LEPROSY IN WESTERN AUSTRALIA[1]

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In two years of duty as Medical Officer, to inquire into the prevalence of sickness and disease among the native population of the state, it has been necessary to travel extensively, from the Eastern Goldfields in the south to the extreme northern parts. In consequence, I have come in contact with natives in all stages of civilization, and in all degrees of sickness and health. For the most part travel has been by motor vehicle, but in order to reach the more isolated parts I have used, as modes of transport, schooner, horse and pack mule, launch and airplane as the occasion demanded. In total, about thirty thousand miles have been travelled.

Among numerous other tours, one was along the northern coastline north of Broome by schooner, where I stopped at various islands inhabited by natives, and bays and inlets as far as the Drysdale River. Another was to the Eastern Goldfields and eastward as far as Karonie, thence to Laverton, Leonora, Wiluna and Meekatharra, examinations being made in these territories with deviations from the main route where natives were known to congregate. This tour was followed by a northern inland one, where examinations were made at isolated points on the outermost rabbit-proof fence which to the east marks the limit of white inhabitation and to which natives from the Canning Stock Route and the desert areas gravitate. On one tour the border of the Northern Territory was followed, and at times it was crossed for the purpose of conducting examinations, for in those parts the natives of Western Australia and the Territory intermingle freely. Here the Ord River—a great native highway—was followed and the tour was continued southward toward the central desert country, until Billiluna on the Canning Stock Route was reached. Fortunately a "kill" was on there and contact was made with natives fresh from the desert.

[1] This article is based on the author's report in the Annual Report of the Commissioner of Native Affairs for the year ended June 30th, 1937, published in Perth, 1938.

In tours from the metropolitan areas to the Kimberleys and back different routes were chosen where practicable, in order to insure that that vast area of the state between Perth and Broome should be investigated in a lateral as well as in a longitudinal direction and, where possible, also diagonally. Substantially this applies also to the Kimberleys. Particular attention was paid to those isolated parts where hitherto a medical man had never been, and where up to the present very little has been known, from first hand knowledge, of the health of the native inhabitants.

In total, 5,932 medical examinations have been made since the inception of this survey (see Table 1). The Kimberleys lead in numbers because there are more natives there than elsewhere, and because up to the present this area has claimed most attention in view of the necessity for investigating the leprosy position as early as possible. Naturally, not every native in every district visited has been examined. Suspicion and prejudices have had to be broken down among the less civilized tribes, and fear of the unknown in the shape of a medical examination and its possible consequences has had to be dissipated. It follows that it has not always been easy to get natives to submit to examination, and even the more enlightened among them do not always agree that a medical examination is to their ultimate benefit. Having regard to all the vagaries of the aboriginal character, I suppose it is only natural that a certain amount of timidity and nervous resistance to anything not previously experienced should be expected. However, this happens less often than may be supposed—much less often now than heretofore—and there is only a modicum of truth in the statement which has been freely made, that natives will "go bush" when an attempt is made to inspect them medically. Observation and interpretation of their moods, and knowledge of how to deal with variations of their temperament from our own standards of behavior, has generally resulted in an amicable understanding between the examiner and the subjects. It is to be said that the establishment of new native hospitals and clinics in the north has helped to foster confidence in medical inspections, and the native is beginning to realize that the white man's methods and medicines are better than the somewhat nebulous quackery of the tribal medicine man.

Before discussing the ailments which experience has led me to believe common among our natives, it is to be said that

I have so often had to dispel rumors of sickness here and of sickness there that the question of the reasons for these exaggerations arises. Certainly I have found no evidence of any vast amount of sickness and disease, and my conviction is that our native race is, generally speaking, a reasonably healthy one. This conclusion is based on personal observation of the comparatively low incidence of hereditary and acquired disease, and an estimation of the average physique of the people concerned. The maintenance of health in certain parts of the state, upon what according to our modern standards is an adverse diet for a human being, indicates an inherently sound body. Physique differs widely in different parts of the state, reaching its highest standard in the far north and its lowest in the southern parts. Probably a poor physique has often been mistaken by the casual observer for an organically diseased body—what has been believed to be a problem of disease has been one of nutrition. Possibly, too, an unprepossessing appearance has something to do with the matter, but often when ill-fitting, ragged clothing is removed a well developed frame is revealed.

The principal disease conditions found in the examinations are shown in Table 1. Minor complaints, such as colds, etc., have not been included. The figures show that active sickness was found in 7 percent of persons examined. In the Kimberley and North-Western divisions, where the numbers of examinations made are large enough to permit drawing a reliable reference, the figures are 6.4 and 8.0 percent, respectively. It is, *inter alia*, upon these figures that I base my assertion that our native race is a reasonably healthy one.

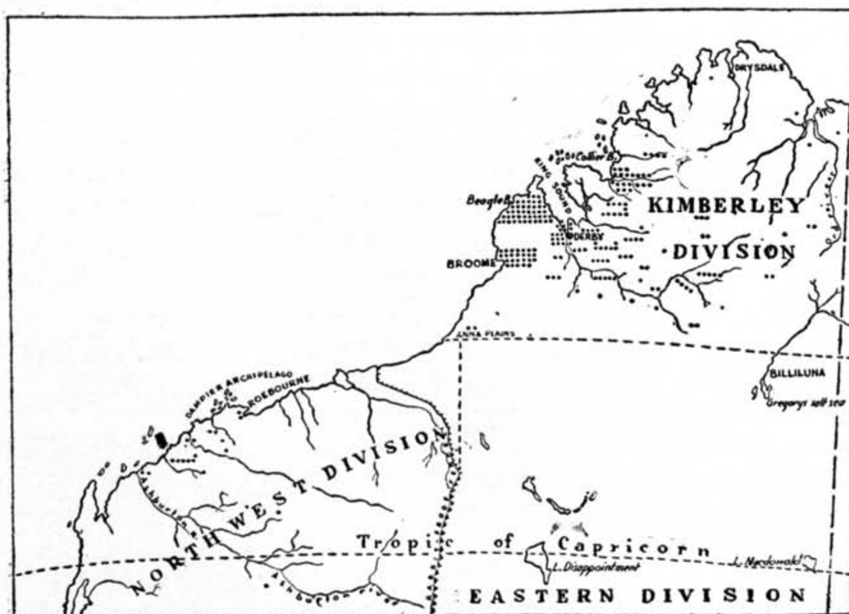
TABLE 1. *Number of examinations made and the number of cases of the principal conditions found.*

Division of the State	Number of examinations	Leprosy	Veneral diseases	Blindness	Other complaints
Kimberley	4,001	42	145	51	69
North-Western	1,690	2	55	10	68
Eastern	197	—	14	—	9
South-Western	44	—	—	—	—
TOTALS	5,932	44	214	61	146

I think that it must be definitely accepted that leprosy was introduced into this country by the indentured labor of the pearling industry, for it is significant that the disease has made its appearance in those districts where the industry has been

carried on most extensively. Moreover, it is fairly common in all Asiatic countries from which the crews have been drawn.

A study of the history of this disease shows that it is unknown among the native population south of the Ashburton district, and that by far its greatest incidence is in the Kimberley Division. Careful inspection of the Port Hedland and Pilbara districts has failed to disclose any sign of the disease, nor have any authentic cases ever been discovered in this part of the North-Western Division. In fact we may say that between Roebourne and the Anna Plains no focus of infection exists. It was in 1909 that the first authentic native leper was found in the Ashburton district, and to house this patient a leprosarium in the form of a small hut was built at Cossack. Sporadic cases continued to make their appearance year by year, and the accommodation at Cossack was gradually enlarged for their reception as well as for cases which began to arrive some years later from the Derby and Broome areas (see Text-fig. 1).



TEXT-FIG. 1. Map of the Northern part of Western Australia showing the location of leprosy cases.

In view of the low incidence of the disease in the Ashburton-Roebourne areas (a total of 22 between 1909 and 1937), and the decision to send all native lepers in this state to the

Darwin lazaret, the Cossack institution was finally closed in 1931. Since that date the incidence of leprosy in the north-west has been at a minimum, and in the light of recent inspections in these parts it is logical to assume that the foci of infection here have very nearly burnt themselves out. The problem of leprosy is therefore for all practical purposes confined to the Kimberleys. Careful supervision of, and, where practicable, absolute prohibition of, the southern migration of northern natives into "clean" parts will tend to delimit the disease and will enhance the prospect of ultimately stamping it out.

As far as can be gathered from available records it was in 1908 that the first two cases in the Kimberleys made their appearance at Derby, but the patients died soon after notification and there are no records to show that they were proved bacteriologically. We then move on to 1921, when four cases were brought to light at Derby and were transferred to the Cossack lazaret. A scrutiny of the past histories of these cases indicated that they had frequently been to Beagle Bay, and at least one of them developed the manifestations of the disease in that locality. The earliest Broome cases also appear to have been natives from Beagle Bay. From this time onwards lepers continued to show up in small numbers and were sent for a while to Cossack and subsequently to Darwin. From 1928 onwards they were coming from further afield than the coastal regions.

I have plotted on a map as accurately as possible the localities from which all cases have been drawn (Text-fig. 1). Beagle Bay primarily, and Broome and Derby, are the original foci of infection, and the disease has been discovered along the Kimberley coastline where it is known that pearling boats put in for water and where their crews would come in contact with natives. Once established in these parts, the plottings indicate, leprosy gradually spread along the main native highways, namely, the larger rivers; hence we see cases all along Fitzroy and Lennard Rivers and Walcott Inlet and to a lesser extent along the Ord River. The disease is much more prevalent in the western than in the eastern Kimberleys; in fact only fifteen cases have come from this latter region and even some of these are from the Fitzroy basin and must be regarded as an overflow from the western Kimberleys and from the original coastal focus. I believe that the very few cases found on the Ord River—five in number—are an overflow from the Northern Territory, and that

Wyndham has never been a focus of infection. In 1935, as the result of. my coastal trip northwards from Broome, lepers were discovered as far north as Kunmunya Mission, i.e., about 150 miles north of Derby. No more were seen during the trip around to Drysdale River, near Wyndham. Recently I went over the Leopold Ranges north of the Lennard River and found only three cases, and previously only three had been reported from there. My recent (1937) visit to Walcott Inlet brought to light five more in that region. This would seem to suggest that the disease has not been sufficiently long established in this part of the state to develop a cross-country spread, and that it is really confined to the coastal fringe for a limited distance and to the main river country above mentioned. Were it not a disease of low infectivity I am afraid that there would have been a far greater spread.

TABLE 2. *Leprosy in the Kimberleys.*

Year	West Kimberley	East Kimberley
1908	2	—
1921	4	—
1922	2	—
1923	1	—
1924	2	—
1925	6	—
1926	3	—
1927	3	—
1928	2	1
1929	7	—
1930	—	—
1931	5	—
1932	7	—
1933	47 [35]	1
1934	41 [22]	5 [2]
1935	58 [40]	1
1936	39 [31]	3
1937	19	2

Table 2 has been prepared from records available to show the incidence of cases notified over the years for the Kimberley Division. In 1933 to 1936 a phenomenal increase seems to have occurred. In my opinion these numbers do not represent the true incidence in these years, for the figures are taken from records of notifications of admissions to the old native hospital in Derby. Some were discharged for want of bacteriological confirmation, some absconded and some were suspicious cases dis-

charged on parole that have shown no signs of leprosy since. It is somewhat difficult to say which is which, and I think if these figures are halved something like the true incidence will be obtained. In 1936 the numbers were swelled by the admission to the new leprosarium at the end of the year of 16 cases from Beagle Bay which had been accumulating in 1935-36. In brackets are the figures for these years which I believe to more nearly approach the true incidence.

The situation, therefore, while serious enough to contemplate, is not in my opinion as desperate as has been suggested, and I believe it is now well under control. There is no doubt that cases of leprosy will continue to crop up for some time to come, but they will be found, I think, in gradually decreasing numbers. Nevertheless, there should not be any relaxation of vigilance in the inspection of those parts from which in the past the great majority of cases have been drawn.