

LEPROSY IN BRITISH GUIANA, 1954

DR. G. J. NICHOLAS

Medical Superintendent, Mabaica Hospital

GENERAL INFORMATION

British Guiana, the only British Colony in the South American continent, occupies the north-east corner of the continent, between roughly 1 degree and 9 degrees north, and extends over an area of approximately 83,000 square miles. From the mountain range boundary between British Guiana and the neighbouring countries of Brazil and Venezuela, the land slopes down to the sea, where on the coast-land it is 3 to 4 feet below sea level.

Mainly sub-tropical in climate, the mean temperature ranges from 80 degrees Fahrenheit on the coast-land to 82 degrees Fahrenheit in the interior. Humidity is relatively high, the rainfall averaging 90 inches on the coast to 52 inches in the interior.

The population of the country is estimated to be in the vicinity of 479,000, over 90 per cent of which is to be found on the coastal belt, and is composed racially of East Indians (about 44.1 per cent), people of African descent (about 36.8 per cent), mixed races (12.7 per cent), Portuguese (2.2 per cent), other Europeans (0.6 per cent), Chinese (1.0 per cent), Amerindians (2.5 per cent) and miscellaneous groups (0.1 per cent).

The birth rate (1954) in the country is reported to be 42.6, the crude death rate 12.8, and the infant mortality in the vicinity of about 80. Density figures are not available, the population being centered about the Demerara, and the Corentyne River coast land of Berbice.

HISTORY OF LEPROSY IN BRITISH GUIANA

There is no evidence in any early record of leprosy among the original inhabitants of the country, but rather does all evidence point to the contrary. Hillis mentions the first appearance of leprosy among the Warrau tribe of Amerindians, but only after the institution of a leprosy settlement in the Pomeroon in 1832. In the 1842 census of all Amerindians in the colony, the only cases of leprosy amongst them were confined to the Warrau tribe. Souza-Araujo, in a history of leprosy in Brazil, states that from early records it would seem certain that there were no cases of leprosy among the native inhabitants when this neighbouring state was discovered.

European colonists as a possible source has been discussed by Hillis. He does not think the Portuguese who first arrived here from Madeira in 1841 could have introduced the disease, though Souza-Araujo considers them a possible source in Brazil. Regarding the Dutch settlers, Hillis is quite non-committal, and states "It is not known with any certainty to what extent the disease prevailed under the Dutch who first held the Colony"; in view, however, of the fact that leprosy was still present in Holland in the 16th century at the time of the first Dutch immigrants to this part of the world, Souza-Araujo considers they may have been a possible source. It seems unlikely, though, that European colonists could have introduced more than a few cases only.

However, there is no doubt that leprosy was introduced by African slave labour, at first strictly controlled by isolation on individual plantations, but with colony-wide spread after the emancipation.

More lately, Indian and Chinese immigrants certainly introduced fresh cases, Hillis even quoting the names of the affected immigrants, both Indian and Chinese, as they were taken off immigrant ships in 1841, 1860 and 1861. It seems, however, a debatable point as to how much of the spread of leprosy in the colony was due to withdrawal of strict isolation measures with the emancipation, how much to the wholesale introduction of fresh cases with the immigration from Eastern countries, and how much to early attempts at doubtful effective isolation.

Early plantation isolation could quite easily have been effective. The slaves were all known and censored and under strict control. In 1823, after the emancipation, there was an attempt at segregation in the Pomeroun. Its effectiveness could be judged by the reported spread to the Warrau tribe of Amerindians. There was a further isolation centre at Kaow Island on the Mazaruni River. Its origin is uncertain, but it certainly appears to have been in existence in 1879 when visited by Hillis. It was closed down completely on the transfer of patients to Mahaica, where a settlement and segregation centre was established in 1858 on the site of an old Dutch fort. Hillis' report of conditions as they existed then, and conditions as they exist at the present time, provides an interesting study in contrasts.

INCIDENCE

The figure calculated for over-all incidence in British Guiana is 2.7 per thousand. This is based on known and registered cases and for this reason alone is unreliable. There are many known

cases who are not registered, and many registered cases who are no longer known. Fictitious names and addresses make it difficult to trace old cases, while many referred cases neither report, nor can they be traced later.

Particular or intensive surveys have not, to my knowledge, ever been done, and I have not been able to unearth any report of one. The difficulty in communications, paucity of trained staff and the ease with which the suspect could disappear into the jungle makes the task of providing a reliable survey well-nigh impossible. As suggested by Dr. Wilson Rae of the Colonial Office, who recently visited the Colony, it would perhaps be feasible to survey the populated coast-land only. With the present staff of one doctor, one trained school-nurse, and one technician, this has not as yet been possible.

Presuming our present figures for incidence are no more incorrect than they were prior to 1924, the position is indeed heartening, for figures for prevalence published by a special medical conference on Leprosy in 1924 show an incidence of from 14 per thousand in 1905 to 15.5 per thousand in 1911, with a sharp drop to between 8.7 and 9 in 1920, and further rise to between 10 or 11 per thousand in 1923 and 1924.

General or extensive type surveys, based on the examination of school children, are meticulously done by a trained school nurse and health visitor, all primary schools capable of being reached under existing means of communication and transport being visited once every year. The three counties are done in succession, and the results of the 1954 school survey show 69,902 examinations done, with 22 cases diagnosed, 13 boys and 9 girls, giving a percentage incidence among children examined of 0.03 per cent.

RACIAL DISTRIBUTION

	African	East Indian	Mixed	Portuguese	European	Chinese	Amerindian	Total
Male	299	291	51	29	1	11	1	683
Female	312	200	33	8	1	2	0	576
Total	611	491	104	37	2	13	1	1,259

The absence of leprosy among the Amerindians is noteworthy and has been mentioned by Hillis in the last century, as well as by Frendo in 1924, and in a report of a Departmental Medical Conference on leprosy of the same year. There are, at present,

no registered cases among pure Amerindians, the one case shown above being strictly speaking of mixed blood, and originating from the coast-land.

It has been suggested that this apparent immunity may be an acquired one as a result of an early indigenous endemicity. This is not borne out by the experience of the earlier writers on leprosy, both in this Colony and in other areas of South America; nor by the fact that members of the Warrau tribe, when contact became free in the Pomeroon area in 1832, did actually contract leprosy. In this country at least, separated as they are from the infected coast-land by a barrier of impenetrable virgin forest, and protected in reservations where intimate contact is reduced to a minimum, the absence of leprosy amongst the Amerindians appears to be due more to absence of contact than any other single factor. The Mitsuda reaction as an index of tissue immunity would be of little value, as due to a high susceptibility to tuberculosis, the BCG Campaign in this country was started amongst the Amerindians.

PREDOMINANCE OF TYPE

This is difficult of assessment as only 30 per cent of the total registered cases attend for treatment and are regularly seen. Records of all registered cases have been examined, but as a few cases, classified earlier as "neural" and bacteriologically negative have since been confirmed as lepromatous, I do not think it possible, without re-examination, to accurately reclassify. Of the 1,259 cases on the register, however, 284 only are, or have been, diagnosed lepromatous, giving a lepromatous percentage figure of 22.5 per cent.

New cases diagnosed during the year numbered 64, of these 53 being tuberculoid, 2 indeterminate, and 9 lepromatous. This classification was done on clinical examination of the lesions, smear results, and the lepromin reaction. No histology was done. Of these new cases, 22 were children, 19 tuberculoid and one only lepromatous.

Reviewing admission figures to the register over the past five years, the trend towards a higher tuberculoid rate is noticeable.

Year		Tuberculoid	Lepromatous	Ratio
1950	...	29	11	$2\frac{1}{2} : 1$
1951	...	34	7	$5 : 1$
1952	...	43	12	$3\frac{1}{2} : 1$
1953	...	63	14	$4\frac{1}{2} : 1$
1954	...	55	9	$6 : 1$

Amongst early cases seen in childhood this trend persists, the

East Indian presenting a definite tuberculoid type lesion, while the African tends more to the indeterminate, or pre-lepromatous type of macule with the negative or doubtful Mitsuda reaction.

An approximate comparison of the tuberculoid: lepromatous ratio between the two main racial groups would be: 3 : 1 among Africans and 5 : 1 among East Indians.

THE LEPROSY SERVICE IN BRITISH GUIANA

This is centred in the Mahaica Hospital, a Government Institution housing 268 inmates with a total bed capacity of 350. Of these 34 beds are set aside in the hospital proper for the treatment of complications of leprosy, intercurrent disease, and for the admission, by their own choice for both surgical and medical complaints, of any discharged or registered patient in the Colony.

All leprosy records are maintained centrally at Mahaica.

Discharged cases on maintenance therapy and tuberculoid cases are periodically seen at county clinics, there being six such in all for the three counties. At these clinics are seen referred cases, and contact examinations are done at roughly half-yearly intervals. Lepromin testing, diagnostic smears, and re-smears of old cases are done at these clinics.

The medical staff of the leprosy service includes the one leprologist, six religious Sisters of Mercy, six staff nurses/midwives, one health visitor trained in leprosy work who does the school surveys, a dispenser, and one laboratory technician. Of these, the doctor, and the technician visit the clinics in addition to their duties at the Institution where the doctor is also the Medical Superintendent. Most of the field work is done by the trained health visitor.

LEPROSY CONTROL

The measures adopted in British Guiana are:—

1. Compulsory notification and compulsory isolation of all bacteriologically positive cases only. Three negative smears at monthly intervals for a period of one year is taken as the necessary criterion of arrest, when the patient is then discharged to outpatient surveillance and maintenance therapy by a special board of four doctors, including the Assistant Director of Medical Services, the leprologist, and the Government Bacteriologist. Private home isolation under bond, though legislated for, is not encouraged.

2. Periodical examination of contacts. The institution of preventive treatment, especially in lepromin negative contacts, is being instituted. As far as possible, all contacts are examined six-monthly. It is hoped that this number will eventually be cut

down (when lepromin testing is completed) to chiefly lepromin-negative contacts at these now frequent examinations.

BCG has been given to most Primary School children as part of the anti-TB campaign. Lepromin testing in these inoculated contacts is now being done.

3. Periodical yearly re-smearing of discharged cases, whenever possible.

4. Yearly School Surveys: Most early cases discovered are the result of these school examinations. This, in turn, leads to a wider field for contact examination, and theoretically should lead to the source of infection. This latter, however, is seldom so in practice.

5. Health Education: This is, as yet, very meagre, and public opinion on the question of leprosy is shockingly ill-informed. There is a wide field for this through the medium of the radio, posters, etc., and a start has been made by Editorials in the newspapers—though this is mainly directed at the present time to enlightenment of the more educated section of the community with a view to minimising stigma—a very real problem in British Guiana. Leprosy has also now been included in the curriculum of training for health visitors, sanitary inspectors and school teachers.

LEGISLATION

The first Ordinance was passed in 1858 regulating the establishment of the Mahaica "Leper Asylum," the institution being then under the control of the Poor Law Commissioners, with provision for the compulsory isolation of all necessitous cases, private isolation also being permitted.

In the light of increasing knowledge this original Ordinance was superseded by the Leper Asylum Ordinance of 1870 and later by that of 1905, with amending ordinances in 1910 and 1911.

The Leprosy Ordinance of 1931 now in force, no longer speaks of "asylum," but refers to the "Leprosy Hospital." The main feature of this Act is, I feel, the sharp distinction shown between the infectious and non-infectious type, all legislature being designed to control disease by limiting the movements and freedom of the former type only. Immigration and landing of infectious patients is fully dealt with. Compulsory isolation of the infectious is still the law. On the whole it is a good Ordinance, but needs revision in the light of further experience gained since 1931.

A new bill is in the process of being prepared to amend the 1931 Ordinance and bring the law into line with modern views of leprosy. It is hoped to make compulsory isolation "per-

missive ' and more attention is directed to compulsory treatment and contact examinations, chiefly in children. The Mahaica Hospital by which the institution has been for years known, should come into being officially, with no mention of "leper," "leprosy," or "asylum."

REHABILITATION AND AFTER-CARE

This is as yet in its infancy. Without the services of a special Social Welfare Officer and after-care organisation it is felt that very little could be done for the discharged patient who, in view of his excellent condition, is desirous of and capable of being re-integrated into society. Efforts are being made, with the help of the health education afforded by certain newspapers, and the efforts of a few more enlightened employers, to place these ex-patients in suitable employment. Similar efforts are being made by the Government and it is now the official Government policy to assist wherever possible.

The formation of an Ex-patients' Association, whose aims are the promotion of a better understanding of the disease and the safeguarding of the interests of and the assistance of the ex-patient, has now been started. There is no reason why it should not play an important part in Health Education and later, perhaps, in rehabilitation and after-care.

There is as yet no organised or official physio-therapeutic set-up for leprosy cases though as much as possible is being done especially in children, to provide facilities for muscle testing, electrical stimulation, and exercise.

No reconstructive therapy has as yet been attempted.

CONCLUDING REMARKS

Much has been done in the past ten years, especially since the introduction of the newer drugs as the established form of therapy; much still remains to be done. Within the leprosarium further improvements in living conditions and work are being planned, while it is hoped that the technical side of the staff is soon to be augmented. Greater facilities for research and study by improving laboratory facilities and the introduction of histology is also planned. Unfortunately there appears to be no immediate chance of introducing some means of reconstructive therapy and physical rehabilitation. The Government, however, is becoming more conscious of the need for social rehabilitation and this matter is now engaging their attention.