much has already been accomplished, and we are daily seeing cases of diphtheria, small-pox, etc., saved, which before the days of antitoxin and vaccination, were beyond the chance of a cure. I think the day is not very far distant when a great many, if not all diseases due to micro-organisms will be successfully treated by specific serums and vaccination.

SOCIETY MEETINGS.

PRINCE EDWARD ISLAND MEDICAL SOCIETY.

HELD AT CHARLOTTETOWN, FEB. 19th, 1908.

IN accordance with a resolution passed at the annual meeting of the society, a meeting was held in the Board of Trade rooms (Market Building).

The meeting opened with the President, Dr. Alex. McNeill, Summerside, in the chair. Those present were: Drs. Johnson, MacLauchlan, Jenkins, Ralph, Carruthers, R. MacNeill, Warburton, Goodwill, Dewar, Conroy, Charlottetown; Dr. MacDonald, Peake's Station; Dr. Beer, Cherry Valley; Dr. MacIntyre, Montague; Dr. Barnes, Murray River; Drs. MacKay, Jardine, Kensington; Drs. A. MacNeill, Jardine, MacLennan, Summerside; Dr. Houston, Crapaud; Dr. Walsh, Mount Stewart; Dr. Sullivan, Souris.

The first paper read was that of Dr. Barnes, of Murray River, on "Rates of Charges and Tariff," in which he compared the rates of charges in this province with those of other provinces and countries, and conclusively showed that charges in Prince Edward Island are much less than those of most or nearly all other places. After considerable discussion the following resolution was passe':

Moved by Dr. McDonald, seconded by Dr. Houston, "That a committee be appointed to prepare a scale of fees, a copy of which should be sent to each member previous to annual meeting.

Committee appointed as follows: Dr. McDonald, Peake's Station; Dr. McLellan, Summerside; Drs. Warburton, Carruthers and Jenkins, Charlottetown.

Dr. Ralph, of Charlottetown, then read a very interesting paper on "Ambulatory Typhoid." This paper was discussed by Drs. Carruthers, McNeill and Conroy. Much praise was given Dr. Ralph for the scientific character of this paper and for the points of diagnosis raised.

Dr. Warburton exhibited a case of fracture of the tibia and fibula, showing the vast amount of injury to bone which may sometimes follow an apparently slight cause.

The next paper read was on "Subphrenic Abscess," by Dr. MacIntyre, of Montague. This was a splendidly written paper and caused an interesting and instructive discussion. Dr. Conroy, at considerable length described two cases occurring in his own practice recently, and emphasized the difficulty of accurate and early diagnosis in such cases.

Dr. MacLauchlin next exhibited a case of gun-shot wound with perforation of the abdominal wall and stomach, operated on ten hours after the injury with recovery. The point of interest in this case was the fact that recovery was not interrupted notwithstanding the fact that shreds of dirty clothing were carried into the peritoneal cavity. This exhibit elicited a very interesting and instructive discussion by Dr. H. D. Johnson, on gunshot or rifle wounds as seen and treated in South Africa during the South African War.

At the evening session the first paper read was by Dr. Jardine, Summerside, on the "Treatment of Pneumonia." A lengthy discussion followed in which most of those present participated. From the wide range of treatment advocated and adopted by various practitioners it would seem that no hard and fast rules for the treatment of this disease have yet been arrived at.

Dr. Conroy then read a paper of much value on "Gangrenous Appendicitis," especially noting the necessity of early diagnosis of the condition. A good discussion followed in which Dr. Jenkins advocated early operation in all cases, while some others present took issue with him.

Dr. Maclauchlan then read a paper on the "Treatment and Prevention of Consumption in this Province." This paper was ably discussed by Dr. H. D. Johnson, Health Officer of Charlottetown, Drs. MacLellan and Jardine, of Summerside, Dr. R. MacNeill, Dr. Houston, and others.

As an outcome of this discussion, the following resolution was moved by Dr. MacNeill, seconded by Dr. MacLauchlan, Charlottetown, and carried: "Whereas it is desirable that the public be fully instructed in the means of preventing disease, and whereas the ravages of consumption need to be met promptly, therefore Resolved: That a committee be appointed to petition the local parliament for aid and support in this matter."

The following committee was then appointed: Dr. H. D. Johnson, Dr. MacLaughlan, Dr. R. MacNeill, Dr. MacLellan.

The last paper of the evening was by Dr. MacLellan, on "Our Duties as Physicians," and notwithstanding the lateness of the hour, a wholesome discussion followed. The excellent character of this paper was a fitting closing to a meeting which for the superior character of the papers read and the discussions which ensued, has had no rival in the history of the society.

THE COLCHESTER ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

[In response to our request, Dr. Smith L. Walker, the indefatigable secretary of the Colchester Association for the Prevention of Tuberculosis, has provided us with the following report of the work of this pioneer of such associations in Nova Scotia. We feel that it is only just to say that not only the organization, but practically all the subsequent accomplishment of the association, is due to the energy and unflagging interest of Dr. Walker.]

THE Colchester Association for the Prevention of Tuberculosis was organized in January, 1905, and has been carrying on a quiet work of educating the people of this county as to how tuberculosis is acquired, and how it may be prevented. This is being done by means of the distribution of suitable literature and by public lectures. Much of the literature distributed has been issued by the Canadian Association, and the balance by our local Society.

At the annual meeting held March 7th, 1907, Councillor Mosher was instructed to call the attention of the Board of Health of Truro to the necessity of requiring notification of

cases of consumption. The Secretary was appointed a delegate to the Annual Meeting of the Canadian Association at Ottawa, which he subsequently attended.

On April 19th, the Municipal Council voted $50 to the funds of the Association, and $100 to pay one dollar per week to aid patients from Colchester at the Kentville Sanatarium. Public lectures during the year have been delivered by the Secretary in the following places in this County and vicinity: Milford, Shubenacadie, Londonderry, Great Village, Economy, Bass River and Parrsboro. On five occasions lectures were delivered before the pupil teachers of the Provincial Normal School. On all these occasions a generous distribution of pamphlets was made.

Over 1000 copies of the last annual report of the Canadian Association were distributed in this county alone, the General Secretary sending out 750 copies direct to individuals. He has also franked over 500 copies of Mr. Miller's tractate on Consumption which was issued last October by the Federal Department of Agriculture. These and copies of all other circulars have been sent to the 130 school teachers in the county, and a circular especially prepared for these teachers is now in the hands of the printers. It is expected to secure the hearty co-operation of the teachers in the work of public education.

It is estimated that by personal and mail distribution, over 200,000 pages of reading matter regarding Consumption has been placed in the houses of the people of Colchester county during the past year.

At the January 1908 session of the County Council resolutions were passed as follows: (1) To continue the aid to patients at Kentville to the extent of $100. (2) To grant $50 to the Colchester Association. (3) To expend up to $100 to pay a district nurse who will give practical instruction in nursing of consumptives. (4) To ask the Council of Public Instruction to secure changes in the Health Readers, that suitable information regarding consumption will be given.

The work of this Association has been possible on account of the very generous aid afforded by the Municipal Council. It is difficult to note definite results in this campaign, but in no other county is there such a general and intelligent knowledge of the nature of Consumption as exists to-day in Colchester.

Anti-Tuberculosis Society in Newfoundland.

ST. John's, Nfld., has at last been aroused to take steps to prevent the spread of tuberculosis, and a public meeting held recently was largely attended by the most influential men of the place.

His Excellency, the Governor, himself a medical man, took the chair, and he was supported on the platform by Archbishop Howley and Bishop Jones, the Mayor of St. John's, and many others. The addresses given were very practical and most interesting, and as a result of the meeting an association was formed, with the Hon. John Harvey, President; Dr. Rendell and Mayor Gibbs as Vice-Presidents, and a number of city doctors and prominent laymen as a committee. The association will immediately take steps to, in every way possible, combat the spread of this disease which has been increasing with alarming rapidity throughout the Island.

SIXTEENTH INTERNATIONAL CONGRESS

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

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

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

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

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

The following is taken from the advance announcement received from Budapest:—

The Congress is divided into the following departments: Anatomy, Embryology, Histology; Physiology; General and Experimental Pathology; Microbiology (Bacteriology), Pathological anatomy; Therapeutics, (Pharmacology, Physical hygiene, Balneology), Internal Medicine; Chirurgury; Obstetrics and Gynæcology; Opthalmology; Diseases of Children; Diseases of the Nervous System; Psychiatrics; Dermatology and Syphilography; Urology; Larngology; Otology; Stomatology (Dental and oral surgery); Hygiene, and Doctrine of Immunity; Jurdicial medicine; Military and naval surgery; Navigation medicine and tropical diseases.

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

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

By the 31st of January, 1909, reporters have to hand the manuscript

of their reports into the office of the Congress; and the members of the representative departments receive them in print, sent to their abodes, by the 31st July.

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

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

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

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

Only such of the discretionally announced lectures will be published, whose authors have delivered them personally at the Congress, and the copies of which the executive committee, in accordance with the decision of the presidency of the department, have determined.

The time allowed for the statement of reports must in no case exceed twenty minutes, for other deliveries, fifteen minutes, for the discussions, for the former, ten, for the latter, five minutes. The answers of lecturers may be extended to ten minutes.

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

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

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

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

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

The programme of social gatherings, of railway rates, of accomodation, and of excursions will be published by the 30th of April, 1909.

INTERNATIONAL CONGRESS ON TUBERCULOSIS AT WASHINGTON, D. C.

THE coming International Congress on Tuberculosis at Washington, D. C., in September, 1908, will be an unique event in the New World.

This Congress meets once in three years, it has never met in America, and after 1908, will not meet in the United States for many years to come.

The Congress will put the people of America in the relation of host to the leaders of this movement in all parts of the world. It will be a real world's congress. It will carry on, for three weeks, public discussions of the tuberculosis problem, led by the most eminent authorities on this subject, in this and other countries. Official delegates will be present from nearly all civilized countries. There will be a course of special lectures to which all members of the Congress and the general public are invited.

The Congress will be divided into seven sections, giving ample scope for participation of both scientific and lay members.

There will be a great tuberculosis exposition, in which one can see what is going on, the world around, in the campaign against tuberculosis.

There will be clinics and demonstrations throughout the whole period of three weeks, giving medical and lay delegates object lessons on the causes and prevention of tuberculosis.

There will be very valuable publications, of which the transactions will be the most important. The transactions of the last Congress are published in three volumes. The proceedings of this Congress will require four volumes. These are free to all members of the Congress, who have paid their membership fee ($5.00).

The cost of the Congress will far exceed the revenue derived from fees. This cost will be provided for by a special Committee of the National Association for the Study and Prevention of Tuberculosis, which will invest a large sum in the project.

The American membership should number ten thousand persons. There are two classes of members: Active members, who pay a fee of $5.00; and associate members, who pay a fee of $2.00, and have all the privileges of membership, except the right to vote and to receive the printed volumes.

In October, 1891, Thomas George Hodgkins, Esquire, of Setauket, New York, made a donation to the Smithsonian Institution, the income from a part of which was to be devoted to "the increase and diffusion of more exact knowledge in regard to the nature and properties of atmospheric air in connection with the welfare of man."

In the furtherance of the donor's wishes, the Smithsonian Institution has from time to time offered prizes, awarded medals, made grants for investigations, and issued publications.

In connection with the approaching International Congress on Tuberculosis, which will be held in Washington, September 21 to October 12, 1908, a prize of $1,500 is offered for the best treatise that may be submitted to that Congress "On the Relation of Atmospheric Air to Tuberculosis."

The treatise may be written in English, French, German, Spanish or Italian. They will be examined and the prize awarded by a Committee appointed by the Secretary of the Smithsonian Institution in conjunction with the officers of the International Congress on Tuberculosis.

The right is reserved to award no prize if in the judgment of the Committee no contribution is offered of sufficient merit to warrant such action.

The Smithsonian Institution reserves the right to publish the treatise to which the prize is awarded.

Further information, if desired by persons intending to become competitors, will be furnished on application to Charles D. Walcott, Secretary, Smithsonian Institution, Washington, D. C.

PRIZES IN ANTI-TUBERCULOSIS COMPETITION.

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

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

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

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

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

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

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

lence. Entry may be made under competitor's own name.

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

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

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

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

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

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

VII. Prizes for Educational Leaflets:

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

Competitors must be entered under assumed names.

A. For adults generally (not to exceed 1,000 words).

B. For teachers (not to exceed 2,000 words).

C. For mothers (not to exceed 1,000 words).

D. For in-door workers (not to exceed 1,000 words).

E. For dairy farmers (not to exceed 1,000 words).

F. For school children in grammar school grades (not to exceed 500 words).

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

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

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

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

IX. A gold medal and two silver medals are offered for the best exhibits sent in by any State or Country (the United States excluded), illustrating effective organization for the restriction of tuberculosis. Each

medal will be accompanied by a diploma or certificate of award.

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

A. For the best contribution to the pathological exhibit.

B. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any State of the United States. Brief required.

C. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any State or Country (the United States excluded) Brief required.

D. For the best exhibit of laws and ordinances in force June 1st, 1908, for the prevention of tuberculosis by any municipality in the world. Brief required.

E. For the society engaged in the crusade against tuberculosis having the largest membership in relation to population. Brief required.

F. For the plans which have been proven best for raising money for the crusade against tuberculosis. Brief required.

G. For the best exhibit of a passenger railway car in the interest of the crusade against tuberculosis. Brief required.

H. For the best plans for employment for arrested cases of tuberculosis. Brief required.

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

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

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

PERSONALS.

DR. R. E. and Mrs. Mathers left on a trip to the Mediterranean last month, and will probably return in April.

Dr. T. W. P. Flinn has been appointed by the United States Government, Medical Inspector of Immigration at this port, in place of the late Dr. C. D. Murray.

Dr. J. L. Cock, formerly of Wabana, Newfoundland, lately returned from London, where he obtained the double qualification of the R. C. S. (Eng.) and L. R. C. P. (London). Dr. Cock has taken the office formerly occupied by the late Dr. Goodwin, Morris Street.

Dr. W. B. Almon has resigned his position as physician to the Salvation Army Maternity Home, after having faithfully performed the duties for three years.

Dr. W. H. Eagar has returned from Boston and New York, after taking a course in X-ray work.

Dr. H. B. Chamberlain, of Glenwood, Nfld., has gone to Montreal, where he will enter hospital for treatment.

Dr. A. Yale Massey (M. D. Toronto, 1887) has opened an office at St. John's Nfld., for the treatment of ear, eye, nose and throat. Dr. Massey has been some years in practice in South Africa.

Dr. E. F. Moore has removed from Cheverie to Wolfville, and has established himself in practice in that beautiful town. That he will have abundant success is the wish of his many friends.

Dr. J. A. Murray, formerly of West River, Pictou County, has also removed to Wolfville.

Dr. H. K. MacDonald, formerly of Lunenburg, has removed to this city, having bought the house, 28 Morris Street.

On Monday evening, March 16, a banquet was tendered in the Parish Hall at New Aberdeen, C. B., to Drs. M. T. Sullivan and E. O. McDonald, both of whom recently arrived home from Scotland where they have been taking post-graduate courses. The banquet was tendered by the C.M.B.A., L.O.C., and A.O. H. Societies, and was attended by about two hundred guests.

WORK.

Let me but do my work from day to day
In field or forest, at the desk or loom,
In roaring market-place or tranquil room ;
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
"This is my work ; my blessing, not my doom.
Of all who live, I am the one by whom
This work can best be done in the right way."
Then shall I see it not too great, nor small,
To suit my spirit and to prove my powers ;
Then shall I cheerful greet the laboring hours,
And cheerful turn, when the long shadows fall
At eventide, to play and love and rest,
Because I know for me my work is best.

HENRY VAN DYKE.

OBITUARY.

THE late Dr. F. N. Burgess was born at Newport, Hants County, in 1841. After completing his preliminary education at the Horton Academy, Wolfville, he entered upon the study of medicine under the preceptorship of the late Dr. Parker. After graduating from Harvard University in 1865, Dr. Burgess served as assistant-surgeon with the Federal army during the American war. At the close of the war, he returned to Nova Scotia and entered upon the practice of his profession in Hants County. Here he enjoyed a large practice until 1901, when, owing to ill health, he was obliged to retire from active work. He then settled at Hantsport, where he devoted himself to office and consultation practice. He was connected with several medical societies, and always took an active interest in their meetings.

As a man, he was genial and affable in his disposition, and he possessed the esteem of a large circle of friends. ❖ ❖ ❖

Dr. Alexander M. Sommerville died at Rothesay, New Brunswick, on March 10th. He was fifty-eight years of age, and had been ill for some time.

For the last fifteen years he had been practising medicine at Hatfield's point and through the surrounding country where he was greatly esteemed.

ROENTGEN RAY IN EPITHELIOMA.

(W. A. PUSEY, Chicago, *Journal of the American Medical Association*, January 11, 1908.)

Pusey gives his personal experience with the X-ray in patients treated more than three years ago. Excluding a few cases which at the time of beginning treatment were complicated with demonstrable carcinoma of neighboring glands the total number of epitheliomas treated is 119. He has been able to follow up the record of all but 8 of these, leaving 111 to be considered. Of this number, 80 patients are either well to-day or have died from other causes without recurrence of the epithelioma. Eight are well over five years, 22 over four years, 32 over three years, and 6 were living more than three years, but have since been lost trace of. Two patients are counted as practically cured. One of these died of pneumonia fifteen months after treatment with a minute suspicious-looking spot remaining unhealed. In the other there is small non-progressing ulcer resembling an X-ray burn. In both cases the original disease was very extensive. Seventeen patients are classed as only distinctly benefited; that is, the disease was checked and life prolonged with comfort for at least a year, except in one case in which the patient, a man over 80, died within the year. All of these cases were recurrences after surgical removal of the growth and hopeless as regards other treatment than the X-ray. Brief reports are given of several of these cases. In only 12 of the whole number was the treatment counted as a failure, though in several there was some benefit afforded. Counting all the 31, however, which are classed as not entirely successful or as failures, there remain 80 cures out of the 111, or 72 per cent., a showing which Pusey thinks will equal that afforded by any other method of treatment.

CURRENT MEDICAL LITERATURE.

INTERNATIONAL CLINICS: A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. By Leading Members of the Medical Profession Throughout the World. Volume IV., Seventeenth Series, 1907. PUBLISHED BY J. B. LIPPINCOTT COMPANY, PHILADELPHIA AND LONDON.

"The Treatment of Tetanus by Intra-Spinal Injections of Magnesium Sulphate," by J. N. Henry, M. D., of Philadelphia, gives a report of four cases, one of which recovered. Great relief from suffering was experienced by all of the patients, and this should at least commend itself to physicians. Dr. A. S. Warthin, of the University of Medicine, writes of "The Value of Rœntgen Irradation and the Administration of Arsenic in the Treatment of Leukæmia." He considers this combination the best means of delaying the fatal issue of leukæmia. "Five Years' Experience with an Anti-Typhoid Serum," by Professor A. Chantemesse, of Paris, gives the author's series of cases, 712 in all, of typhoid fever, treated by this method. The deaths numbered 27, leaving the death rate at 3.7 per cent. Whereas the number of cases of typhoid in the fourteen large hospitals of Paris during nearly the same period, was 3,595; deaths 753, and death rate 17.3 per cent. Other observers have likewise treated several hundred cases by this serum with equally good results. Several temperature charts showing the effects of the serum are included in the article. Dr. Alexander McPhedran, of Toronto, writes on the "Urgency of Early Diagnosis of Cancer of the Stomach." Our readers will remember his able paper on the same subject read before the Medical Society of Nova Scotia last year, and since published in the NEWS. "A Study of Gastroptosis from the Radiographic Standpoint," by H. K. Pancoast, M. D., of Philadelphia, is a very instructive article, illustrated by sixty-seven figures. "Thirosinamine in the Treatment of Deafness," by M. Lermoyes, M. D., of Paris, is of particular interest to ear specialists. Many other articles are of much value, while the illustrations as usual are numerous and well executed.

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Wellcome's Photographic Exposure Record and Diary, 1908.

Wellcome's Photographic Exposure Record and Diary banishes the greatest obstacle to success in photography—that of correctly estimating exposure. The actual determination of correct exposure is made by means of an ingenious little mechanical calculator attached to the cover of the book. A single turn of a single scale is all that is necessary. This little instrument—with its accompanying tables—giving the value of the light at all times of the day and year, and its list of the relative speeds of more than 190 plates and films, is alone worth more than the cost of the whole book. It certainly saves dozens of plates which would otherwise be wasted owing to errors in exposure.

This calculator is, however, but part of the book, which contains a full article explaining all the conditions governing exposure, with special illustrations and tables for interior work, for telephotography, for copying, enlarging and reducing, for moving objects, for night photography, and for printing by artificial light. In addition, there are tables of weights and measures—Imperial and metric—notes on focusing by

scale, Customs regulations, a temperature chart, a full article on development, and directions for toning, intersification, reduction and similar photographic operations by the simplest and most satisfactory methods available.

Bound up with these printed pages of condensed photographic information, is a complete diary for 1908, together with ruled pages for systematically recording the details of over 300 exposures; also pages for memoranda, and for recording the exposures when printing on bromide, platrotype, carbon and other printing papers.

The book is enclosed in a neat wallet cover, lettered in gold, and fitted with a pencil and a pocket for storing proofs, etc. A new and important feature of the 1908 edition is, that it entitles purchasers to a hanging card for the dark room, giving the relative exposures required when using any one of 84 varieties of bromide paper or lantern slides.

The addition of a handy table for calculating exposures in photography at night is another new and useful feature.

This Record and Diary is published by Burroughs, Wellcome & Co., London and Montreal, and the price at Montreal is 30 cents.

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Reprints Received.

"The Submucous Resection of the Nasal Septum," by Lee Maidment Hurd, M. D. Reprinted from the *Journal of the American Medical Association.*

"A Mistaken Diagnosis of Dementia Senitis," by C. H. Hughes, M. D. Reprinted from the *Alienist and Neurologist.*

"Peritoneal Tuberculosis," by Parker Syms, M. D. Reprinted from the *Annals of Surgery.*

THERAPEUTIC NOTES.

INFECTIOUS DISEASES.

As the kidneys are the most active channel of elimination, not only of leucomaines and ptomaines, but also the micro-organisms of infectious and other diseases, it is specially important that elimination be constantly favored by the administration of a soothing and healing diuretic resolvent. This indication is met by administering sanmetto in teaspoonful doses four times a day. This explains why this remedy is so valuable as adjuvant treatment in la grippe, scarlet fever, gonorrhœa and other diseases.

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VARICOSE ULCERS.

The following has been used with great success in cases of varicose ulcers: The patient is put to bed for two or three days, then the leg is shaved and scrubbed and zinc oxide powder applied; if ulcer is large, put an extra layer of the powder and gauze over it; then paint leg with the following: White gelatine, 150 parts; zinc oxide, pulv. 150 parts; glycerine, 250 parts; distilled water, 450 parts; and apply bandage, then the paint again until there are three layers of paint and two of bandage. Take temperature and if it is normal do not disturb for two or three weeks. This splint is found to be most comfortable (and to far surpass any elastic stocking), and the patient may go around his ordinary work without its being injurious, as long as there is no temperature.—*Canadian Nurse.*

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ERYSIPELAS.

Hecht employs the following in erysipelas:

℞ Liquefied carbolic acid 30.0 parts
Powdered camphor .. 60.0 parts
Alcohol ..... 10.0 parts
Ms. Externally.

℞ Ichthyol,
Guiacol,
..... aa 10.0 parts
Alcohol ..... 20.0 parts
Ms. Externally.

—*Medical Council.*

SUCCESSFUL TREATMENT OF NEVES BY RADIOTHERAPY.

F. Barjon has reported two cases of angeioma of the face in children (one four months of age, the other three and a half years), in each of which treatment by punctate cauterization and electrolysis has been tried ineffectually before X-ray treatment was instituted. The first patient was cured after eleven séances of ten minutes each of a large erectile vascular growth of the left cheek and neck (5 x 3 centimetres. The older child had a growth at the side of the nose. He was also entirely cured after thirteen séances. Photogravures of the results accompany the report.—*N. Y. Med. Journal.*

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PREVENTION OF HEMORRHOIDS.

Mathews states that the best agent for the preventive and palliative treatment of internal hemorrhoids is cold water. Do not allow the patients to inject hot water into the rectum; it causes a distention of the veins and further protrusion of the hemorrhoids. Cold contracts, therefore if your patient will drink a mineral water to keep the bowels open and will apply cold water to the mass after the bowels move, and will inject moderately cold water into the rectum to aid every movement, he will get good results. If an ointment is desirable the following may be used:

℞ Hydrarg. chlor. mitis.... gr. xl.
Morph. sulp ..... gr. vj
Cocainæ muriatis ..... gr. xij
Vaselini ..... ʒj

M. ft. unguentum Sig.: Apply night and morning.

—*Med Fortnightly.*

THE TREATMENT OF ECLAMSIA.

(*Die Behandlung der Eklamysie.*) E. Bumm Berlin. *Deutscho Medizinische Wochenschrift*, November 21, 1907.

The causes of eclampsia are still unknown: therefore our therapy is purely empiric and symptomatic. In the very severe forms of the disease, about two-thirds per cent. of all cases we stand practically powerless. Fatal cases show chiefly widespread necroses in the liver and kidney. Severe types are also recognized by the early onset of deep coma, fever, hemoglobinuria or complete urinary suppression; icterus is frequently noted.

Whether the cause is ascribed to the fetus, to the placenta or to reflex disturbances from the genitals or compressed ureters, the indication for early emptying of the uterus remains pre-eminent, and the mortality after early interruption of pregnancy is small.

The onset is rarely sudden. Premonitory nephritis with scant, highlv albuminous urine and casts, general edema, signs of general intoxication —headache, vomiting, dizziness, eye Emptying of the uterus in this stage affords prompt relief. After accouchement force following the first attack, the mortality in Bumm's hands has been 2.3 per cent.; where this measure is postponed it reaches 25.30 per cent.

Where the eclampsia manifests itself during the second stage, after the cervix has become partly absorbed, complete dilatation may be rapidly obtained by the Bossi instrument or by the rubber balloon. If the cervix is long and rigid splitting the anterior cervical wall permits of delivery within 10 minutes. The day of the use of large doses of chloral and morphin has passed. When the sen-

McGILL UNIVERSITY, - Montreal

Faculty of Medicine, Seventy-Sixth Session, 1907 - 1908

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A. H. GORDON, M.D., Lecturer in Physiology.
OSCAR KLOTZ, M.D., Lecturer in Pathology.

FELLOWS.

MAUDE E. ABBOTT, B. A., M. D., Fellow in Pathology.

THERE ARE, IN ADDITION TO THE ABOVE, A STAFF OF FORTY-THREE DEMONSTRATORS AND ASSISTANT DEMONSTRATORS.

The Collegiate Course of the Faculty of Medicine of McGill University begins on Septempter 18th, 1907. Notwithstanding the fire of April 16th, 1906, which destroyed a part of the Medical Building, arrangements have been made for the carrying on of the work of the College without interruption and as efficiently as formerly.

MATRICULATION.—The matriculation examinations for Entrance to Arts and Medicine are held in June and September of each year. The entrance examinations of the various Canadian Medical Boards are accepted

COURSES.—Beginning with the session 1907-08 the Regular Course for the Degree of M. D. C. M. will consist of five sessions of about eight months each.

SPECIAL COURSES leading to the Degrees of B. A., M. D., and B. Sc. (Arts); M. D., of seven years have been arranged.

ADVANCED COURSES are given to graduates and others desiring to pursue special or research work in the Laboratories, and in the Clinical and Pathological Laboratories of the Royal Victoria and Montreal General Hospitals.

A POST-GRADUATE COURSE is given for Practitioners during June of each year. The course consists of daily clinics, ward classes, and demonstrations in general medicine and surgery, and also in the various special branches. Laboratory course in Bacteriology, Clinical Chemistry and Microscopy are also offered.

DIPLOMAS OF PULIC HEALTH.—A course open to graduates in Medicine and Public Health Officers of from six to twelve months' duration. The course is entirely practical, and includes in addition to Bacteriology and Sanitary Chemistry, a course on Practical Sanitation.

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sorium is unaffected and general irritability increased, moderate doses of narcotics by rectum are of some use; but if coma has developed or is threatened these drugs are directly harmful by depressing the heart and respiratory action still further and thus hastening the advent of pulmonary edema. Chloroform anæsthesia, lumbar anæsthesia and lumbar puncture have all been tried and have all been found useless or harmful. Vassale recently recommended parathyreoidin; further trial is needed before a definite judgment can be formed.

The ordinary kidney stimulants appear powerless. The best found are large subcutaneous infusions (1,500 c. cm.) of salt solution, local applications of heat to the kidney and frequent kidney massage. Edebohl's renal decapsulation is *sub judice*. It is difficult to determine the proper time to use it. Hot packs or baths in cases verging on coma do harm by increasing the temperature. Pilocarpin injections should be discarded; they increase the tendency to pulmonary edema.

Stimulation of the respiratory and heart action is indicated. Respiration has a tendency to become superficial and unless the upper air passages are kept clear, by frequent cleansing of the pharynx, aspiration pneumonia supervenes. Bumm has tided patients over the crisis by long continued artificial respiration and heart massage. Where the pulse is full and rapid, venesection proves useful.

—*American Journal of Surgery.*

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