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.*

BY ARTHUR H. HARRINGTON, M.D., HOWARD, R. I.

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.

pital for the Insane. This was the first case which any of the medical staff connected with the hospital had ever seen and recognized at the same time. Following this more cases developed among our patients during the summer of 1910. We asked Dr. Gardner T. Swarts, Secretary of the State Board of Health, to see these first cases and he confirmed our diagnoses.

Between the summer of 1910 and the month of August, 1911, the symptoms of pellagra, gastrointestinal and neurological, together with the well marked skin lesions appeared in 21 patients. Ten of these have died from the disease. These 21 cases have been made the subject of study by two of the hospital staff, viz. Dr. E. H. Cohoon and Dr. Frederick J. Farnell. The full report of these cases with that of the clinico-pathological work done by Dr. Farnell upon them will probably be published soon.

Subsequently to these 21 cases there appeared, between August, 1911, and October 1 of the present year eleven additional cases with two deaths. Thus we have had at the State Hospital for the Insane since the summer of 1910 32 recognized cases of pellagra with 12 deaths or a mortality of 37%. Of these 32 cases, 27 were women and 5 were men; all white. In none of the cases were skin lesions observed at the time of admission. Consequently the diagnoses were all made subsequently to admission. Four of the cases were admitted since Jan. 1, 1912, 4 in 1911, 2 in 1910, 2 in 1909, and the remaining 20 cases have been in the hospital for periods varying from 4 years to over 25 years. The longest residence in the hospital of any one of the cases, a case in which the disease appeared during the past summer, was 29 years.

In preparing this account of pellagra in Rhode Island an inquiry was started in order to ascertain if any evidence was obtainable as to whether any cases, unrecognized at the time, had ever existed in the State Hospital for the Insane previous to the appearance of our cases in 1910. Upon this point the following information has been gained. Dr. George E. Simpson, who has been connected with this hospital since 1905, states that a female patient in his service, who had been a resident of the hospital for five years, in the summer of 1908 developed skin lesions upon the hands. She passed rapidly into a cachectic state with diarrhea and died in a short time. Dr. Simpson now states that in the light of present information gained in observing our recent cases of pellagra, he has no hesitation in expressing his belief that this case was one of pellagra. He further states that he has a distinct recollection of seeing here a few other cases in the years between 1905 and 1910, probably as many as six at least, who presented the same picture as our recent cases now recognized as pellagrins. The skin lesions at the time caused considerable discussion among the members of the medical staff. While the lesions were looked upon as sunburns, yet even then that explanation did not seem satisfying. As pellagra

was not known to have existed in Rhode Island that disease was not thought of.

In response to a communication which I addressed to Dr. Harry W. Kimball of Providence, Surgeon to the Department of the Skin, at the Rhode Island Hospital, I received the following reply which, with his kind permission, I insert here:—

“Dear Doctor Harrington:—

“In reply to your letter of 20th September, I would say that during my term of service as Intern at the R. I. State Institutions in 1891 and '92, I recall several cases in the Insane Hospital, that in the light of my present knowledge of pellagra, were undoubtedly cases of pellagra.

“Every Spring we would have a number of patients who were, as we then supposed, especially susceptible to sunburn, their hands, wrists and faces becoming inflamed, with usually more or less gastrointestinal disturbance; the type of sunburn being different from that which other patients, exposed to the sun under the same condition, presented.

“This we explained on the theory that they presented a peculiar tropho-neurotic susceptibility, thus causing a peculiar type of sunburn; the real fact being we were ignorant of the true nature of their disease.

“However, since seeing pellagra, I immediately recognized the disease that twenty one years ago I called tropho-neurotic sunburn, as pellagra. The number of patients with this condition, of course, I cannot recall, but there were several.

“I have had one case of pellagra on my service at the R. I. Hospital,—Dermatological Out-Patient Department,—and several suspected cases who failed to come back to the clinic.

“I am inclined to think that there are mild cases in Rhode Island that are not recognized or reported.

“Sincerely yours,

“Harry W. Kimball.”

“26th September, 1912,

“276 Benefit Street.

From these data we have, I believe, unquestionable evidence that pellagra has existed among the patients at the State Hospital for the Insane as far back at least as 1891. The evidence seems to lead to the conclusion that for the years from 1891 to 1910 there were occasional cases of the disease, while from 1910 to the present date we have had an approach, at least, to an epidemic of pellagra.

I will next consider Pellagra in Relation to Other State Institutions at Howard. Dr. Henry A. Jones, the resident physician of the State Almshouse, State Workhouse and House of Correction, has observed five cases of pellagra in inmates of these institutions, four being males and one a female. I am indebted to Dr. Jones for the privilege of studying the records of his cases and also for the opportunity of seeing some of them with him. In the summer of 1910 Dr. Jones believed that he had a case of pellagra under his care. His diagnosis was confirmed by

Dr. Gardner T. Swarts. This patient died of the disease July 11, 1910. This is the first case of which we have any record in Rhode Island, in which the disease pellagra was recognized as such, at the time, and it is the first instance in our State in which pellagra was entered as the cause of death. Of the remaining 4 cases, who came under the care of Dr. Jones, 3 have subsequently died. Dr. Jones, therefore, up to the present date, Oct. 1, 1912, records 5 cases with 4 deaths.

Finally, I will consider Pellagra in Rhode Island in Relation to the Community at Large. The first consideration under this inquiry was as to whether any of the cases of pellagra seen at the State institutions named above appeared to have the disease when admitted. Of the 32 cases seen at the State Hospital for the Insane since the year 1910, there was not a single case in which the skin lesions were present when the patient was admitted and no evidence could be gathered to indicate that any one of these cases had at any previous time exhibited the skin lesions. Twenty-nine of these cases had been in the hospital for periods varying from 5 months to over 25 years before the symptoms of pellagra were observed in them.

As a matter of record I will cite certain facts in relation to the remaining 3 of our 32 cases:

C. B. admitted May 10, 1912, showed the skin lesions on July 12th following. Mental symptoms were said to have appeared one week before admission. This patient has become demented quite rapidly and has also developed well marked neurological symptoms.

L. B. admitted March 18, 1911. Mental symptoms preceded admission by one month. On admission patient exhibited depression, restlessness and confusion. Diarrhoea followed two weeks after admission. Skin lesions appeared six weeks after admission. A second appearance of skin lesions appeared eight months after admission. The skin lesions this time were bullous and dark brownish-red. She then had convulsions, choreiform movements and died, death occurring nine months after admission and ten months after the beginning of mental symptoms.

C. M. admitted July 20, 1912, showed typical skin lesions eleven days later.

In looking back over the case of patient L. B., the short onset of the mental symptoms previous to admission, the diarrhea following two weeks after admission, the appearance of skin lesions in six weeks, their recurrence, the neurological symptoms and death from the disease: all have the appearance of belonging, from the first, to the disease pellagra. If so, she came from the community to the hospital bearing the disease.

There is room for suspicion that C. M., who showed the skin lesions eleven days after admission, had the disease when he entered the hospital for the reason that so short time

elapsed between admission and the appearance of the skin lesions. His psychosis, however, appeared to be an alcoholic one, so that no connection can be traced between the mental symptoms and pellagra.

In C. B. the skin lesions appeared eight weeks after admission. We have diagnosed this case mentally as general paralysis.

We shall never know the incubation period of pellagra until we learn its cause; consequently, while the facts in these three cases may make us strongly suspicious that they were pellagrins when they entered the hospital, that seems as far as we can go at present. Two of Dr. Jones' cases, however, afford positive evidence that they were the victims of the disease before their admission to the State Almshouse. Both were residents of Rhode Island and had not previously been at any time at any one of the State institutions. One of the cases gave a clear history of the onset of the disease, with skin lesions, and other concomitants of the affection, for a period of five months previous to admission. This case terminated fatally. The second of these two cases entered the State Almshouse, coming directly from the Rhode Island Hospital, from the service of Dr. Gardner T. Swarts, where the diagnosis of pellagra had already been made. This case also terminated fatally.

I am also permitted to refer to another case diagnosed as pellagra that was admitted to the Rhode Island Hospital. M. B., a woman, age 55, a resident of Providence, also a patient in the service of Dr. Swarts.

I was invited recently by Dr. Jones to see a young woman whom a physician had brought to him for consultation, being suspicious that she was a pellagrin. This patient was 25 years of age and had resided in the Pawtuxet Valley for six years, coming there from Canada. Skin lesions had first appeared two years ago and were typical of the chronic branny variety. Of late the general health was beginning to be markedly impaired and she was evidently suffering appreciably from the toxic effects of the disease.

From these four cases and the additional case mentioned by Dr. Kimball as having been seen in the Out-Patients' Department at the Rhode Island Hospital, I feel that there is positive evidence that pellagra is existent in the community at large in the State of Rhode Island, to some extent at least.

The following is a summary of the above:—

First. Pellagra has existed at the State Hospital for the Insane at Howard, R. I., at least since 1891.

Second. Taking all the cases since the summer of 1910, of all the State Institutions at Howard of which we have definite record, the total number is 37 with 16 deaths, or a mortality of 40.5%.

Third. Pellagra is not confined to the locality of the State Institutions at Howard, but it also exists in the community.