trouble, and to this may be added the statement that no patient with acute purulent otitis media can be considered as free from the possibility of extension of the disease while any trace of the discharge exists in the middle ear. Having this in mind we may be sure that we shall save many of our patients from needless complications by a careful oversight of all acute otitic suppurations, and indeed, a routine examination of the ear in all general diseases where any symptoms are referred to that organ is greatly to be commended.

SURVEY OF THE TUBERCULOSIS SITUATION IN MASSACHUSETTS.*

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DURING the past few years a steady but sure progress has been made in our State campaign against consumption. New and progressive legislation has been enacted, local hospitals are being established, the State sanatoria have been enlarged and improved and a sane public opinion is making itself more and more felt in regard to the disease and its prevention. In this paper I propose to describe the situation as it now stands, to discuss plans for the future, and to state what I believe to be the policy of Massachusetts concerning the tuberculosis question.

The number of deaths in this state from pulmonary tuberculosis in the year 1911 was 4,817; from this figure there are various methods of estimating the number of actual cases of consumption. None of these will give accurate figures, but only an approximate estimate. Philip of Edinburgh believes it safe to multiply the number of deaths at a given time in any community by 20; more conservative estimators in this country use 10 as a factor instead of 20. Even this gives nearly 50,000 cases of consumption in this State in 1911. In 1910 a commission appointed by the Governor to "Investigate and Report Upon a System of Caring for Tubercular Patients" gave as its opinion that there were approximately 35,000 cases of all forms of tuberculosis in Massachusetts at that time. Of these cases 7,000 to 10,000 were probably extra-pulmonary, and many others not in need of hospital or sanatorium treatment. This Commission estimated the number of consumptives needing hospital or sanatorium care as from 10,000 to 15,000; they further stated as their opinion that a total of from 5,000 to 6,000 beds would probably care for all these patients. Dr. Arthur T. Cabot, Chairman of the Trustees of Hospitals for Consumptives, basing his estimate on the ground that the average consumptive needs hospital treatment at least during the last two years of his life, considers that the number of deaths multiplied by two will give a fair estimate of the number of consumptives needing

treatment in an institution at a given time. This gives us as our working basis 9,634 consumptives, approximately 10,000, needing institutional care.

What are our facilities for handling these patients? There are at present not over 2800 beds, public and private, for consumptives, in this state. This figure includes beds at our insane and criminal institutions. During the past year the average length of stay of patients at the North Reading, Lakeville and Westfield State Sanatoria was five months. As the great majority of these patients were in the advanced stages it is fair to use this period, five months, as an average length of stay. This would allow the 2,800 beds in Massachusetts at the present time to accommodate about 5,500 patients, leaving 4,000 to 4,500 consumptives to be cared for in their homes or not at all. Despite the great advances made in recent years by the "class" and "home sanatorium" methods of treatment it is safe to say that the number of patients who are, and indeed who can be well cared for in their own homes, as compared with a well run hospital or sanatorium is so small as to be negligible. This but emphasizes the great need of further beds. As these patients under consideration are largely of the advanced type it is only humane that they be given treatment in institutions near their homes, where they can be easily seen and visited by friends and relatives. This means local tuberculosis hospitals.

The Commission above referred to as part of its recommendations urged the passage of legislation to encourage the building of local tuberculosis hospitals. Following this advice the Legislature of 1911 passed three important acts now generally known as the "Tuberculosis Hospital Act," the "Tuberculosis Dispensary Act," and the "Subsidy Act." The first of these requires each city or town of 10,000 inhabitants or over to erect and maintain a hospital for contagious diseases, including tuberculosis, plans for such hospitals to be first approved by the State Board of Health; the second requires the same cities and towns to open and maintain a dispensary for the discovery and treatment of tuberculosis, while the third, supplementing the first, provides for a subsidy of \$5.00 per week per patient whose sputum shows the presence of tubercle bacilli, to all cities and towns maintaining a tuberculosis hospital or private incorporated tuberculosis hospital officially approved by the Board of Trustees of Hospitals for Consumptives.

As a result of this legislation protests arose on the one hand from certain cities and towns who, even with the help of the State subsidy, were not at all anxious to spend the money necessary to comply with these laws, and on the other from certain persons who claimed that this was fundamentally bad legislation and of no practical value. Despite this, however, these laws have been effective and slowly but surely are becoming potent factors in the anti-tubercu-

* Read before the Bristol North Medical Society, Sept. 19, 1912.

losis campaign in this State. Other States, such as New Jersey and Wisconsin have passed similar laws, including the "Subsidy law." In these States local hospitals, usually based on the county plan rather than that according to cities and towns, are a part of the general scheme.

The Massachusetts law provides "that a city or town subject to the provisions of this act (the Tuberculosis Hospital Act) which upon the request of the State Board of Health refuses or neglects to comply with the provisions hereof shall forfeit not more than five hundred dollars for every such refusal or neglect." There are those who loudly protest against what they call dilatory methods on the part of the State authorities in not seeing that these laws are at once complied with and fines imposed according to the terms of this act. Those who have given thought to the subject, however, know that such are not the ways of progress; that it is far better to go slowly, to suggest and advise rather than to rouse obstinate resistance by mandatory methods. The following is the present status as regards local tuberculosis hospitals and dispensaries in the 54 cities and towns in this State of 10,000 inhabitants or over.

These cities and towns have already established or are actually building tuberculosis hospitals: Boston, Fall River, Cambridge, New Bedford, Lynn, Springfield, Lawrence, Somerville, Holyoke, Salem, Quincy, Pittsfield, Waltham, Brookline and Westfield. Of these 15 cities or towns 10 have hospitals which have been approved and are, therefore, in position to obtain the subsidy of \$5.00 per week for each indigent patient with positive sputum.

The following 10 cities or towns are planning to build hospitals: Worcester, Brockton, Malden, Haverhill, Fitchburg, Everett, Northampton, Newburyport, Clinton and Adams.

The remaining 29 cities and towns as far as I have been able to ascertain have as yet taken no definite steps toward complying with this law. Of these cities Lowell, with a population of 106,294 and with 114 deaths from consumption in 1911, stands preeminent in unenviable isolation. Newton has a few beds in connection with its City Hospital; Taunton, with 34,259 inhabitants, and Chelsea, 32,452, come next in the list, while lower down are a number of smaller towns such as Wakefield, Arlington, Greenfield and Winthrop, with 10,000 to 11,000 inhabitants each. The law provides that cities and towns which can conveniently do so may combine in building a hospital. Probably many of these smaller places will find this the best solution of the difficulty. At both the Cambridge and Somerville tuberculosis hospitals there are always patients from neighboring towns whose expenses are paid by their local boards of health. As such arrangements comply with the spirit of the law, by providing a place where advanced consumptives can be cared for near their homes, there is no reason why further hospital accommodation should be demanded of these cities and towns

until it has been shown that the present arrangements are unsuitable. On the other hand, a city in the centre of the State which is planning a local hospital but is at present without facilities for caring for its consumptives, asked that the state subsidy be granted for one of its patients kept at a municipal hospital of another city some fifty miles away. As this did not comply with the spirit of the law the request was not granted.

Almost every form of construction can be found in these local tuberculosis hospitals, although more and more the tendency is toward

Lynn Tuberculosis Hospital Before Being Reconstructed. 1912.

Lynn Tuberculosis Hospital After Being Reconstructed. 1912.

a simple and inexpensive type. This is in distinct accord with the opinion of experts all over the world. Boston, at tremendous expense, has built a magnificent hospital at Mattapan where everything has been done to make the life of the advanced consumptive as happy as possible. Personally I am strongly of the opinion that equally good results could have been attained with a vastly smaller expenditure of money. Cambridge has gone almost to the other extreme and has built a hospital in a rather unattractive location of somewhat unnecessary plain and severe construction. Lynn has made over a simple frame house into an excellent hospital for 45 or 50 patients. The location is pleasant and easy of access; the cost in the neighborhood of \$500 to \$600 per bed. Lawrence has an excellently planned institution for 85 or 90 patients. The cost was not over \$500 per bed. Owing to an unfortunate mixture of politics and medicine this hospital has never had more than 50 or 55

patients at one time. Holyoke has built a hospital on the pavilion plan, on a delightful site, at low cost but apparently high efficiency. Although it holds only 27 beds, which is a small allowance for a city the size of Holyoke, 57,730, it seems to meet the situation very well. This is probably due to the nearness of the Westfield State Sanatorium, to which institution many Holyoke patients prefer to go. Fall River has prepared plans and models for a large and thoroughly modern hospital. Here again politics has interfered and forced the postponement of actual building. The average weekly cost of maintenance at these local hospitals varies from \$7.00 to \$10.00. With the help of the State subsidy of \$5.00 a week, however, the actual cost of maintenance is rendered very low indeed.

The situation as regards the establishment of dispensaries is not so encouraging. Despite the fact that a good tuberculosis dispensary needs only a small office, a waiting room, and the services of a doctor and a nurse, local boards of health have been very slow to comply with this law. In many instances the local tuberculosis society has already established a dispensary. In some cases this was turned over to the board of health but more often it was allowed to continue as before. The following cities and towns, 18 in number, have tuberculosis dispensaries maintained by the local board of health, the local tuberculosis society or some other organization: Boston, Chelsea, Worcester, Fall River, Lowell, Cambridge, New Bedford, Springfield, Brockton, Haverhill, Salem, Fitchburg, Pittsfield, Brookline, Attleboro, Newburyport, Gardner and Clinton. Of these 18 dispensaries only six were established as a result of the "dispensary act" of 1911 and are managed by the local boards of health. I hope that the rest of 1912 and the year 1913 will see each of the 54 cities and towns in Massachusetts of over 10,000 provided with a suitable dispensary open at least every other day and one or two evenings a week. Doctors will give their services if necessary, although they should be paid and well paid for them; a good nurse can be secured for \$600 to \$1,000 a year, and is the most important feature of any such dispensary. The cost of these need be comparatively little beyond the nurse's salary. The good which they can accomplish is enormous.

How are these local tuberculosis hospitals and dispensaries to fit in with the State sanatoria and the tuberculosis campaign in general? If they are not so made to fit in as integral parts of a general scheme much of their usefulness will be lost. As stated above, the part to be played by the local hospital is to care for the advanced and dying consumptive. The local dispensary, in addition to diagnosing and discovering new cases, must follow up old cases discharged from sanatoria; it must see that sick patients keep up treatment, and that patients arrested or improved get proper employment. These two

functions—that of caring for the advanced consumptive in local hospitals and of following up cured or arrested patients on their return are the two most important factors, in my opinion, in the entire field of tuberculosis work, and at present the two factors to which least attention is paid.

When a patient enters or leaves a State sanatorium certain machinery is set in motion. If the patient is indigent, as stated on his application blank, the local board of health is notified on the arrival of the application at the Boston office. Again on admission to a sanatorium a few weeks later, the local board of health is notified so that the patient's rooms or house may be fumigated and his family cared for. On discharge from any State sanatorium the local board of health is again notified, as well as the local tuberculosis society or other agency, and also the State Health Inspector of that district. It would seem, then, that everything possible had been done as far as the State authorities are concerned to look out for the interests of the patients prior to admission and on discharge by thus notifying those whose duty it is to care for them. Despite these efforts it would seem as if the ground gained at the sanatoria was largely lost through lack of coöperation on the part of local boards of health. At the last tuberculosis conference held in Boston in April, 1912, papers were read by Dr. Curtis of Newton and Dr. MacKnight of Fall River showing the pitiable state of many consumptives after their discharge as "improved," "arrested" or "unimproved," as the case might be, from the State sanatoria. These remarks, looked upon by many as evidences of failure on the part of the state institutions, were really indictments against the boards of health in the cities concerned. The sanatoria have done good work, but this work to be effective must be followed up by equally vigorous efforts on the part of local authorities. To do this work properly local tuberculosis hospitals are necessary for advanced cases, and local dispensaries, provided with a suitable nursing force are absolutely essential to clinch and continue the gain made during the patient's stay at the sanatoria.

The Boston Association for the Relief and Control of Tuberculosis has recently placed at the disposal of the State Tuberculosis Board a social worker to investigate the condition of discharged patients, and to ascertain how far local authorities are co-operating with State authorities in looking after and helping patients discharged from our sanatoria. This work has been going on for only a short time but results even so far and covering only comparatively few patients, 107, are striking. Of those patients discharged within the last three months from our State sanatoria only 27 have been visited in their homes by an agent of the local board of health, and in only 56 instances had the premises been fumigated on departure of these patients to

sanatoria. Last year the State of Massachusetts spent over \$550,000 for the care of its patients at our four State sanatoria. In addition to this a large amount was spent in the care of tuberculous patients at the State Infirmary and at the various criminal and insane institutions; the money paid over to cities and towns under the subsidy act is already large and constantly increasing. It would seem then that the State is doing its full share. Is it not the urgent duty of local authorities to exert themselves to bring about a fuller coöperation with the State efforts than they are now doing? The expenditure in money, time and energy need not be great; the good results obtained would be incalculable.

It has been said that Massachusetts has no settled State policy as regards tuberculosis. In my opinion it is ignorance of the facts which leads those who adhere to this view to make any such statement. Massachusetts has a very definite policy and the work of the Board of Trustees of our State Sanatoria during the past five years, under the leadership of Dr. Arthur T. Cabot, has been carried on with this policy definitely in view. What we already have or are aiming at in this State is somewhat as follows:

1. A State sanatorium (Rutland) reserved for really incipient and favorable cases where the latest and best ideas of sanatorium treatment can be carried out.

2. Other State sanatoria, not far distant from the large centres of population (North Reading, Lakeville and Westfield) to which can be sent incipient consumptives should they prefer this to Rutland, and also moderately advanced and chronic advanced consumptives who have good chances of arrest and cure under real sanatorium treatment.

Sleeping Pavilion at the North Reading State Sanatorium.

3. A local municipal hospital in each city and town where advanced and dying consumptives can be isolated, cared for and made as comfortable as possible away from their homes and yet near to family and friends.

4. A tuberculosis dispensary in each city and town, provided with a sufficient number of trained nurses or social workers, who can direct patients as to home treatment while waiting to get into a sanatorium or hospital, who can help and advise the family after the patient has gone,

and who can see that the patient carries on treatment, keeps under supervision, or has a suitable employment on his return.

5. A State sanatorium to which young children can be sent and given schooling while taking the cure (Westfield).

Children at the Westfield State Sanatorium.
(There are now over 65 under 15 years of age at this institution.)

6. More stringent enforcement of the law, which should regard the vicious, alcoholic and careless consumptive as a criminal and to be treated as such.

These, in my opinion, are the most important features of a very definite state policy. In addition to the above mentioned points there are, of course, many other lesser ones correlated with the above, such as factory and workshop inspection as carried on by the State health inspectors, a further employment of school and factory nurses, educational work by means of articles in the daily press, fresh air rooms, open air schools, etc. Along all these lines progress is being made. The outlook is a hopeful one. Despite the fact that our problem is radically different and more difficult than that of England and Germany, where the percentage of foreign born consumptives is slight compared to ours, which is nearly 50% of the whole, we are making a steady but sure advance. The medical profession must lead in creating a strong, sane public opinion which will bring about a keener appreciation of the absolute necessity of early diagnosis and prompt treatment of the incipient cases and the isolation and care of the advanced and dying consumptive.

PELLAGRA IN RHODE ISLAND.*

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THE scope of this paper is purely historical and attempts to state, as far as the writer has been able to determine from the data available, the extent of the prevalence of pellagra in Rhode Island. The subject will first be considered under the head of Pellagra in Relation to the State Hospital for the Insane.

In the summer of 1910 a case of pellagra occurred among the patients of the State Hos-

* Read before the meeting of the National Association for the Study of Pellagra, at Columbia, South Carolina, Oct 3, 1912.