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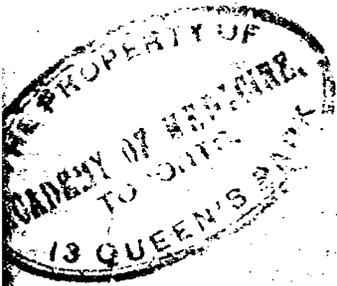
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Kingston

Medical Quarterly

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KINGSTON MEDICAL QUARTERLY.

VOL. V.

JANUARY, 1901.

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

We hereby tender an apology to our readers for the late appearance of this number of the QUARTERLY. The Kingston Medical and Surgical Society holds an Open Meeting each year. This year the meeting was held during the first week in February. The QUARTERLY has been delayed so that we could give to our readers the papers that were read at this Open Meeting. We trust our readers will accept this apology.

THE KINGSTON GENERAL HOSPITAL AND THE MEDICAL FACULTY OF QUEEN'S UNIVERSITY.

SINCE our last issue the Governors of the General Hospital have seen fit to make a very radical change in their regulations as to the attendance upon patients in the Public Wards. Heretofore all patients entering the Public Wards came under the care of the physicians and surgeons appointed by the Governors for that purpose, and all such patients were available for clinical instruction. Now any practitioner who sees fit to do so may attend a patient in the Public Wards, and patients so attended are not available for clinical instruction. Now, in our opinion, this arrangement is and must be prejudicial to the Medical School, and in the end it will be found to be not in the best interests of the Hospital. A Medical School and an Hospital are mutually dependent the one upon the other. The teachers in the school are the physicians and surgeons in attendance upon the wards of the hospital. In order that the school may be a success they will do all in their power for the success of the hospital. Their whole influence will be directed to having a large

number of patients for the hospital so that they may have clinical material for the students. The two institutions in the eyes of the teachers are practically one, and the success or failure of one means the success or failure of the other. These men have a double interest in seeing the hospital prosper. That such is the case compare the size, the condition, and the amount and character of the work done in the Kingston General Hospital with the size, condition, and the amount and character of the work done in any other hospital situated in a city similar in size to Kingston, in which there is not a Medical School. The comparison will be wholly in favour of the Kingston General Hospital. We believe that the Kingston General Hospital has attained to its present excellent status because we have here a Medical School, and because the medical and surgical attendants upon the wards of the hospital are teachers in the Medical School, and we are further convinced that the Medical School owes its present success to the admirable hospital facilities which the clinical teachers have had in the wards of the hospital. Both institutions have been prosperous under the old arrangement, and we believe owing to that arrangement. What, one might well ask, will be the effect upon the hospital and the school of this new arrangement? Without hesitation we say it will be bad for both. In the past, patients who were unable to pay for their keep and care were available, as we have said, for clinical instruction. Now these patients knowing that if they are admitted under the care of a physician or surgeon who is not a clinical teacher will take good care that they are so admitted, and in time the wards will become filled with patients who are being attended by practitioners who are not on the teaching staff of the College. It may be said that the teachers must use their influence to send in patients, and that if they cannot do so it only shows that the patients prefer those practitioners who are not teachers. Not so. The teachers are handicapped. The poor patient wishing to avoid the necessity of being utilized for instruction avoids the clinical teacher and secures the services of another practitioner. It does not require much mental acumen to see what the result will be so far as the Medical School is concerned. Students must have clinical material, and if they cannot get it in Kingston they will get it in some other University town. The Medical

School therefore will suffer. What about the hospital? It too will suffer. As we have said, the present excellent standing of the hospital has been attained very largely through its connection with the school, and owing to the interest in its welfare taken by the teachers in the school. We do not by any means claim that this has been the only factor in the success of the Kingston General Hospital, but we do claim it has been a very important factor. Now the Governors have taken a step which is directly antagonistic to the interest of the school, and in the face of the fact that they were advised against this step by the physicians and surgeons on their own staff. What can we expect? Will these teachers be as enthusiastic in promoting the interests of an institution the Governors of which have deliberately, and with their eyes open, placed themselves in antagonism to the Medical School? To expect them to do so would be to expect what is contrary to human nature. The Medical School must have clinical material, and as they have been refused it at the Kingston General Hospital they must obtain it elsewhere. Where their clinical material is there will their influence be given. We most sincerely trust that in the interests of both institutions things will not come to this, but that the Governors of the hospital will see that a mistake has been made, and seeing the mistake will rectify it by rescinding the motion establishing the new arrangement, and thus revert to the former condition—a condition in which the most happy relations existed between the hospital and the school.

THE DEAN'S SCHOLARSHIP.

(Reprint from Queen's College Journal.)

To be founded in the Medical Faculty, in honour of Dr. Fife Fowler, on the occasion of his retiring from the Chair of "The Principles and Practice of Medicine," after a life-long service, beginning with the establishment of the Faculty in 1854.

“WITH the opening of the session of 1892-3 the University was rounded out by the restoration of the medical faculty. The faculty has since been endeavoring to keep pace with the other departments of the University. It has no endowment and its only source of revenue is students' fees. The Profes-

sors, however, like all others who are identified with Queen's, have shown a spirit of self-sacrifice and have aimed at nothing less than full equipment. Since 1892, two Professors, devoting their whole time to the work of teaching, one in Physiology and Histology and the other in Pathology and Bacteriology, have been appointed and these are paid wholly by the faculty. Besides this the School of Mines is paid for teaching Chemistry. Of the balance of the receipts, a full third is set apart for equipment and current expenses, and the remaining two-thirds is all the Professors receive by way of remuneration for their services. Notwithstanding the pittance each member of the faculty receives as salary, the Professors, for the more complete equipment of the college, have decided to enlarge and improve the buildings, at a cost of \$10,000. This sum they purpose raising among themselves. No outsider has been asked to assist. The work on this improvement will be commenced in the spring, and the new buildings will be ready for use at the opening of the session of 1901-1902.

This narration of facts is given as a fitting introduction to an appeal to the medical graduates to co-operate with the faculty in a matter which concerns all alike. Dr. Fowler, the Dean of the Faculty and Professor of the Principles and Practice of Medicine, has resigned his professorial chair. The faculty felt that Dr. Fowler's forty-six years of active service as a teacher should be commemorated in some way, and it has been decided to found a scholarship in medicine, to be known as the Dean Fowler Scholarship. To this object the faculty has contributed \$300. In view of the outline of what has been done by the faculty during the past eight years, it will be readily acknowledged that it has been actuated by a spirit of devotion to the cause of medical education. The whole burden of founding the Dean's Scholarship would also have been borne by the faculty, but it was felt that every medical graduate of Queen's had the right to demand the privilege of having his name associated with an effort to honour the name of Dr. Fowler, under whom each one of them had sat in his student days and of whom each has the kindest recollections. For this reason it has been decided to ask the medical graduates to contribute to the Dean Fowler Scholarship. We very much mistake their loyalty if a generous response is not

made. Each will feel himself honoured in being permitted to join his fellow graduates in honouring the veteran professor.

As some of the graduates in greater New York and the Empire State desire to make a special effort, this has been conceded to them. Dr. Harry F. Mitchell, South Bend, Indiana, has been asked to form those who are in his neighborhood into a committee charged with the duty of bringing the matter before the graduates in the other States of the Republic, and a Kingston committee will appeal to those who live elsewhere. While the minimum sum required is \$1,000, it is hoped that two or three times that amount will be sent in before the end of March. Medical Convocation is held early in April and everything in connection with the commemoration should be completed before that date. Contributions should be sent to the Principal or to Dr. Herald, Secretary of the Faculty."

We commend the object set forth in this reprint from the Queen's College *Journal* to the medical graduates of Queen's. Already about \$500 have been received by the Principal and Secretary of the Faculty. The Dean's Scholarship is an assured success. We trust that every graduate will see that his name appears on the list of founders.

DR. RODDICK'S BILL TO ESTABLISH A DOMINION MEDICAL COUNCIL.

DR. RODDICK has introduced his bill again, with the objectionable features, to which attention was called last year, still retained. Much as we desire to see such a Council established, we infinitely prefer to remain as we are rather than have such a vicious system imposed on us as that contemplated by this bill. The statistics, given by Dr. Roddick in his speech on the first reading, are quite sufficient to condemn the principle of representation on which it professes to be based. Here is what he says on the Constitution of the Board:—

“ There were many difficulties in deciding on the constitution

of such a Board, whether it should be based on representation by population, or number of medical men, or any other principle. On the basis of the number of medical men, if Prince Edward Island were given one member for its 90 medical men, Ontario with 2,500 medical men, would have 28; Quebec, with 1,400, would have 15; Nova Scotia, with 476, would have 5; New Brunswick, with 243, would have 2; Manitoba, with 344, would have 3; British Columbia, with 214, would have 2, and the North-west, with 95, would have 1.45. He thought that the better way would be for each Province to have the same number, three from each, making 24. He suggested that the Council consist of the President of the Medical Council of each Province, ex-officio, the member elected from among the Medical Council of each Province, and one from each Province elected by the Governor-General in Council. In addition to that, there should be three homœopaths, to be elected by their fellows throughout the Dominion." That is, Prince Edward Island, with 90 medical men and no Medical School is to have the same representation on the Council as Ontario with 2,500 medical men and five Medical Schools in three distinct centres. New Brunswick, with 243 medical men—a majority of them probably from McGill, like Prince Edward Island, and no Medical School is to be similarly treated. Or to put it in another way, Ontario with about as many medical men as all the rest of Canada is to have nominally 3 representatives, and the rest of Canada 21. That is representation by population with a vengeance. And though we are far from being represented by population, we should prefer it as a principle to an arrangement which laughs it to scorn. We have said 3 "nominal" representatives; for only one of the three is to be elected to the Council. Another is to be the President of the Medical Council in each Province, and as these men would be on the Dominion Council for only one year, they would have no real weight. The Council would infallibly get into the hands and under the control of a little clique from one centre, who would occasionally throw a sop to another centre, but in the main work it is in their own interest. It is easy to work the oracle when you control the shrine.

Only two centres for Examination are recognised, Montreal and Toronto. To these Meccas all students would be obliged to

make annual pilgrimages, the avowed object being to lessen the expense to the Dominion Council. Lessen the cost to the Council by throwing it all on the students! Are there no hospitals in Halifax, Kingston, London, Winnipeg? Or are they so miserably equipped that clinical examinations could not be held? Better to send the examination papers, and even an examiner, to the mountains than make the mountains—or the students—go to the examiners, we should say.

Dr. Roddick has a praiseworthy object in view, but his bill in its present form is hopelessly bad. It has no consistent principle. He allows, for example, the homeopathic practitioners to elect their representatives, but declines to give the same privilege to the allopaths. One would suppose him to be a homeopath or a Don Quixote, but as he is neither the one nor the other, what is the explanation?

We advise him to withdraw the bill until the Canadian Medical Association has considered it, on a day appointed for the purpose, instead of a day and hour when it is possible to get a snap verdict. His speech shows that he knows the history of the efforts made to get Dominion registration, and the failures teach a lesson. According to the *Globe*, "Dr. Roddick explained the efforts made in 1869 to obtain a bill giving force to the resolution of the profession, and reviewed the causes which led to the rejection of the bill and the temporary cessation of the efforts. Some seven or eight years ago the agitation was renewed, and an effort was made to obtain an inter-provincial registration. There was a strong feeling among the profession in Quebec that a central examining body should be established there to meet the conditions in Ontario, and a bill was introduced in the Quebec Legislature, but it was so strongly opposed by the heads of McGill, Laval and Bishop's Universities that it did not pass. Even had it passed it would only have brought about an understanding between the Provinces that might be disturbed at any time, and on that Provincial reciprocity it would have been impossible to secure reciprocity with Great Britain, and perhaps France." The lesson is, know the conditions before you attempt to legislate.

MYXADENITIS LABIALIS.

(Read at the open meeting of the Kingston Medical and Surgical Society.)

GENTLEMEN,—In presuming to interest you, for a few minutes, I trust, I fully appreciate the fact, that I am addressing enthusiastic students who are as well practitioners of extensive experience. While we have reason to be glad that our lives have been in the days of splendid achievements, so rapidly following one after another, that we cease to consider the discoveries in bacteriology, the use of anti-toxine, X rays, Murphey's button and nitrogen lung splints, &c., as anything but ordinary every day affairs; still we may be also glad, there is much yet to learn. How monotonous will the practice of medicine become, when the newly graduated M.D. "hangs out his shingle" with full confidence that he knows it all. He will be an Æsculapian Buddha.

I shall not attempt to give a résumé of mycoses generally, or of any particular mycosis, which would almost wholly be extracts from text books, but simply report a case, which is the only one of the kind I have met in twenty years general practice.

In nomenclature I have followed During as inflammation of the mucus glands of the lips is the most prominent symptom. In December, 1897, I was consulted by Miss M., a large blonde young woman twenty years old, a member of a family of thirteen healthy children. On account of illness she had recently returned from Nova Scotia, where she had resided for a few years.

She had been ill ten months, four of which were passed in bed. All I could learn of the nature of the disease was that she had a fever, which the attending physician called a "low fever," with sore throat and sore lips.

When I first saw her the condition, briefly stated, was that of anæmia, with the usual rapid heart, dyspnoea on exertion, slight anasarca, absence of menses for four months, neuralgia, anorexia, obstinate constipation, papular desquamating rash on scalp, loss of hair, sore throat, sore lips, profuse leucorrhœa, inflamed very sensitive patches on vulva. The cervix of uterus

was large and covered with a thick mass of granulations, exuding a yellowish pus of creamy consistency. The inguinal and cervical lymphatic glands slightly enlarged, hard, painful on pressure. There was an abnormally large discharge of transparent mucus from the mouth and vulva.

The most striking symptom, and the one of which she made most complaint was the condition of the lips.

They were swollen and stiff, and covered with a yellowish brown, glue-like substance, from $\frac{1}{8}$ in. to $\frac{1}{2}$ in. in thickness, the lower lip being most affected. In four to six hours after cleaning, the exudation was as thick as ever. In places it stood on leg-like columns of the same material, which appeared to be continually extruded from the orifices of the mucus glands. In other places it was intimately blended with the epithelium, which was torn off in cleaning the lips, leaving a raw surface. In the morning the lips were glued together so firmly that it was with considerable suffering the patient got them separated.

During the three following years this condition of the lips was present, with but little variation in degree of severity. No matter how protean the other symptoms—neuralgia, ulcerated teeth, laryngitis, bronchitis, acute catarrh, gastritis, colitis, hematuria, cystitis, arthritis (she hasn't yet had appendicitis)—and no matter how varied the treatment and its effects on the general health and other local conditions, this condition of the lips remained practically the same.

This symptom I find has been described by several writers. Volkman mentions five cases—all women and affecting the lower lip. Purdon four cases. Dahring mentions two cases—females—which ultimately recovered. They seem to consider it a local trouble, not affecting the general health particularly. Dahring mentions a depressed condition of the nervous system as existing in his cases. There appears to be a tendency to connect the condition with eczema, or eczema seborrhœa.

In this case the condition of the scalp was similar to but not identical with that found in seborrhœa. In no other respect has there been anything like eczema.

While she was in the Kingston General Hospital Dr. Third discovered, in a culture made from the exudate of the lips, the *leptothrix* bacillus, which he considered to be the same as found

in mycotic sore throat *leptothrix buccalis*. This fact, and the resemblance in local condition, stiffness and character of exudate, with the common persistence in spite of treatment, caused the conclusion that the two diseases are intimately connected if not the same. Dr. Third mentioned a case of Mycosis Pharyngis of eleven years' duration, in which the *Leptothrix* was also found.

During the first few months I had this case in hand the general condition of health demanded most attention. The treatment was generally speaking alterative and tonic, with frequent additions and changes as the variety of trouble arose. The principal drugs used were Pot. Iodide, Mercuric Chloride, Iron in a variety of forms, Arsenic, Strychnine, Quinine, &c. Menses became established in May, 1898, after the administration of Pot. Permang. in grain doses, three times a day, for about three weeks. She has been regular in that respect since. Locally I used a great variety of things. Mercuric chloride, hydrogen peroxide, trikresol, were those that had most effect.

As a result of one year of treatment, there was a decided improvement in general health but the trouble with the lips and genital organs remained about the same. The throat and scalp were nearly all right.

In February, 1899, I induced the patient to "go to" the Kingston General Hospital. There she received very careful attention from Drs. Garrett and Third. Under an anaesthetic actual cautery was applied to the lips and the affected parts of genital tract was cureted which latter produced a beneficial effect. For a few weeks the lips were slightly better, but I could not persuade her to have the cautery repeated until March, 1900. The effect the second time was not so good.

Thinking I had an intermediate case and being well rewarded, very largely in gratitude and faith evinced by the patient, I continued in the old line.

One day in November, 1900, not having hydrogen peroxide at hand, I had a saturated solution of potassium permanganate for local application to the lips. The effect was a very marked improvement. Continuing its use, generally much weaker, as a local application to all the affected mucous membrane, for about three months I am glad to say the lips are nearly well, and other parts seem normal.

Owing to the discoloration, the patient was not adverse to a discontinuation of the potassium permanganate for three weeks at holiday time. During the third week the exudate began to increase, when treatment was resumed. At present her general health is fair, and local symptoms slight, and my hopes of complete recovery, I think, are well founded.

G. C. T. WARD.

THE CAUSATION OF TUBERCULOSIS.

(Read at Open Meeting of Kingston Medical and Surgical Society.)

THERE is but one essential cause of Tuberculosis and that is the tubercle bacillus. No true tubercular lesion can occur clinically without the presence of this bacterium and consequently a lesion to be tubercular must either have or have had this bacillus present. Now while this bacterium is the actual cause there are a number of factors which prepare the soil—the human body—to act as a suitable medium for this microbe. For the seed without the soil comes to naught and here it is that we have the importance of the predisposing factor becoming apparent. Before we can consider these factors it will perhaps be well to speak of the avenues and modes of infection of this bacillus and the ways in which an infected individual is dangerous to others.

Into the life history of the bacillus itself it is quite impossible for me to enter in the short time at my disposal. Its main channels of infection are via the respiratory and digestive tracts. Rarely it may attack by inoculation through the skin or genital passages.

The respiratory passages are attacked from the breathing in of tubercle laden dust. This dust falling upon the nasopharyngeal tissues or the tonsils are either destroyed there, or are transmitted (as a rule without local lesion) to the cervical glands, there too frequently exciting a lymphadenitis. The dust may be deposited on the larynx and its contained tubercle bacilli gaining a foothold will account for the rare cases of primary laryngeal Tuberculosis. Being carried to the lungs it may lodge there, ex-

citing bronchial or peribronchial lesions of Tubercle or be transmitted to the bronchial or mediastinal glands without lung lesion.

Primary Tuberculosis of the digestive tract is a food borne disease. The food may be infected in two ways (*a*) by becoming infected from tubercle laden dust, (*b*) the most common way is however by milk, rarely by meat from infected animals. Practically primary tuberculosis of the intestinal canal is a disease of children—the milk age. As in the lung the bacilli not infrequently pass through without local lesion and lodge in the mesenteric glands.

Tubercle in other parts of the body is practically always derived from a focus in the respiratory or digestive tract. In the majority of instances Louis' law holds good. This law is, that in adults the lungs or their lymphatic glands usually contain tubercle, when it is present in the body. The tubercle bacillus is thrown off from the body mainly in the sputum of phthisical patients, in which it is found frequently in vast numbers. True, it is also thrown off in the bowel contents in intestinal tubercle, in the urine in genito-urinary tubercle and from the pus in tubercular abscesses and sinuses, but practically the germ is disseminated by the sputum. This bacillus can live and remain actively virulent for 9 to 18 months in dried sputum. So little care has been taken to destroy tubercular sputum in the past, that the germ is fairly ubiquitous, but it is particularly common in tubercle infected houses. For Tuberculosis is essentially a house disease, much more than it is a family disease. Is it any wonder that such is the case? What care is taken to secure any isolation of a consumptive or to disinfect his sputum? What steps are taken at present, to prevent him infecting the air and dust of the whole house with tubercle bacilli, which are then breathed in by other individuals? Practically none. It is well then that Tuberculosis requires a suitable soil on which to develop. Given the bacillus constantly present as it is certain to be in an infected house, will not the time come sooner or later when something will render us susceptible.

What are the conditions which lead to susceptibility?

Most practitioners place heredity first on this list. I believe its influence to be overestimated and a proper explanation of the fact that tuberculosis attacks member after member of a family

is to be found in the constant exposure of its members to the infection rather than always due to any essential peculiarities of the soil. I do not wish you to understand that I do not consider heredity a factor—I do, but I consider constant exposure to infection a more important one. Another factor of very great importance is improper ventilation of houses, or lack of fresh air. Our houses are fitted with double windows and storm doors and for 5 or 6 months in the year many live hermetically sealed up, if I may so express it. This lack of fresh air develops anaemia, headaches, and general lassitude, and affords certainly a fairly ideal condition of body on which to develop Tuberculosis and if such individuals are exposed to infection, say by the presence of a consumptive, the liability to infection must be great. It is when we add overcrowding to poor ventilation that we have the main factor in causing so many deaths from tubercular disease amongst factory operatives, shop girls, etc. Amongst other causes which depress the vitality and render the body susceptible are exposure to cold and to dampness—particularly damp dwellings. Last on the list of predisposing causes I would place lack of suitable food or insufficient food. This cause is not so extensively operative here as it is in large centres of population. It is quite impossible for me to take up individual causes of susceptibility so the class causes already enumerated must suffice.

We have then in the etiology of Tuberculosis two factors to consider—one is the infectivity of the disease by its causal agent the tubercle bacillus, mainly by house infection, and second the necessity for a predisposition which may be natural to the individual by hereditary tissue peculiarities or acquired under conditions which tend to depress the body vitality.

W. T. CONNELL.

THE DIAGNOSIS OF TUBERCULOSIS.

(Read at the Open Meeting of the Kingston Medical and Surgical Society.)

MR. PRESIDENT AND GENTLEMEN:—To me has been assigned the duty of making a few remarks upon the subject of the Diagnosis of Tuberculosis. You will readily agree with me that to attempt to go into the diagnosis of tuberculosis in general, *i.e.*, as it affects the various organs and tissues of the body, in the space of time usually allotted to a paper at a meeting such as this, would be an impossible task. I shall confine my remarks to the diagnosis of Pulmonary Tuberculosis. Dr. W. T. Connell who has just read his paper on the etiology of this disease will, I am sure, agree with me that the earlier the diagnosis is made the better for the patient. Drs. Williamson and Kilborn who are to follow with papers upon the treatment of tuberculosis will, I have no doubt, point out that the hope of successful treatment depends mainly upon early diagnosis. The earlier the diagnosis is made the better the patient's prospects of recovery, the more hope for the physician's successful treatment and the less the likelihood of others becoming infected. From all points of view, therefore, an early diagnosis is essential. Such being the case I shall still further limit the scope of my remarks and confine myself to the Diagnosis of Incipient Pulmonary Tuberculosis.

Upon what can we safely base a diagnosis of Incipient Pulmonary Tuberculosis? 1 The Family History. 2 The Personal History. 3 The Present Condition. 4 The Physical Signs. 5 The Tuberculin Test. 6 The Examination of the Sputum.

1. *The Family History.*—At present not nearly as much stress is laid upon this as formerly. Every one of us can recall cases of patients who died from pulmonary tuberculosis whose family history was free from the slightest suspicion of tubercular taint, and on the other hand, we all know of patients whose family history was bad, who yet lived to a good age and died of some other malady. The absence of tubercular taint in one's family

history does not preclude the possibility of tuberculosis, and the presence of tuberculosis in one's ancestors or immediate relatives does not necessarily mean that that one must have the same disease. Should we then entirely ignore family history? By no means. All experience goes to prove that a patient whose family history shows traces of tuberculosis is far more liable to that disease than is one whose family history is not thus tainted. We must not too readily diagnose tuberculosis on account of a tubercular record, nor on the other hand, must we conclude that tuberculosis is not present because our patient's family has never exhibited a case of this disease.

2. *The Personal History.*—In examining a patient suspected of tuberculosis one should always enquire as to what sicknesses he has had previously. Thus, for example, a history of diseased and suppurating bone, of enlarged and suppurating glands, of pleurisy with effusion would arrest our attention. Any one of these conditions would be sufficient to awaken our suspicions and, especially so, if they were associated with a family history which gave examples of tuberculosis. My experience has convinced me that a previous attack of Typhoid Fever acts as a predisposing cause. I have seen several cases of tuberculosis in patients of good family history, whose only previous illness was Typhoid Fever. Frequently you will find that such a patient will give a history somewhat of this character: Previous to the attack of Typhoid he had never been sick—had enjoyed excellent health—but that he had never felt just up to the mark since the fever—had been easily tired—frequently had a rise of temperature without apparent cause. What is the explanation? Did the Typhoid cause the Tuberculosis? Assuredly no. It left the patient however in a state of lowered vitality, with more or less irritability in the respiratory passages—in other words it prepared the tissues for the reception, lodgment and propagation of the bacilli of tuberculosis, and rendered the tissues unfit to resist their invasion. Another condition which I have learnt to regard with very grave suspicion is that in which a patient has had several attacks of low fever or malaria. Perhaps, like Typhoid, this condition is only a predisposing cause, but the more I see of such patients the more I am convinced that the low fever or malaria was originally and always

nothing more nor less than the evidence of an already existing Tuberculosis undetected, frequently because not suspected and not looked for.

Besides these conditions to which I have referred specially as features in the personal history that are to be regarded as warnings of a possible existing tuberculosis, we may say generally, that any condition which tends to lower the vitality increases a patient's danger from tuberculosis and ought therefore to put the physician on his guard and induce him to make a careful examination of the lungs.

3. *The Present Condition*: (a) Cough.—There is usually, though not always, a slight, hacking dry cough. This may not always be present, but when it is, it is always suspicious. Instead of this dry cough, even in the very earliest stages, we may find a cough with expectoration. Such is very frequently the case when the tubercular trouble has been preceded by a bronchial irritation, which, while not acting as a direct exciting cause, prepares the mucous membrane of the respiratory passages for the reception and retention of the tubercle bacilli. Either a short dry hacking cough or a persistent bronchial cough are to be regarded as precursors of a pulmonary tuberculosis, especially when found in conjunction with other symptoms and signs presently to be noted.

(b) Rise in Temperature.—This is usually found towards evening, but may occasionally be found in the mornings with a drop in the temperature towards night. The rise is never great. Anywhere between 99° and 101° F. This persisting and being associated with the other evidences of pulmonary tuberculosis tends to confirm our diagnosis.

(c) Loss of weight. Even at the earliest periods in the history of this disease we find that patients loose in weight, or at least that a young adult does not increase in weight as he should.

(d) Night sweats:—These are not always present in the early stages of the disease, but when present add one more proof of the tubercular nature of the trouble.

(e) Anorexia:—Frequently we find that tuberculous patients, even in the early stages, have an aversion to food and especially to foods which are generally regarded as beneficial in this connection as for example foods containing fat.

None of these conditions are to be regarded as being dis-

tinctive or pathognomonic of tuberculosis, but taken together and when found in conjunction with the physical signs about to be described help us to arrive at our diagnosis.

4. *Physical Signs* : (a) Inspection.—The classical signs of clear transparent skin, bright eye, silky hair, clubbed fingers, etc., are not to be regarded of as great value as formerly they were. Many cases of pulmonary tuberculosis present none of these conditions. When present, however, they make an additional link in the chain of evidence which leads us to the verdict of tuberculosis. The same may be said of emaciation, which in the young adult is always suspicious. Such a patient complaining of not feeling well, not being able for his work, easily tired, especially if this condition has been existent for weeks, is probably tuberculous. Emaciation alone is not sufficient evidence upon which to base a diagnosis but when taken in conjunction with the subjective symptoms already referred to, and with the physical signs about to be described is always presumptive evidence of tuberculosis. As we look more closely at our patient we note the rapidity of the respiration, which in tuberculosis is always increased. We may be able to detect the fact that one side does not expand as fully as the other. This will not likely be apparent, however, in the very early stage. On the whole, the evidence to be obtained by inspection is not great, and unaided is not sufficient upon which to base a conclusion. It is only when we are able to find other signs that those obtained by inspection become valuable. In themselves they are not distinctive. In connection with others they are aids to our diagnosis.

(b) Palpation :—As by inspection so by palpation the evidence to be secured is not of much value in itself. It is only when taken in conjunction with the evidence to be otherwise obtained that the signs observed by palpation assume any real significance. What are the signs to be observed by palpation? In the very early stage of the disease there may be no evidence discernible by this means. When, however, we are able to detect an increase in vocal fremitus, be it ever so slight, especially if this increase is noticeable at either apex and limited to that situation, we have a sign of very great value. When in addition we are further able to demonstrate the presence of other physi-

cal signs, this increase in vocal fremitus passes from presumptive to positive or at least to confirmatory evidence of the presence of a tubercular lesion in the lung. No such increase, however, in vocal fremitus may be detected, even by the most skilled, in the very earliest stage of the disease, and yet tuberculosis may be present. A layer of as yet unaffected lung intervening between the palpating hand and the tubercular lesion will mask or obscure this sign or prevent the vibrations of the air in the bronchial tubes being conveyed with increased volume to the palpating hand. We always look for increased vocal fremitus. When we find it, and find it limited to a small area on one side of the thorax, we have a sign of considerable value. When we are unable to detect it we are not justified in excluding the possibility of the existence of a tubercular condition. We must then rely upon other evidence or wait for further developments.

(c) Percussion :—Here again the evidence to be obtained may be negative or positive. No variation in the character of the percussion note may be detected by the most careful examiner, or a dullness may be apparent to the merest novice in the art of physical diagnosis. In the one case we have a portion of healthy lung lying between the thoracic wall and the tubercular lesion, and in the other case the consolidated tubercular portion of lung is near the surface. The absence, then, of dullness on percussion does not exclude the possibility of the existence of tuberculosis ; its presence, especially when limited to a small area and that area the apex, is always a fairly strong proof that our patient is suffering from this disease.

(d) Auscultation :—By this means of examination we obtain more reliable information. What may we hear? A harsh or roughened respiratory sound, perhaps small, dry and moist râles, interrupted inspiratory sound. When we hear this roughened respiratory sound and find that it is limited to a small area on one side (especially towards the apex) we may be almost sure that the trouble is tubercular, and when in addition we are able to detect râles we have very little doubt as to the nature of the condition actually existing. The interrupted or jerky respiration is not so important as it may be present in other conditions, but when associated with roughened breathing and râles it becomes an additional proof of the presence of tuberculosis.

(e) The X Ray :—Areas of consolidation in the lung have been detected by the X Ray. This method of diagnosis, however, can only be confirmatory of a diagnosis based upon information obtained in the various ways already pointed out. If an area of consolidation is great enough to be detected by the X Ray, it will be great enough to give physical signs sufficiently marked to enable anyone who is even tolerably expert to diagnose its presence by the methods already described. Further, the X Ray cannot determine the nature of the lesion any more than we can so determine it by our usual means of physical diagnosis. The X Ray may be used to confirm a diagnosis already made from the subjective symptoms and the objective signs, but, in my opinion, it cannot and should not be relied upon in making a diagnosis.

5. *The Tuberculin Test* :—As tuberculin has been used extensively in diagnosing tuberculosis in cattle, the question has not unnaturally been asked why not use it in diagnosing this condition in the human being. I believe it has been so used. Personally I have had no experience of this test, and therefore do not intend to speak further of it. I will only say that I have obtained some tuberculin and hope to make use of it whenever and as soon as I can get patients who will give their consent. At a later period I may have an opportunity of giving you the results of my experience.

6. *The Examination of the Sputum* :—When tubercle bacilli are found in the sputum we have an absolute proof of the presence of tuberculosis. Where, however, the bacilli are not found we have not an absolute proof of the absence of this condition. Some authorities, I am well aware, content that bacilli are to be found as soon as a tubercular lesion is established and that if bacilli cannot be found in the sputum tuberculosis does not exist in the patient. With this position I cannot agree. I am of opinion that the bacilli will first appear in the sputum when the lesion begins to break down. It will be noticed that those who regard bacilli in the sputum as a first evidence of the presence of tuberculosis advise that if the bacilli are not found at the first examination, a second, a third and even repeated examinations should be made at short intervals. If tuberculosis is present your patience will be rewarded and the bacilli will be found. In

such a case the question that naturally occurs to one is, was not the tubercular lesions which finally led to the expectoration of sputum containing bacilli present while the previous examinations of the sputum were made. I believe so. The finding of the bacilli absolutely proves the disease to be tuberculous—the absence of bacilli from the sputum at first does not exclude this dread disease.

In conclusion I would say that the diagnosis of pulmonary tuberculosis must not be made because we find any one of the conditions already referred to, nor must we withhold such a diagnosis because we do not find all the evidence sometimes present. It is our duty to apply all the tests available, to get all the evidence possible and then it is our duty in each case to determine whether the nature of the evidence so obtained warrants the verdict that our patient is affected with tuberculosis or not.

Mr. President and gentlemen, I thank you for the patience you have displayed in listening to this oft told and familiar tale.

JOHN HERALD.

CLIMATIC TREATMENT OF PULMONARY TUBERCULOSIS.

DURING recent years the views of medical men on the value of climatic treatment of Phthisis have undergone considerable change. At present the great majority of our profession do not regard climate as a curative agent in itself, but look upon it as a valuable adjuvant to the generally adopted treatment by means of fresh air, sunlight, hygienic and dietetic methods. The results obtained by the combination of the latter methods, both in sanatoria and open resorts, even in climates and localities that might be spoken of as unfavourable, should cause the physician to carefully consider the question from all standpoints before sending a patient away from home and friends to a strange country among people whose habits and customs are often entirely different from those to which the patient has

been used. The condition of melancholy often induced by such a proceeding may, even in the most favourable cases, outweigh any slight advantages that might be derived from the climate. This is doubly true when for financial reasons the patient is unable to procure not only the comforts but even the bare necessities of life in his new location. But having admitted that climate is a useful adjuvant in the treatment of Phthisis, we can perhaps decide more readily what classes of patients are suitable for this treatment by the negative process of deciding who should be treated at or near home. The following points are pretty well agreed on by Osler, Weber, Knoff and other authorities.

1. No patient who is unable to assume the financial responsibility that would be incurred in moving to and living in another country should be allowed to leave home.

2. When the disease has reached that point where the lung tissue is breaking down and there are night sweats and rapid wasting the case should be treated at home.

3. When the disease is still in the early stages, but shows signs of running an acute course, the case should be treated at or near home until the process becomes less acute.

The physician having decided that the case would be benefited by a change of climate, or the patient having taken the responsibility of deciding to move to another climate, the question arises where had the patient better go?

According to Osler, three conditions are required to render a climate suitable for treatment of Phthisical cases.

1. Pure air in abundance.
2. Equability of temperature.
3. A maximum amount of sunshine.

It is obvious that such conditions may be found in hot, cold, moist or dry climates, at high or low levels. Regarding the therapeutic effects of heat and cold on pulmonary tuberculosis we are to a great extent in the dark. "Ingals" gives a very good working rule, which is approved of by Knoff, *i.e.*, if the patient enjoys better health during the summer season at home send him to a warm climate. If he enjoys better health during the winter season at home send him to a cold climate. Knoff, however, gives a more general rule, *i.e.*, send the patient to a place where he can remain outdoors more and longer at a time than elsewhere.

With regard to the other points—dryness, moisture and altitude—it may be stated that places having a low altitude usually have a humid and those having a high altitude have a dry atmosphere, and for this reason “Jaccoud” divides climates into those of (1) Low Level and (2) High Level.

Low level climates include such places as the Riviera, Egypt, Algiers, Bermudas, West Indies and Florida. The air in these places, on account of its humidity, is soothing and therefore suitable for the following classes of cases:

1. Irritable types accompanied by bronchial or nasal catarrh.
2. Cases where there is progressive softening.
3. Cases where the disease is advanced and fever is high.
4. Fibroid Phthisis with accompanying Emphysema.
5. Cases having severe complications, *i.e.*, Emphysema, Empyema, Diseases of Heart or Kidney, Ulceration of the Larynx or Intestines, Diseases of the Blood Vessels.
6. Cases who are theoretically suited to high altitude, but who cannot eat, sleep, or keep warm while living at a high altitude.

High level climates will include such places as Davos and St. Moritzburg in Switzerland, and the mountains of Utah, Wyoming and Colorado.

The therapeutic value of such climates is due to rarefaction of the air, on account of which a greater volume of air is breathed in to support life, and so the lungs are better expanded, the blood pressure is lowered, the heart action quickened, and the general effect is stimulating. It is suitable for

1. Cases in the earlier stages before extensive consolidation or cavitation have taken place.
2. Quiescent cases in the third stage.
3. Cases arising out of or complicated by pleurisy.
4. In subjects with poorly developed chests but no actual disease it acts in a prophylactic manner.

It is not contra indicated by hæmoptysis.

It is contra indicated in cases with extensive destruction of lung tissue and in cases having serious complications as mentioned above.

The principal objections that have been urged against high attitudes are:—

1. The dryness of the air allows excessive dust formation and this causes irritation of the larynx and bronchial tubes.

2. The rarefaction of the air may cause Emphysema.

3. Breathing is rendered more rapid and the heart action is greater and as the patient is already weakened by disease there is a greater tendency to shortness of breath and palpitation than at lower levels.

4. It has been stated that a patient cannot return to lower levels again after being treated at high levels. This statement has been disproved although it is recommended that the transition from high to low levels and low to high levels should be gradual.

In addition to the above described climatic methods of treatment there remains to be described another method *i.e.*, treatment by long sea voyages. It has been recommended on account of the abundance of pure air and sunlight obtainable and the freedom from rapid changes in temperature. In addition to these it possesses another qualification, *i.e.*, isolation from professional or business cares. It is thus an eminently suitable method of treatment for the robust man who develops phthisis as the result of overwork and worry. It is also a suitable method for chronic slowly progressing phthisis and as a prophylactic for scrofulous conditions.

It is contraindicated in those of weak constitution, with a tendency to seasickness and a dislike of monotonous diet.

Another factor in the climatic treatment is the influence of pine forests on phthisis. Their influence is claimed to be beneficial by many observers especially Germans.

In all cases individual idiosyncrasies have to be considered. Patients who do not seem to make any progress at one place, improve rapidly at another.

Finally the patient should be warned that climate itself will not cure phthisis. Cure of this disease is independent of locality and while climate may assist to a greater or less extent in bringing about a cure, yet the patient must carefully follow out in detail the instructions of his physician regarding his mode of life, hygiene, diet, etc., if he wishes to derive any benefit at all from the change of climate.

A. R. B. WILLIAMSON

LARYNGEAL TUBERCULOSIS.

TWO typical forms of laryngeal tuberculosis are usually described:—

1. An acute inflammatory affection described by Friedlander as “an acute tuberculous sore throat” and by other writers as localized laryngeal tuberculosis.

2. A chronic process, characterized more by infiltration and softening than by inflammation of the tissues. The former class may be regarded as a primary laryngeal affection because so far as determined the morbid process originates and remains in the larynx. Professional opinion, however, has been divided on this point on account of the very frequent implication of the lungs. According to J. Solis Cohen, in some instances no lesions have been found upon post-mortem examination in the other organs of the body, and there are in recorded literature many instances in which this is said to have been the case.

On the other hand it is asserted that the laryngeal affection is always secondary to a previously existing morbid condition of the lungs, and that where the disease is said to have manifested itself previously in the larynx the pulmonary process was latent or still existent and escaped the detection by ordinary physical methods. From a practical point of view, it is difficult to understand the importance of this question. Tubercular deposit may, I believe, be found in any region of the body primarily; why therefore the larynx should be exempt from this primary invasion it is not very easy to say. The immediate cause of the disease is the lodgement of the tubercle bacillus; the predisposing cause either the tubercular diathesis or a previously existing pulmonary tuberculosis.

As to the diathesis, I believe there is no fact in clinical medicine more thoroughly established than that the descendants of tuberculous parents are particularly susceptible to the disease.

As to the frequency of the laryngeal form the statistics vary from 6 per cent. to 30 per cent. From a clinical point of view the former figure is probably correct, while careful pathological investigation by autopsies would show laryngeal involvement in from 30 to 33 per cent.

The symptom which I regard of most interest in this con-

dition is the painful deglutition which often sets in very early and becomes a very serious and distressing feature. It may occur in the primary stage of infiltration, but it is more severe when ulceration occurs and increases in proportion to the swelling and ulceration. Involvement of the epiglottis in this process renders the condition of the patient pitiful beyond description.

The question of the average duration of life is one of much importance, as it is common for the patient himself or his friends to require an estimate of this. In pulmonary consumption the average duration is generally stated as three years. Laryngeal complication shortens this by about one-third, so that we may say the average duration of life in pulmonary consumption complicated by a laryngeal invasion is eighteen months. The seat of pulmonary deposit in the larynx has, I think, a marked influence upon the progress and development of the disease. If the epiglottis is attacked the subjective symptoms become of an exceedingly painful character. Ulceration sets in early owing to the fact that the epiglottis is constantly impinged upon in the act of deglutition. In a less degree this is true when the arytenoids are involved. Clinical observation goes to show that when the primary invasion is in one of the ventricular bands or vocal cords the lesion develops rather slowly.

Our most important consideration has to do with the prognosis as regards remedial measures. Without doubt the very large majority of cases which come under observation fail to respond in any notable degree to any of our remedial efforts. Many are of the opinion that no case is cured. I am inclined to stand with the minority who maintain that cure results in a few cases. At any rate we may certainly arrest the local process and prolong life.

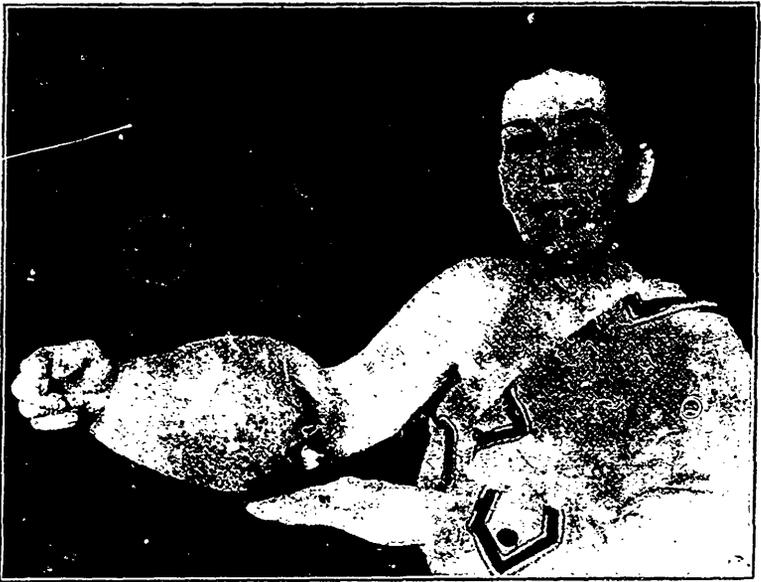
The treatment usually adopted is, first, thorough cleansing of the parts by a mild alkaline spray; second, the use of a mild astringent; third, the application of morphine in powder or solution; and, lastly, in the stage of ulceration the insufflation of iodoform or the application of lactic acid. Cocaine in spray is useful when deglutition is painful. Chloretone alone or with suprarenal liquid may be used in place of cocaine and may be given to the patient without hesitation for unrestricted use.

I disapprove of nitrate of silver, steam inhalations, the galvano-cautery, scarifying and curetting in all these cases.

J. C. CONNELL.

OSTEO-SARCOMA OF FOREARM.

M. C. æt, 51 was referred to me by Dr. Kennedy, of Bath, on the 17th of January last. The photograph from which the accompanying cut was made, was taken soon after her admission to the hospital, and gives a good idea of her condition.



The weight of the enormously enlarged forearm was a great drag upon her, and she could do nothing but nurse it. She gave the following history :—In April, 1898, she noticed a swelling in the middle of the right forearm which steadily increased—the growth being symmetrical in the circumference of the member. She continued to use the arm in ordinary household work until September, 1900 when the tumor rapidly increased, and the hand became puffy and œdematous. About this time a secondary swelling made its appearance over the upper part of the sternum, and on admission a semi-globular hard tumor was found in this situation measuring 5 inches transversely by $4\frac{1}{4}$ inches. A diagnosis of osteo-sarcoma was made. Operation for removal of the

tumor on the sternum was not feasible, but amputation of the right arm above the elbow joint was advised for the manifest relief it would afford to the patient. To this the patient readily consented, and after a fortnight's preparation by rest, good food and tonics, the operation was performed on Feb. 2nd by the circular method. A good recovery has resulted.

Dr. W. T. Connell gives the following report:—The forearm is replaced by a large fusiform tumor weighing eight and one half pounds. This tumor reaches from the carpus to the elbow-joint, and surrounds both bones. Anteriorly and interiorly the growth protrudes forward about the middle of the forearm, and the protrusion contains a cystic cavity filled with a slightly viscid yellow fluid of which there is about 16 oz.

The cyst formation is due to softening of areas of the tumor which have undergone mucoid degeneration. Elsewhere in this portion of the growth areas of typical osteo-sarcoma alternate with areas of mucoid degeneration. On the posterior and external portions of the forearm the growth is more typically fusiform and consists of typical osteo-sarcoma. The bones are completely infiltrated and it is not possible to outline their situation as they pass without change into the tumor mass.

The lymph gland above the internal condyle of the humerus was infiltrated. The microscope confirms in every particular the features described above.

W. G. ANGLIN.

THE OUTLOOK OF MEDICINE.

Read before the Students and Alumni, Queen's University in Convocation Hall, Sunday, March 17th, 1901.

THE century just closed, more than any period in the history of mankind, has been productive of marked advances in all that tends to man's benefit, his physical comfort, his moral development, his social elevation.

Education has been diffused and the lowly have been uplifted. Governments have passed from the hands of the few to exist only as the voice of the people determines. Science in all its departments has advanced by rapid strides, and the great powers and elements of nature have been made the servants of mankind. But in no department of scientific thought has any

progress been made at all commensurate with the advancement in the field of medicine. If we regard this progress of medicine during the last century from a purely academic or scientific standpoint, we stand amazed at the work accomplished. But if we view it from its benefits to humanity, the alleviation of human suffering and sorrow, and the preservation of human life, then it lies within no man to even form an estimate of the glorious results of the past century in the field of medicine. Error, superstition, quackery, empiricism, all have passed, let us hope, forever, from their favorite haunts by the sick-bed, where hope and fear alternate.

So to-day medicine stands on a purely scientific basis. Its ranks are filled with men endowed with a true spirit of research, eagerly longing to see the truth, to make light what is yet dark, and to unfold the mysteries that have not thus far been revealed to the eyes of man. Even in the early days of the century light was slowly dawning. Jenner had already made his great discovery. In 1801 Bichat published his classical work on the tissue structure of the human body. The introduction of the microscope led to a closer study of these tissues and to the determining of their cellular origin, and thus to the study of embryology, biology and histology. A knowledge of the cellular structure of the various tissues and organs led up to the enquiry as to the duty of the various cells, what function do they perform in the animal economy.

Soon we knew of the cells of special sense, cells of secretion and excretion, and physiology came to the aid of the practitioner. In studying the normal growth and structure of the individual, any deviation to the abnormal becomes simple of explanation. Diseased structures of various forms in adult tissues find a simple explanation when compared with the tissue of the embryo. In the study of embryology the wonderful similarity between the structure of man and the lower animals became evident. And as the embryology, anatomy and physiology of man and the lower animals are similar, so too the diseases affecting man affect with trifling variations the lower animals. For these reasons it became possible to study in animals the diseases affecting man. Hence from our knowledge of embryology and biology began our knowledge of pathology and bacteriology, learning from diseases

of animal life what would have taken years, if ever, to have learned from those diseases in man alone. The scientific study of the normal led to a study of the abnormal.

In 1850 Devaine of France discovered in the blood of wool sorters affected with anthrax minute rod like bodies, which he described as "little filliform bodies, in length double the diameter of a red blood corpuscle and having no spontaneous movement."

Brauel in 1857 noticed similar bodies in the blood taken from a man a few hours before his death from anthrax. By injecting this blood into the bodies of animals he was enabled to cause their death from this same disease. True neither Devaine nor Brauel at the time realized the true import of their discovery. Then followed the great renaissance in medical investigation, Pasteur's brilliant speculation on microbic life in the various forms of disease, in putrefaction, fermentation, stimulated research the world over. In 1882 Koch of Berlin discovered the bacillus of tuberculosis. In 1883 Klebs and Löffler discovered the bacillus of diphtheria which has since borne their names. Then followed the discoveries of the cause of erysipelas by Feleisen, of Tetanus, by Rosenbaum and Nicolaier, and of the bacillus pestis, or plague bacillus by Kitasato. Others at the same time were diligently engaged either in perfecting these discoveries or in working along independent lines, Roux, Sternberg, Rokitansky, a galaxy of great men in a great age. Not only did these scientists make themselves well acquainted with the morphological characteristics of these various bacilli, but what is fully as important, with the geographical areas wherein they flourish, with their propagation and with their habits of life. How could they turn this knowledge to account for the benefit of humanity? From these considerations sanitary science and preventative medicine had their origin.

Clinicians had already observed that in many diseases of microbic origin an attack however mild rendered the individual immune against a subsequent attack. This is nature's way of conferring immunity. This was the principle that guided Jenner. It occurred to these investigators, that by careful sanitary precautions on the one hand, and the general application of the law of immunity on the other, the ravages of the microbic

diseases could be greatly restricted, if, indeed, they could not be entirely wiped out. To this end Pasteur, Koch, Roux, Behring and others no less brilliant, turned their energies. Slowly but none the less surely did experiment after experiment, through years of patient labor lead to the crowning glory of modern medicine the laws of immunity, and the foundation of serum therapy. And these laws of immunity, and the treatment by serum therapy have been most successfully applied to diseases most fatal in their character, and hitherto, scarcely if at all amenable to the ordinary forms of therapeutics. I refer to such diseases as, Tetanus, Rabies, Plague, Diphtheria, Anthrax and Typhoid Fever. True immunity is conferred as we have mentioned by an attack of the disease in a form however modified. One attack of small-pox will confer immunity against a subsequent attack. Immunity may be conferred by the introduction into the system of a modified or attenuated virus of the disease. This was the principle adopted by Jenner in vaccination. It was also the form adopted by Pasteur in his treatment of anthrax, and in his treatment of the plague that affected the silk-worm in France. Immunity may be conferred by the use of toxins in small doses that is of the living and fully virulent organisms, a principle adopted by Roux in plague, and Hoffkine in cholera. To these forms of inoculation may be employed the term active. Passive immunity may be induced by the introduction of antitoxine serum, that is the serum from the blood of an animal already protected against the disease. And if the introduction of the serum of animals already immune to the disease can prevent that disease, the next step naturally to suggest itself would be, that this serum if introduced in large quantities would destroy or counteract the influence of this germ when established in the system, hence serum therapy had its origin. Behring was the first to apply this principle and with magnificent effect to the most loathsome and fatal of diseases, to diphtheria. The world little appreciates what a debt it owes to this great man. Behring step by step built up the law, that if an animal has been artificially protected against a disease its blood or serum acquired the power if injected in sufficient quantity into another animal of directly transmitting an immunity from that agent. In like manner did he establish the principle of serum therapy. Behring's discovery

and the wonderful success following its application in diphtheria has stimulated pathologists to make the law applicable to all diseases of microbic origin. To consider the various experiments on toxines and antitoxines and the various applications of serum therapy would take us far beyond the limits of this paper.

I cannot part from this phase of medical progress without referring to the last and most important discovery of the 19th century, the origin of malaria fever. Here was a disease that for ages defied investigators until the solution of the difficulty seemed beyond the reach of science. But what was long a mystery is one no longer. Even at the very time the discovery was being worked out, a leading member of the Italian Parliament declared "If malaria comes from the soil, and this seems to be indisputable, our struggle against malaria is vain. We are born in a country whose soil is not a favorable one and we cannot fight against fate." But the fight was continued and now it is proven beyond a doubt that malaria, like plague, or diphtheria, is microbic in its origin. This microbe is an animal parasite. The three forms of the disease are produced by three different parasites, one producing tertian, the second quartan and the third pernicious malaria. This animal parasite is propagated in the stomach of a variety of mosquito which bears the name of anopheles. To Patrick Manson belongs the honor of the great discovery. True, others took part in the work, Ross, Koch, Bancroft, Grassi and Celui, but the glory is Mason's. It is just difficult to tell where the idea originated but the mosquito has for long been under grave suspicion.

Laveran in 1880 discovered the parasite in the blood of patients ill with malaria fever. For two years Manson worked making over 4000 experiments only to find he was working on an innocent mosquito, the genus culex. Then he turned to the Anopheles, and met his long looked for and well earned reward. Outside of man and mosquito, malaria does not exist. Whenever the parasite finds itself in any other medium it perishes without fail. No man, no malaria, no mosquito no malaria. It has not yet been discovered who was the first sinner, man or mosquito. Grassi tells us that on the Island of Caprera anopheles existed yet there was no malaria. But one sad day a garrison containing soldiers who had malaria were stationed there. They

infected the anopheles and the anopheles in turn infected the whole Island. Manson brought anopheles, fed on malarious patients in Italy to the City of London, and infected his own son. By studying the habits of these mosquitos Manson and Grassi have taught us how to live in malarious districts and not contract the disease. The anopheles like so many parasites that live on humanity remain quiet during the day. From one hour before sunset till one hour after sunrise they seek their prey.

Drs. Sambon and Law with their servants lived in the most malarious district of the Roman Campagna from June till October and not one of them contracted the disease. They moved about freely all day but during the hours mentioned above they remained in an enclosure secured by netting and wood-work from the presence of the anopheles. When the experiment had proved a success Grassi telegraphed his salutations to Manson, a message more pregnant with good to humanity than the dispatch to the Roman Senate from the greatest Roman of them all. For the benefits conferred by Manson on humanity will extend far beyond "bounds that Cæsar never knew." When we consider that five millions of people die annually from fever, mostly malaria in India alone, when we consider that tropical fever, jungle fever, coast fever, are all due to the same cause, when we consider the graves of Sierra Leone, when we think of the suffering of Martin Chuzzlewit in his New Eden, then we can form some idea of the value of Manson's discovery. True from these regions many have come out strong like Mark Tapely, but what of the countless thousands who have gone therein and cometh not. It ought to be a subject of great pride to us all that the three great events in the history of medicine were the result of the Anglo-Saxon labour and genius, Jenner, Lister, Manson. What an illustration triumverate! And while the laborers in the laboratory were thus solving problems, obscure and unknown, the watcher at the bedside was not without his reward. The thermometer found its way into clinical medicine in 1860. The introduction of the stethoscope by Laennec and the art of Auscultation were events of the highest importance in the study of diseases of the heart and lungs. In fact until the time of Laennec and Auenbrugger who introduced percussion a rational study of these organs was an utter impossibility.

Thus it was that medicine evolved from the darkness of mys-

ticism and empiricism to the light of science. And from the magnificent edifice which patient science has, stone by stone, erected during the past century let us linger for a moment to view the shore beyond. While we contemplate with wonder and amazement the progress during the past century of bacteriology, and serum therapy and clinical medicine we might well hesitate to outline the limitless possibilities of the future. But it is along the line of discovery, prevention inoculation, immunity and serum therapy, that our efforts will be directed. When disease makes its appearance clinical experience and bacteriology reveal its identity. When identified then if contagious, immediate and perfect isolation should follow. Inoculation should then be resorted to, in order to secure immunity and serum therapy to effect a speedy cure of those afflicted. Fortified with our present knowledge and with an awakening of the public consciences to the danger of contagion on the one hand, and the possibilities on the other, we may enter the present century with confidence and hope. With energies rightly directed it is not too much to expect that diseases such as Plague, Small-pox, Typhoid, Cholera and allied diseases will during this century cease to exist and be remembered only as ugly dreams of the past. In the words of Behring, "if we combine prophylactic and actual treatment with antitoxic serum we must eventually succeed in abolishing diphtheria and in confining it to the pages of history." And Grassi says that "Malaria will in the near future become as rare as many of the infectious diseases which were so justly dreaded and often caused such wide spread mortality before the discoveries of modern medicine robbed them of their terror." It is too much to expect that the day will ever come when diseases will cease to exist. There exists in the human body a latent tendency to certain diseases.

But the discoveries of modern medicine have left work for us yet. What advances have we made with regard to tuberculosis? It is many years since the discoveries of Koch made known to us the cause of the disease. We have learned, too, that it is contagious and communicable. We have made slight sporadic attempts at treatment, and yet this white plague, this scourge of humanity, claims its numberless victims. Well might an eminent English writer exclaim that in the presence of tuberculosis and cancer every medical man should hang his head. No

serum treatment has as yet been discovered that will destroy the tubercle bacillus or drive it from its habitation in the human body that can be used with therapeutic safety. It is not too much to say that the day is not far distant when the labor of those tireless workers will have its reward. In the meantime our present duty is to take advantage of our knowledge already acquired to check the progress of this dreadful disease. Every effort should be made to educate the public as to the nature of the disease, its contagious character and the grave danger of contact with those afflicted. Its early symptoms also should be generally known that advice may be sought in the early stages of the disease in the hope that the hygienic-dietetic treatment may effect a cure. With early discovery, isolation and sanitary treatment, even as at present known, we may hope to limit the ravages if we cannot relegate the tubercle bacillus to the pages of history.

The eyes of the medical world have of late years been turned to the spread of the Bubonic plague. From the crowded centres of population in Asiatic cities, where plague is endemic, it breaks forth with terrible mortality. The flowing tide of commerce carries it to all parts till it has become a source of fear and dread to all mankind. Since the discovery of the bacillus-pestis the energies of eminent bacteriologists have been concentrated in an endeavour to limit its area and to wipe out its existence. There the outlook is most hopeful. Kitasato, Roux, Hoffkine, Yersin, Koch and Galeoti all have worked out, some a modified virus, others toxines and anti-toxines for the immunity of affected districts and the cure of those afflicted with the disease. Hoffkine claims immunity for 80 per cent. of those treated by his method. There is a wholesome dread of the plague existing in the mind of the laity, a fact that will aid largely in its isolation and treatment. Time will be required to overcome Eastern prejudices and to procure better sanitary arrangements, but the end is in sight.

To limit the infectious diseases of childhood should be our especial care. The sanitary laws as now existing and half administered are entirely inadequate. Of what value is it to placard a house announcing that scarlet fever or measles exists there, when the inmates of that house may go in and out at will,

following their regular avocations and spreading the contagion wherever they go. The one remedy which is necessary is compulsory isolation, either in special isolation hospitals or in special wards of an ordinary hospital. Disinfection of affected houses to be thorough should be done under civic guidance. More timely, more vigorous, measures are certainly required if we are to cope successfully with diseases that bring in their train such waste of life and such infinite sorrow. Can we not look forward to a better condition and lend our energies to its early coming?

There yet remains that ever increasing chain of disorders that for want of a better name we term neurosis. In the struggle for supremacy in commercial life, and in the vain longing for social distinction, we violate the ordinary laws of nature, and nature permits not her laws to be broken with impunity. Is it not time we returned to a simpler, a safer, and, in the end, a far happier rule of life? Rest, shorter business hours, more outdoor exercise, fresh air, reasonable holidays, these are the only cures that can restore the wavering balance and bring health to the overworked and broken down nervous system. Science cannot give immunity against the slow microbe of advancing years, nor can serum-therapy restore health and vigor to him whose youth and vitality have been worn out under the excesses of business or social life.

It is the hope of every physician that long before the close of the present century diseases of a contagious character will cease to exist, or at all events will be no longer neither a dread nor a menace to the community. If this expectation be realized the early recognition of such diseases is absolutely essential, not only in their clinical but in their pathological aspect. Skill and accuracy in bacteriology is too much to expect from the ordinary physician. He has neither the time, the skill, nor the apparatus necessary for such work. Nor ought public bacteriologists to be provided by our medical schools, the greater number of which are either under private control or affiliated with universities receiving no state aid. Besides the teachers of these subjects in our medical schools have their own duties to perform, requiring all their energy and all their attention. It is therefore plainly the duty of the State, in self-protection, to appoint bacteriologists in our larger centres of population

or to give State aid to medical schools, that increased assistance may be provided, that original research work may be pursued, and public bacteriology may be performed therein. England has already, though not too soon, recognized this principle by establishing a school of tropical medicine at Albert Docks, under the distinguished guidance of Patrick Manson. Germany long ago adopted this course, and the brilliant work of Koch was conducted in an Imperial Institute in the City on the Spree. For eighteen months Grassi worked sixteen hours a day in an attic of the Roman University. He had no armamentarium, yet we are told that every drawing of his work was done with a beauty and a precision worthy of the old masters in that once famous seat of art. Italy had no aid to give Grassi. She had to maintain an army and a navy in order to be a great nation. Poor little State! And yet the labor of Grassi will give her territorial richness, her armies or her navy could never win. And can we not look forward to the day when our own Governments in their growing time may spare from their overflowing coffers public aid to a movement of such great public interest.

The present century is opening with schools and colleges and universities widely disseminated and with their doors standing open to those who would enter therein. The master's of the world's literature are within easy reach of all. The ideal physician is he who is not only skilful in his profession but who brings to his daily task a gentleness and kindness of heart, an undefineable charm only acquired through a study of the humanities. How necessary therefore to the study and practice of medicine is a broad and liberal preliminary education. *And with the road to such, so easy of access, we may expect it will be travelled by the physician of the future.* We will see him filling year by year a broader, nobler, more useful sphere in the community. We will see him not only treating the sick, but standing for all that is learned, cultured, and refined.

And like Hawthorne's physician, that beautiful character in the "House of the Seven Gables," we will see him "made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge, faithfully too for the advancement of human welfare, men thoughtful for others, caring little for themselves, kind, just, and true."

E. RYAN.

MELANO-SARCOMA OF THE FEMALE URETHRA.

THIS is a very rare condition—four cases only, having been reported. (Operative Gynæcology, Kelly.) One by Beigel, 1875; a second by Ehrendorfer, 1892; a third by Galabin and a fourth by Reed, 1896. I have deemed it therefore of sufficient interest to record the following case:—

In July of last year a Mrs. H. consulted me with a history of having been “running down” for some six months. She was a pale, delicate looking woman, about 46 years of age, married, and had borne six children. After ordinary investigation I could not discover sufficient evidence to satisfy myself as to the cause of the depressed state in which I found her, and on making a vaginal examination I found a dark soft mass about the size of an almond projecting from the meatus urinarius, and so closely resembling a blood clot that I at first thought it was an elongated clot occupying the urethra and protruding through the meatus, but on attempting to withdraw it, however, it was found to be adherent to the urethra. A small portion was removed with scissors and submitted to Dr. W. T. Connell, who pronounced it a melanotic sarcoma.

As she was quite willing, when the gravity of the case had been explained, to have it removed, I operated on her at the General Hospital on Sept. 2nd last. A circular incision was made close to and surrounding the meatus; the mucous, submucous and muscular coats of the urethra were drawn down as far as possible, and the growth, which embraced almost the whole calibre of the canal—the only part free from it being a portion of the anterior wall, was found to extend up almost to the bladder. About an inch of the urethra was removed, leaving only a small portion at its upper end. There was very little hemorrhage during the operation, and, what there was, required the application of two pairs of forceps only, since the venous sinuses of this canal lie partly in the submucous and partly in the muscular coats, and, since these were drawn down together, the hemorrhage that did occur was only when the canal was transversely divided.

Since the sarcoma had originated from the submucous coat and as the vessels of this coat have direct venous connection with the muscular coat surrounding it, it was considered advisable to remove the latter coat as well as the former. A catheter was retained in the bladder for two days, and, after its removal the patient found no difficulty whatever, in controlling the bladder. The case progressed favorably for five days when pneumonia developed and she died three days later. No post-mortem was permitted.

JACKSONIAN EPILEPSY IN AN INFANT.

On March 1st inst. I delivered a patient of a well developed full term male child—labor of about two hours' duration being quite normal. About ten days after confinement the mother noticed peculiar movements of the infant's hands, face and legs, but did not consider it necessary to seek advice, as she thought it was possibly associated with colic, so that when seen by me two days later the condition was quite pronounced. The paroxysms started in the left hand, the fingers of which were in a condition of clonic spasm, while the forearm was flexed and directed towards the left. Almost simultaneously the fingers of the right hand were flexed and twitching, and the right forearm also flexed, pointed in the same direction as the left, and was therefore lying across the chest. The muscles of the face, especially of the angles of the mouth, were next involved, and lastly the legs. This order was quite regular, but the involvement of one part followed so closely on that of the other that the spasms seemed to be simultaneous, but on watching closely, those affecting the arms were seen to precede those of the face and the latter those of the legs. There was no cry preceding the spells, nor were the eyes involved, and immediately after a spasm the child was quite bright. I advised the mother to keep record of the number of paroxysms, and to my surprise on making a visit next morning I learned that during the preceding 24 hours the child had had ninety-three. The question arose, was the condition central or peripheral i.e. reflex. It could hardly be the former, since there was no history of traumatism, nor would any cortical irritation be likely to cause the convulsions to start almost simultaneously in the two arms, so that it seemed reasonable to suppose that the

cause was peripheral, and, on examining the genital organs the penis was found to be in a state of erection, which condition persisted between the paroxysms. Circumcision was performed, and the mucous layer of the prepuce found intimately adherent to the glans. During the 24 hours immediately following the operation the number of spasms was eighty; during the next 24 hours, forty; during the succeeding 24 hours, ten; and since then none, the child being apparently well. Ammon. Bromide 2 gr. every three hours had been administered, but I am satisfied the improvement was the result of the removal of the irritation by means of the circumcision. Remarks: The effects of the irritation had apparently been concentrated on the lower portion of the middle third of the Rolandic area since the spells began with the primary involvement of the hands, and spread in a radiating manner from this focus, but being nearer to the operculum the face was involved before the leg. There was no turning of the head to the opposite side, no effect on the pupils, &c., hence the parts affected seemed to be the ascending frontal and parietal convolutions alone.

D. E. MUNDELL.