
THE NAURU EPIDEMIC

Quite unique in the history of leprosy is that of the comparatively recent infection of the island of Nauru, in the Central Pacific. This island, once a German possession but now mandated by Australia, is so tiny that on ordinary maps it appears as a mere spot just below the equator at about 167° East longitude, in the region of the Gilbert Islands. Its population, totalling only about 2,500 persons,

of whom nearly one-half are non-native, is so well isolated from the rest of the world that leprosy was unknown there until twenty years or so ago. There were only four known cases in 1920, and only one of them survived a devastating visitation of influenza that occurred in that year, but the disease appeared thereafter in such degree that, it is stated, there were more than one hundred cases two years later, and in 1924 nearly thirty per cent of the native population was clinically leprosy. The steps that were taken to meet the remarkable situation that thus arose and the results that are being obtained are discussed in two articles in this number of the *JOURNAL*, one a condensed reprinting of a report by G. W. Bray for the period through 1928, the other a supplementary report by Dr. Alan Grant, the present Government Medical Officer.

In this connection there come to mind certain other instances of infection of isolated insular areas in fairly recent times. The greatest of these, of course, is that of the Hawaiian Islands, which until about the middle of the last century is supposed to have been free of the disease. Its importation there was ascribed to Chinese immigrants, who, it may be added, are credited with this rôle in other cases. Another instance, also of some consequence but much less well known, is that of the Loyalty Islands where, it is understood, it was introduced about a quarter century after the Hawaiian infection is generally supposed to have happened. Little has been heard of this region of late years, though it would doubtless be of value if someone of historical inclination were to analyse past records and reports of the place and examine the present cases there to ascertain if possible the course of the epidemic as such, and of the disease itself in the various stages of the epidemic.

A very small, isolated infection, one which occurred at about the same time as that of the Loyalty Islands, is of the Island of Rodrigues, which lies in the Indian Ocean about 15° east of Madagascar (about 64° E. long.). The history of this little outbreak is traced in a recent report¹ that is of considerable interest, especially in contrast with the Nauru reports, though the focus is so small that its history may not be especially instructive as regards the epidemiology of the disease.

Quite otherwise, one may hope, will be the case as regards the Nauru epidemic, which is noteworthy in more than one respect.

¹KIRK, J. BALFOUR AND ANDRÉ J. HERMANN, page 324 of this number of the *JOURNAL*.

That leprosy recognized usually to be so deliberate of spread and apparently spreading deliberately in Nauru previous to 1920, should have become as prevalent as it did within a few years after the occurrence of a disastrous influenza epidemic suggests that the situation is ascribable to a general depletion of vitality and consequent increased susceptibility due to the epidemic,² rather than to a natural non-resistance. But one would hardly expect that factor to be operative indefinitely, and the continued severity of the epidemic is indicated by the fact that nearly fifteen per cent of the native population is under antileprosy treatment today. The situation should afford an exceptional opportunity to inquire into the question of age at time of infection. This has been given a new turn of late by Manalang³ and Chiyuto,⁴ who hold that infection can take place only before the age of three, which is radically different from the usual view, namely, that though young children are especially susceptible to the infection, and the age of puberty is one at which the disease is especially liable to appear, nevertheless infection after the age of childhood can and does occur. It seems difficult to reconcile the facts of the Nauru outbreak with the hypothesis of absolute adult resistance, but an analysis of the data with that question in mind should be well worth while.

A question of perennial interest is that of type of the disease in relation to the stage and intensity of the epidemic—there being no little evidence, including the experience of the Loyalty Island infection, that it is at first predominantly cutaneous and that cases of the neural type only become conspicuous later on. The Nauru reports appear to be overwhelmingly against this, for Bray stated that about 90 per cent of the cases had been maculo-anesthetic, and Grant says that of those in segregation (i.e., bacteriologically positive) 68 per cent are macular, and only 32 per cent nodular or

² MOLESWORTH, E. H. The influence of natural selection on the incidence of leprosy. *Internat. Jour. Lep.* 1 (1933) 265.

³ MANALANG, C. Transmission of leprosy. I. *Mo. Bull. Philippine Health Serv.* 11 (1931) Dec.

Transmission of leprosy. II. Evidence of transmission in infancy, or early childhood. *Mo. Bull. Philippine Health Serv.* 12 (1932) 363.

Leprosy; etiology, transmission and the causes of slow progress and its prevention. *Mo. Bull. Philippine Health Serv.* 12 (1932) 378.

Significance of leprolin reaction in the natural experimental transmission of leprosy. *Mo. Bull. Philippine Health Serv.* 12 (1932) 308.

⁴ CHIYUTO, S. Leprolin test. *Mo. Bull. Philippine Health Serv.* 12 (1932) 300.

mixed. This is difficult to understand, but the question is of so much interest that one could hope for a re-examination of the matter on the basis of the criteria of classification adopted by the recent Manila conference, with due consideration of the tuberculoid variety of the disease.⁵

The activity and determination shown by the authorities at Nauru in the fight against the epidemic must arouse admiration even on the part of those who do not believe in isolation of active leprosy. The circumstances that permit such intensive work, which includes periodical examination of every person, must arouse the envy of others engaged in antileprosy work who cannot hope to apply such intensive measures. The list of measures mentioned by Dr. Bray in connection with the effort to find the bacilli signals the amenability of the patients as well as the assiduity of the examiners. The results that will be obtained ultimately will be watched with closest attention by those of all beliefs concerning leprosy control.

⁵ WADE, H. W. Tuberculoid leprosy and its classification. To appear in Trans. IX Congress, F.E.A.T.M., Nanking, 1934; also, Classification of tuberculoid leprosy. *Internat. Jour. Lep.* 3 (1935) in press.