

LEPROSY AND ITS CONTROL IN SOUTH AFRICA

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According to Impey (1), leprosy probably existed in South Africa before the advent of European colonization, it having been introduced by spread from the north or by visitors in ancient times. Increased communication with the East during the period of colonization of the Cape by the Dutch East India Company, when slaves from Malaya were imported, augmented the number of cases. The northward migration of colonists with their servants, and the inevitable population migrations as a result of wars and of political and economic factors, served to spread the disease throughout the whole of the country.

The first European cases were recorded in 1756—just over a century after the permanent colonization of Southern Africa in 1652. The first effort at large-scale segregation was made in 1817 when there was founded at Hemel-en-Aarde, in the Caledon District of Cape Province, a colony which in 1845 was moved to Robben Island. Increase in the incidence of the disease led to the Leprosy Repression Act of 1884, which authorized the detention of leprosy patients "likely to spread the infection."

At the time of the formation of the Union of South Africa (1909), leprosy control legislation existed in all four provinces, and all known cases were permanently isolated in the several leprosaria. The internment of leprosy cases then became a function of the Department of Interior. In 1923 a Leprosy Board was appointed by the government. They examined 2,501 cases in six institutions and classified 693 of them as noninfective and gave them "probational discharge." In the following year the administration of leprosy was transferred to the Department of Public Health, and a Leprosy Advisory Committee was called into being for the purpose of "investigating leprosy and allied matters and advising the Government."

LEGISLATION

Since 1817 the main feature in the control of leprosy in South Africa has been the compulsory segregation of known cases. The authority for detention of patients at present is based on the following laws:

(1) *Transvaal*.—Ordinance No. 23 of 1904 and regulations made thereunder. This law authorizes detention of persons on the strength of

a confirmed diagnosis of leprosy. There are three amendments of this law. The most important is the constitution of an "Asylums Board" to form a channel through which inmates of mental and leprosy institutions could air grievances and for the purposes of inspecting institutions at monthly intervals.

(2) *Free State*.—Law No. 26 of 1909 is similar to the Transvaal law. There is no leprosy institution in the Free State, and all cases from that province are segregated at Westfort, Pretoria, Transvaal.

(3) *Cape Province*.—The Leprosy Repression Act of 1884 applies. It authorizes segregation of persons suffering from leprosy and "likely to spread such disease." One minor amendment to this act was made in 1894.

(4) *Natal*.—Law No. 16 of 1890, together with amendments made in 1894 and 1895, were never promulgated. Authority for segregation of native cases is contained in Proclamation No. 162 of 1933, which empowers the supreme chief (the Governor General) to order detention of a duly certified leprosy patient in an institution.

Persons other than natives are detained under regulations framed under Law No. 44 of 1901. This law was repealed by Union Act No. 36 of 1919 (Public Health Law), but its regulations with amendments are kept alive by clause 155 of the latter law.

In 1914, Act No. 11 was passed which authorized detention of cases from any one province in any other province. Under the Public Health Act No. 18 of 1919, leprosy in common with other infectious diseases was made notifiable. Government Notice No. 601 of 1931 contains regulations regarding the reporting of cases of leprosy and the behavior of cases and contacts.

ADMISSION OF NEW CASES

Although there is some minor variation of procedure under different laws in the various provinces, the basic pattern is the same. Since leprosy is a notifiable disease (Law No. 18 of 1919) medical men—or lay people—give notification of a discovered case to the magistrate or justice of peace of the area. In the Transvaal, the Free State, and greater part of the Cape Province the magistrate then instructs medical practitioners to report on the case, district surgeons being given preference. Two reports are required for the Transvaal and Free State, but only one for the Cape Province.

On receipt of these reports the magistrate, when satisfied that the person concerned suffers from leprosy, issues an interim reception order which authorizes the removal of the patient to an institution. By arrangement with the secretary for health of the Union and the superintendent of the regional institution, the patient is transported by ambulance or by "infectious disease railway coach," accompanied by a paid escort of the same sex.

Transport is awaited in a place of isolation—a local depot, special accommodation on the premises of the local goal, an isolation hospital, or at home. For an area with a radius of 300 miles from Cape Town, and in Natal, the magistrate sends his report together with one medical report to the deputy chief health officer of the area, and on the strength of the reports and the results of the bacteriological examination the latter decides whether or not the patient should be segregated and makes the necessary transportation arrangements.

On arrival at an institution, a patient is put in an isolation section until seen by a medical officer. If the diagnosis is confirmed he is sent to permanent quarters and the medical officer completes a third (or second) medical certificate. All documents of cases from all provinces are then forwarded to the Union Health Department. If satisfied about the case, the documents are forwarded to the minister of health in the case of Transvaal and the Free State patients. The minister issues a detention order for one year. On further reports from the institution to the minister cases may be detained for further periods of three years. In the case of patients from Cape Province and Natal, the Governor-General-in-Council issues a detention warrant for as long as is deemed necessary, on the strength of the documents forwarded by the Union Health Department.

PRESENT POLICY

All newly discovered cases of leprosy are certified. With the exception of bacteriologically negative and clinically "inactive" cases—especially in Cape Province and Natal—all cases (i.e., those showing either clinically active lesions or found bacteriologically positive) are detained at one or another of the five leprosy institutions maintained by the Union government and administered by the Health Department. These are: The Westfort Institution, Pretoria, Transvaal (1,083 cases); the Bochem Institution, Northern Transvaal (120 cases); the Emjanyana Institution, Transkei, Cape Province (380 cases); the Mkambati Institution, Pondoland, Cape Province (131 cases); and the Amatikulu Institution, Zululand, Natal (355 cases).¹

All patients detained in institutions are regularly visited by the Leprosy Board, which is appointed by the Health Department and which at present consists of a chairman (a health officer

¹ In conformity with the suggestion of the Havana Congress the word "leper" has been dropped from the names of South African leprosy institutions.

with long experience with leprosy) a professor of medicine, a government pathologist and two other medical men of high standing. This board classifies patients into groups with emphasis on the "degree of activity" of each type.

Patients who show no "activity" in lesions and who have been bacteriologically negative (skin and nasal smears) for at least twelve months are given "probational discharge." This period is not rigidly adhered to by the board, and at its discretion suitable cases may be discharged after nine months of detention. In 1948 the average period of detention of the bacteriologically negative cases still present in the Westfort institution, isolated during the period 1916-1948 (182 cases), was 2.7 years. A certain number of cases are given a "provisional probational discharge." They remain at the institutions for a further six months, and are then examined by an interim board and discharged if progress has been satisfactory. The board at its discretion also discharges cases on condition of specified further treatment or bacteriological investigation, after completion of which they are released if results are favorable.

From 15 to over 35 per cent of institution inmates are let out on probation each year. They are then examined at intervals of six months for three years, and at yearly intervals for another three years. These clinical and bacteriological examinations are controlled by the magistrate, who keeps a register of leprosy cases in his district, and are carried out by the regional district surgeon. A recrudesced case is referred back to the institution. If still bacteriologically negative the patient is not recertified, but is admitted for surgical or other treatment only and discharged at the discretion of the institutional superintendent of the institution. If found bacteriologically positive, he is recertified and is then examined by the annual board.

Patients discharged on probation are required to sign an undertaking to keep the magistrate advised of change of address, to submit to medical examination, to burn old clothes and linen, to use a separate bed, to maintain a good standard of personal hygiene and carry out directions of the district surgeon, to avoid work which entails contact with other people, and to avoid populous areas. There is also an undertaking not to prepare or handle food for others and not to work in a shop or to do tailoring or dressmaking. A certificate declaring the patient non-infective or free from leprosy is also supplied. On advice of the board certain patients are sometimes released from these undertakings and given "unconditional" discharge.

Close contacts of newly discovered cases are examined when the patient is first discovered, then in the second year and again in the fifth year thereafter. This examination is made by the district surgeon, and arrangements are made by the magistrate.

In the period 1924 to 1947, no less than 8,822 patients were probationally discharged from leprosy institutions in South Africa, of which 1,568 (18%) have been readmitted for recrudescence. The majority of readmissions are due to clinical reappearance of lesions and for surgical treatment of conditions such as perforating ulcers and necrotic bone. A very small proportion of these cases have positive smears.

Patients are entitled to apply to the Leprosy Board to be considered for "home segregation." Provision for segregation at a place other than an institution is made in the Transvaal Leprosy Laws of 1904. The conditions call for the strict observance of the principle of isolation: separate sleeping facilities, eating utensils, sanitary arrangements, laundry, etc. Circumstances which are taken into consideration by the Board before granting this privilege are the presence of young children at home, the bacteriological and clinical condition of the patient, and his character. In view of nonadherence to the prescribed conditions in the past, very few patients have been let out on home segregation in the last ten years. At the moment only one, a European, is enjoying this privilege.

ORGANIZATION OF THE INSTITUTIONS

The Westfort Institution, Pretoria.—All European, Cape Coloured (Eurafrican) and Asiatic cases discovered in South Africa are detained at this institution. In addition, native cases from the Transvaal (barring the Northern Area), the North-Western Cape Province, and the Free State are also segregated there. On June 30, 1949, there were 56 European patients, 75 Cape Coloureds, 7 Asiatics, and 945 Natives. There were seven noninfected babies in the crèche.

Of the 56 Europeans in the institution, 7 are arrested cases allowed to stay on humanitarian grounds. The Europeans are housed in blocks of semidetached flats, each comprising a bed-sitting room and kitchen. Each patient is entitled to a paid servant drawn from among the native patients. They are given the choice of obtaining cooked meals from the kitchen or drawing rations and doing their own cooking.

The Eurafricans, Asiatics, and Natives are housed in a series of compounds consisting of semidetached rooms or concrete huts.

They are fed from a communal kitchen. A liberal, scientifically balanced diet is given to all, and up to five per cent of food yeast (*Torula utilis*) is added to native porridge as well as a portion to all soups.

There are a 70-bed general hospital and a 46-bed mental hospital. Helplessly crippled cases are housed in specially built chronic sick wards, where a number of arrested cases are also allowed to remain on humanitarian grounds.

All patients wishing to work are given occupation at fixed rates of pay. The institution has its own carpenter shop, smithy, bootmaker shop, laundry, dairy, orchards, produce farm, etc. Facilities for poultry keeping are provided. Ample provisions for recreation in the form of bioscope, concerts, bus tours, sport, reading, etc., are made; and the Europeans (only, at present) have a month's holiday every year at a seaside home. There are four churches in the grounds of the institution, and a large number of charitable societies show an interest in patients.

The staff consists of the medical superintendent and 2 medical officers, with a research medical officer attached from headquarters; also 1 matron, 3 nursing sisters, 2 staff nurses, and 24 nursing assistants, together with a nonmedical staff of 36 Europeans and 110 natives.

All costs are borne by the government. The estimated cost for 1949-1950 is about £125,000. The recreation fund and holiday home are maintained by public subscription and a small donation from government funds.

Other leprosy institutions.—Four other institutions are maintained in strategic areas, so as not to remove patients too far from their homes and to minimize admixture of tribes. The housing and the way of life are adapted to the various native customs, and as far as possible self-government by tribal laws is allowed.

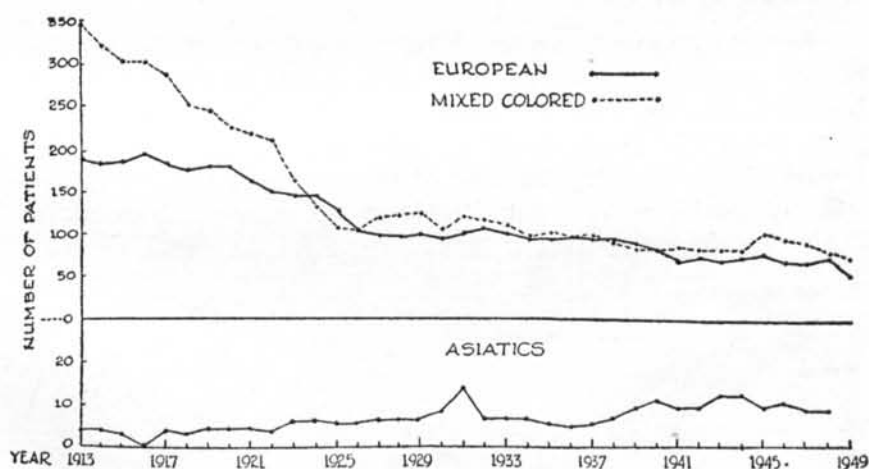
Part-time medical officers (one resident) and permanent nursing staffs look after the patients. The institutions are administered by a lay superintendent and staff. A great deal of agricultural, animal husbandry and other occupational work is done.

In all institutions patients are clothed at government expense. Those who cannot work for pay receive a weekly allowance from a recreation fund to buy "extras." Railway warrants are issued to relatives to enable them to visit the institutions, where they are housed in special visitors' quarters. Each European patient is granted seven free railway tickets per year from anywhere in

the Union; native patients are entitled to four. Where indicated, allowances are paid to dependents of segregated patients. Probationally discharged patients are assessed for percentage disability and an allowance is paid accordingly.

INCIDENCE AND TYPES

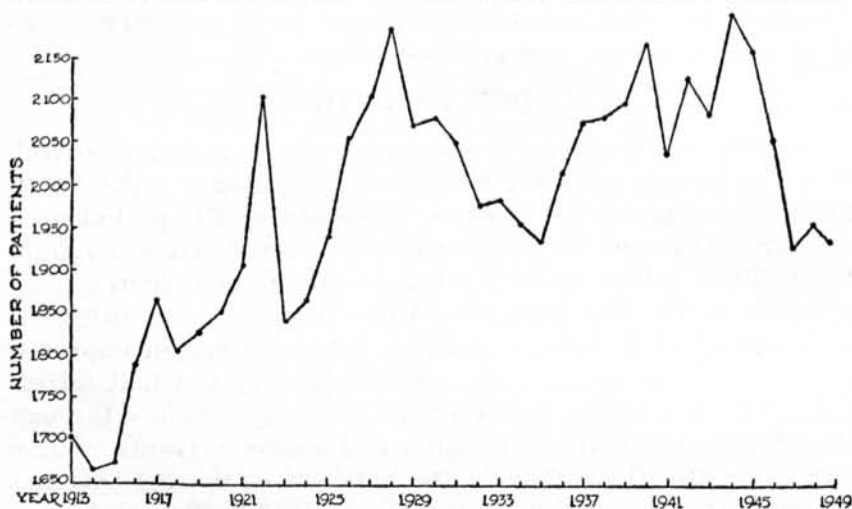
Leprosy in South Africa is reasonably well under control. Over the past 35 years there has been a significant reduction in the numbers of institutionalized European and Cape Coloured patients (Text-fig. 1), the number of European cases falling from 190 in 1913 to 56 at present, and the Cape Coloured cases from 345 to 75. The main reason why there is not an insignificant number of Europeans today is that the effects of improved living standards and segregation are offset by constant association with the native reservoir of the disease, mainly through the relationship between children and native servants. There has been little fluctuation in the numbers of the few Asiatics segregated; in only four years of the 1913-1949 period were there more than 10, and usually they were materially fewer than that.



TEXT-FIG. 1. Numbers of patients in the leprosy institutions of South Africa, 1913-1949. Numbers are as of December 31, for the years 1913-1924; as of June 30, for the years 1925-1949.

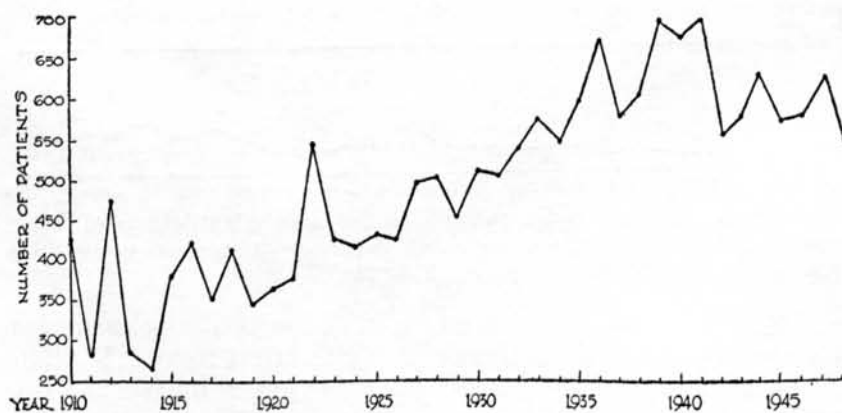
Apart from the sharp drop in 1923 due to the release of a large number of noninfective cases for the first time, it is difficult to account for the fluctuations in the graph illustrating the number of institutionalized native patients (Text-fig. 2). It is probable that the drop shown in the last few years (from the peak of over 2,200 in 1944 to about 1,930 in 1949), will be main-

tained or increased in view of progressive improvement in the health services and the promising results of sulfone treatment.



TEXT-FIG. 2. Numbers of institutionalized native patients, 1913-1949. Numbers are as of December 31, for the years 1913-1924; as of June 30, for the years 1925-1949.

For many years there was a fairly steady rise in the number of new cases admitted each year to institutions, but the figure has remained reasonably stable in the last 12 years, ranging from about 550 to nearly 700. Increase in medical services by means of mission hospitals and district surgeoncies, and the results of health service activities and propaganda, is probably the major factor operating here.



TEXT-FIG. 3. Numbers of certified cases of leprosy in Natives removed to leprosy institutions from 1910 to 1948.

The most noteworthy and encouraging feature of leprosy in South Africa is a significant decrease in the duration of the disease on admission. Mitchell (2), in 1926, gave a figure of $6\frac{1}{2}$ years but stated that it was probably higher. During the past five years the average duration of illness on admission at Westfort has been 2.4 years. This figure is dependent on the statements of the patients, which often do not fit the clinical picture in that the period given is too short. But this was the case with respect to the previous figures, and they are therefore regarded as comparable. The indication is that cases are now being treated at a much earlier stage of the disease than before. The average age on admission has been 32.7 years.

If 480 cases are admitted after an average duration of disease of 2.4 years, it means that in addition to the 1,953 Bantu cases in institutions in June 1949, there are 1,152 new cases unknown to the Health Department. In 1926 Mitchell estimated that there were 2,240 unknown cases. These figures are probably underestimates, but they enable one to arrive at a conservative figure of 3,105 active cases of leprosy in the Bantu. In a population of about 8 millions, that gives an incidence of 0.39 per mille. A further 3,056 cases are under surveillance. If they be added to the estimated number of cases, a total of 6,161 cases is arrived at, or an incidence of 0.77 per mille.

As regards the type of leprosy, an analysis of 511 cases admitted in the two years ending June 1946, shows 30.2 per cent to be of the lepromatous and 69.8 per cent of the neural type. Of 20 Cape Coloured and Asiatic cases admitted in that period only 20 per cent were lepromatous, whereas of 13 European cases no less than 69 per cent were lepromatous. The incidence of primary eye lesions and blindness is much higher in the European than in the Bantu.

REFERENCES

1. IMPEY, S. P. *Prize Essays on Leprosy*. London, New Sydenham Society, 1895, p. 191.
2. MITCHELL, A. J. *Annual Report of Public Health Department of the Union of South Africa*, year ending June, 1926.