LEPROSY IN AUSTRALIA AND ITS DEPENDENCIES[1]

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The matter of leprosy in Australia was brought into prominence at the fifth session of the Federal Health Council in 1931. The subject was introduced by the Director-General of Health (Dr. J. H. L. Cumpston, C.M.G.), who, *inter alia*, stated:

> It would be well for this Council to recognize that the Commonwealth presents a unique opportunity for the identification of various factors associated with the spread of leprosy, but advantage can only be taken of this opportunity if a close study is made of each case as it is reported, and throughout its existence. This means close investigation at the first appearance of any case and very close co-operation between all the States concerned as to recording progress of cases, examination of household contacts, and supervision of cases after discharge.

At the same conference, in reviewing the position in respect to tropical medicine and hygiene in Australia, the present writer, then Director of the Division of Tropical Hygiene, stated that leprosy: "... represents, perhaps, the most pressing problem of the moment, and one which offers the readiest hope of control."

The Council, after considering the matter, passed the following resolution:

> That the Director of the Division of Tropical Hygiene draft a common form of clinical record and a common scheme of epidemiological record for notified cases of leprosy and for contacts; and that all States enter the required information on the form and forward it to the Director of the Division of Tropical Hygiene, on a confidential basis where necessary, for the compilation of a report on the position from time to time as information accumulates.

At the outset, therefore, the position of the Commonwealth Department of Health was clearly defined as limited to record-keeping.

The incidence of leprosy in Australia and its dependencies was considered at that time to be marked amongst both white and colored persons in Queensland; marked amongst colored persons in the Northern Territory; slight and of focal distribution in Western Australia; minimal in New South Wales; and non-existent in Victoria, South Australia, and Tasmania.

[1]This article, in somewhat extended form, was presented at the Seventh Session of the Federal Health Council of Australia, held at Canberra, F.C.T., in March, 1934, and was included as an appendix in the report of that meeting.

With regard to the Territory of Papua, information is meager. The disease is known to exist, but there has been no adequate determination as to its extent.

In the Mandated Territory of New Guinea, a small leper asylum was established off Madang, northeastern New Guinea, about the year 1925, for some forty lepers from a few neighboring foci around the mouth of the Sepik River. Leprosy was also recorded from several other localities, of which the most definitely suspected was the island of New Hanover, north of Kavieng. At Linding, on that island, many lepers were subsequently observed, and the numbers recorded and bacteriologically confirmed in the Mandated Territory are now considerable (approximately 500). It appears likely that, when the problem is adequately surveyed, it will be found to represent as serious a condition as that found in Fiji. First at Limellon, and now at Anelaua, there has grown up an establishment that will become the central leper establishment of North Melanesia, as Makogai in Fiji is for South Melanesia.

Leprosy is also recorded in the British Solomon Islands Protectorate, where it is regarded as "increasing," this being probably an expression of the fact that the more intensive the search the greater the number of cases detected. In New Caledonia and the Loyalty Islands the problem is recognized to be the greatest one of public health among both white and colored persons.

Australia, therefore, is situated in relation to large native foci of leprosy; and is itself infected with the disease to a mild extent, which corresponds very roughly with the degree of prevalence of colored persons in the population. Where the association with natives has been longest established and still continues (Queensland), the distribution of leprosy among white persons is most marked. In the states which have a minimal native population (Victoria, South Australia, Tasmania), the disease has disappeared as an indigenous problem, if it ever existed. An occasional imported case is discovered in New South Wales; there is a more marked incidence in Queensland; and a most marked one among the aboriginals in the Northern Territory and North Westralia. In the last two localities, however, the figures do not indicate any immediate increase, but rather an identification of cases formerly overlooked.

Book form for record.—With regard to the resolution passed by the Federal Health Council that a common form of clinical record and a common scheme of epidemiological record for notified cases of leprosy and for contacts be drafted and used by all states, a book

form combining all required data was prepared, approved, and printed. Copies of it were made available as required, but apparently in no instance were they utilized. From time to time certain notifications of lepers detected have been received from Queensland, New South Wales, and Western Australia, but no particular information has accompanied these reports.

Surveys.—In Queensland I was enabled to examine the cases at Peel Island. It was also arranged that an amount of £200 should be made available to cover the cost of examining contacts among the natives in Queensland. Some 350 persons were examined and fifteen suspicious cases were detected, of which several have subsequently been admitted to Peel Island. At Sydney the 17 patients at the North Shore Hospital were examined. Records of cases in New South Wales are published each year in the report of the Director-General of Public Health for that state; the latest figures show 19 cases, 16 male and 3 female.

Provisions were also made at the Commonwealth Health Laboratory, Rockhampton, for the investigation of certain factors in the epidemiology of leprosy from a comparison of the effects of various diets, starvation, and other conditions affecting health, upon rats affected with rat leprosy, and for comparative studies of the bacilli of rat leprosy and human leprosy. The preliminary results of this work were published (1). Some further records were compiled for publication, but these had not reached completion when financial stringency prohibited any further research work or investigation by survey. However, advantage has been taken of such opportunities as have arisen to examine collections of natives, and lepers have occasionally been found among these.

Suggested methods of control.—It was hoped that circumstances would permit the testing of the method of investigation and prophylaxis advocated by Sir Leonard Rogers (2), namely:

(*a*) The household and other close contacts of all known cases of leprosy and of each newly discovered case should be examined from head to foot for the earliest signs of the disease and this examination should be repeated at least every six months for five years—thus detecting most cases before the infective stage.

(*b*) The segregation system in Australia should not be abolished at once but modified so as to insure that patients in the early stages come forward for treatment instead of hiding themselves until they are far less amenable to treatment and have had time to infect others.

(*c*) All suspected persons, bacteriologically negative, should be treated as outpatients; infected persons should be isolated, but with skilled treatment.

Provision had been made in the book form referred to above for the examination of households and other close contacts of known

cases of leprosy, but certain difficulties were immediately obvious. At the time that a case of leprosy is recorded it is not usually difficult to examine all members of the household, but as a rule the situation becomes materially different within six months. The Australian population is not, like so many others, fixed by tradition or by economic necessity; it is essentially migratory. Where a case of leprosy has been recorded, relatives and contacts often leave the neighborhood and become untraceable. Furthermore, when the relatives do not migrate they often refuse subsequent examination, even when approached with the greatest tact. No provision is made in existing regulations for their examination, except on a magistrate's order or when there is a suspicion of leprosy, which would need to be substantiated; and so far as it has been tested by me ministerial and legislative opinion is against the provision of any such facilities. It is, therefore, difficult to the point of impossibility for a member of a commonwealth department, unprovided with definite authority, to examine such contacts every six months for five years.

Among leper contacts one certainly finds operating that tendency to conceal the disease which Molesworth and Tebbutt discussed (3) when they requested a review of the present "almost penal regulations," claiming that:

> The temptation for patients and relatives to conceal the disease under existing regulations for incarceration of lepers may expose the immediate associates of the patient to infection for a much longer period than would be the case if the patient could be treated without internment, as he can be and is treated with success in countries where segregation is not compulsory. . . . The existing system of rigorous isolation brings about the anomaly of medical men refusing to accept a diagnosis of leprosy on mere physical signs without demonstration of bacilli; also it sometimes results in the flight of the patient at first suspicion, without any treatment or adequate precautions against spread of infection.

Cook, in 1925, discussed the factors which contributed to the presence in the community of sources of infection of which there was no official cognizance, and laid them down under the following heads:

> (1) *Departmental.*—(i) Incomplete inquiry into the possible origin of infection in each new case detected. (ii) Absence of a regular system of surveillance and re-examination of contacts. (iii) Premature discharge and acquiescence in the return of the subject to the endemic area from which he came.
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> (2) *Executive.*—(i) Incomplete knowledge of the symptomatology on the part of medical officers. (ii) Failure of medical officers to notify, either under the conviction that the disease is not sufficiently contagious to warrant such drastic prophylaxis, or out of commiseration for the patient.
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> (3) *Individual.*—(i) Fear on the part of the sufferers of financial loss to themselves or to their connexions, whether directly by removal of the breadwinner, or

indirectly by the ruin of business good will, leads to the concealment of infection where it is suspected. (ii) The dread of separation from kith and kin and the prospect of awaiting death in exile amongst the dying, doubtless influences some in concealing the nature of infection.

When the question of the aboriginal was investigated, the problem was seen to be infinitely complicated. The native habit of changing his name repeatedly further disguises relationships already masked by the haphazard use of the terms "brother," "father," "cousin," "uncle," etc. His complete dread of the white man's medicines, surgery and hospitals renders it utterly impossible to contemplate any system other than segregation for him.

It is frequently suggested that if the benefits of cure are presented adequately to him, the native will appreciate them and will respond to requests for his attendance for treatment. This, insofar as the Australian aboriginal is concerned, is utterly untrue. His whole outlook and conduct are determined by a blind and unreasoning fear of anything in the way of medicine outside his experience, and as a consequence he will never appear for treatment, or be surrendered by his relatives, unless he is unaware that he is sick or is *in extremis*. On the other hand, in every large aboriginal settlement where lepers have been looked for intensively, at least one case has been found at the outset; since then other cases have been found with what appears to be undue frequency, considering previous figures, and there are presumably other lepers now at liberty for whom treatment is impossible. This is the fact in North Queensland, at any rate, and the same is known to be the case in the Northern Territory and in the northwest part of Western Australia.

Therefore, with regard to the second suggestion of Sir Leonard Rogers, that the segregation system in Australia should be modified so as to insure that patients in the early stages will come forward for treatment, and to the third suggestion that all suspected persons bacteriologically negative should be treated as outpatients, preliminary investigations indicate that no present modification is possible in respect to colored persons.

It is to be noted that only such cases as are bacteriologically positive are admitted to leprosaria at any time. Indeed, persons clinically positive for leprosy but bacteriologically negative are regarded in Queensland (and probably in other states) as nonleprous, though efforts have been made by persuasion to encourage them and their contacts to use antileprosy medication for their own protection. It is often quite difficult to obtain a positive bacteriological finding in a

patient unless repeated smears or scrapings are taken with skill and care from particular areas, and it seems that where the routine test is a positive smear from eyebrow, nose, or ear area, and where this alone is acceptable, there must be persons in the community who are both clinically and bacteriologically positive but who are nevertheless not in receipt of any treatment. I believe from experience that this is so.

Treatment.—There are many contradictory findings both in respect of diagnosis and treatment which introduce an element of doubt into the future picture.[2] With regard to treatment, it is noted everywhere that proper living conditions are more and more accepted as of value, while the curative power of drugs and injections is less emphasized. "Skilled treatment" is a term that has an increasingly complex implication. Without training, the ordinary medical practitioner simply cannot see leprous lesions that are obvious to an experienced man. As for paroled cases returned to their original habitat and living conditions, 90 percent of relapses are recorded in some places. This same fact of unchanged living conditions is already militating markedly against "dispensary" treatment, and the future failure of that line of attack (if, as appears likely, it should fail) will probably be referable to that cause very largely.

In the Northern Territory the leprosarium at Channel Island, where efforts have recently been made to increase the facilities for the control of leprosy in that region, is in the charge of a married nurse whose husband acts as superintendent and male wardsman, and is visited at regular intervals by a doctor. Patients from Western Australia are admitted to this institution. On December 31, 1933, there were 88 persons there, of whom 2 were white. In Queensland, the patients (at Peel Island) generally vary between 55 and 65, nearly half of them whites. A lay nurse attends to such disabilities as are brought to her notice, and recently the state health officer has been undertaking visits of inspection and has introduced more active measures of treatment. In New South Wales, the smallness of the numbers (19) and the association of the leper hospital with the large general institution at Little Bay (the Coast Hospital) make easy much more effective supervision and attention. Several times in Queensland there has been discussed tentatively a proposal to set aside an area as a leprosarium and village community for aboriginals, where not only the bacteriologically positive cases may be segregated and treated,

[2]In the original form of this article there were discussed at this point several reports, then recent, concerning diagnosis by the thick blood drop method and treatment by various current methods.

but where suspects also may be kept in confinement and dealt with more satisfactorily.

Control measures for the future.—As a result of the action of the Federal Health Council of 1931, the position of the Commonwealth department of health at the outset was to act as a recording office. This duty merged insensibly into one of active association with the detection and examination of lepers, and with follow-up work among contacts. The services referable to Commonwealth departments are actively treating leprosy in the Northern Territory, the Territory of Papua, and the Mandated Territory of New Guinea, while in the Mandated Territory of Nauru special attention has been given to a leprosy problem so widespread as to involve a relatively large percentage of the population native to the island.

Though financial stringency handicapped temporarily both the research activities and the efforts to obtain adequate records of all lepers in Australia, the present tendency to return to a more normal condition of affairs and the doubling of the number of known lepers since 1931 (from 80 to 167), seem to indicate that the occasion is opportune for a revival of the proposals then found acceptable to all concerned. From an examination of the suggestions made by Cook as to the factors which render inoperative the present efforts toward prophylaxis of the disease, it would seem that there might well be attempted a more adequate system of control:

(1) A complete inquiry into the possible origin of infection in each new case detected.

(2) A regular system of surveillance and re-examination of contacts at six-monthly intervals for a period of five years.

(3) Careful examination of cases by thoroughly skilled observers, and the recording of the progress of symptoms and the course of the disease throughout the whole of the period of segregation and hospitalization.

(4) Probationary discharge (*a*) on conditions of re-examination, etc., acceptable to the public health authority, and (*b*) to specified areas of residence.

(5) The revision and standardization of treatment throughout all leprosaria in Australia, with particular attention to (*a*) methods of medication, (*b*) environmental circumstances, and (*c*) diet, occupation and entertainment.

(6) Research into local problems of leprosy, human and murine, together with such observations on the comparative results of the application of research findings in other countries as may materially improve methods of treatment, etc.

(7) Distribution of such information as may be desirable to medical practitioners and the general public.

The position in Australia is still that "the Commonwealth presents a unique opportunity for the identification of various factors

associated with the spread of leprosy, but advantage can only be taken of this opportunity if a close study is made of each case as it is reported, and throughout its existence."

At the session of the Federal Health Council of Australia at which the present report in its original was read the following resolution was adopted:

Resolution No. 5. Leprosy.—Each State Health Department will undertake to furnish as complete records as possible of each case which comes under official notice. The Commonwealth Department of Health will assemble and analyse all the information as received.

That the Commonwealth Department of Health arrange for the publication of a series of articles in the daily press and the *Medical Journal of Australia*, in order to inform the public on the question of leprosy.

This Council recommends strongly that in each State in which there is any considerable number of aborigines, a medical officer should be appointed by the State Government, whose duty shall be the medical supervision of the welfare of all aborigines with special reference to leprosy.

In addition to these officers, this Council considers that the immediate urgency and increasing gravity of the leprosy situation demands the appointment by the Commonwealth Government of a medical officer specially devoted to the study of leprosy and other diseases specially affecting aborigines. This officer should be available to travel through the northern portion of the Commonwealth to consult with the State Medical Officers for Aborigines, to collect information and study the epidemiology of leprosy, to conduct research and to distribute information concerning the most recent knowledge concerning, and all recent progress in, the treatment and diagnosis of leprosy.

It is important that each State which has not the necessary powers should provide full legal powers for the periodical examination and any necessary detention of persons: (a) suspected of being infected with leprosy; (b) who have been in contact with known cases of leprosy.

It is imperative that any leper discovered in Australia should be placed under conditions permitting of full modern medical treatment and continuous and immediate laboratory facilities, and under the continuous supervision of a medical man with special knowledge of leprosy.

There is not sufficient reason for requiring leprosy stations to be on an island; the disadvantages of such a location are greater than the advantages.

Modern knowledge in respect of leprosy indicates that it is very necessary that, as well as the specific medical treatment of leprosy, lepers should be placed under the best conditions of social life including a healthy environment, sufficient food of good quality and controlled exercise, and such purposive employment in their own interest as is possible.

REFERENCES

(1) Med. Jour. Australia, Dec. 19, 1931.
(2) Med. Jour. Australia, Oct. 1930.
(3) Med. Jour. Australia, Sept. 18, 1936.