LEPROSY IN NYASALAND

Nyasaland was constituted a British Protectorate in 1891. It is a long narrow country, 550 miles in length but only 100 miles across at its widest part. The greater part lies to the west of Lake Nyasa. The plain along the lake shore varies in breadth; from it rises a plateau intersected by rivers flowing into the lake. The southern part, through which the River Shire flows from the lake to join the Zambesi, consists of highlands, rising in places to mountains. The area is nearly 48,000 sq. miles and the population consists of 1,781 Europeans, 1,600,000 natives and 1,400 Asiatics.

My two weeks visit to Nyasaland (see itinerary on p.7) included inspection of six out of the nine leprosy institutions and visits to the Jeanes School, the Nutrition Centre at Chintembwe, the Blantyre Mission Hospital and the Zomba Native Hospital. Two days were spent in visiting villages in the region of Salima and inspecting leprous patients. I had the benefit of the company and advice of Dr. de Boer, Director of Medical Services, during the first part of the tour and of Dr. Watson, his deputy, during the latter part. After so short a visit it is impossible to form any concise idea of the extent and nature of such an insidious disease as leprosy; all I can hope to do is to propose improved methods in use in other countries, and suggest steps that may be taken to make further investigations of the disease.

Frequency and Distribution

Leprosy though not the greatest, is among the more important, health problems in Nyasaland. The number of lepers can only be guessed at, as an expert survey has not yet been made. Only a fraction (about 600) are at present resident in leper settlements or camps. The Catholic Fathers at Mua suggested that in their area along the Lake shore there might be as many as 150 per thousand of the population suffering from leprosy, but this estimate appears to be excessive. The District Commissioner of the Mzimba District in a recent census found 100 cases in 150,000 inhabitants (0.6 per thousand). In India it was commonly found that census figures had to be multipled five to ten times to reach the correct figures, so the estimate for Mzimba may be short of the full number.

A further idea of the distribution of leprosy is gained from Table I which shows the homes of the lepers seen in the six leprosy institutions visited. Counting Mwami leper camp, which though situated in Northern Rhodesia admits chiefly lepers from Nyasaland, there are at present nine of these institutions. I was able

to visit six of them, viz. Malamulo, Likwenu, Utale, Mua, Loudon and Mwami. Unfortunately there was not time to see Bandawe, Likhoma and Livingstonia; these latter had last year average daily rolls of 62.2, 10.8 and 7.8 respectively. Besides the 359 patients seen at five settlements there were said to be 147 others home on leave.

TABLE I

District of Patient's Home	Malamulo	Likwenu	Utale	Mua	Loudon	Totals
Karonga ...	4	0	0	0	0	4
Mzimba ...	23	0	0	0	12	35
Chiromo ...	1	0	0	1	0	2
Dowa	14	3	2	0	0	19
Liwonde ...	1	0	0	0	0	1
Dedza	17	1	2	27	0	47
Ft. Johnston ...	1	9	6	2	0	18
Ncheu	7	1	5	7	0	20
Lilongwe ...	1	5	20	2	0	28
Zomba	10	14	8	0	0	32
Chiradzulu ...	3	0	4	0	0	7
Blantyre ...	9	2	5	0	0	16
Chikwawa ...	8	0	1	0	0	9
Cholo	34	0	1	0	0	35
Mlanje	37	2	20	0	0	59
Kota-Kota ...	1	0	0	0	0	1
Pt. Herald ...	8	0	2	0	0	10
P.E.A.	9	1	1	3	0	14
N. Rhodesia ...	0	0	0	0	2	2
	188	38	77	42	14	359

From this table it will be seen that patients may travel a good distance from their homes and do not always seek or obtain admission to the nearest institution. Thus 23 out of the 35 lepers in the Mzimba district in the north found their way past several nearer settlements to Malamulo in the south. The cause of this is probably that patients of all religions and sects are encouraged to go to Malamulo and the treatment there has been under more regular medical supervision. According to the table, the highest numbers of lepers are from Mlanje, Dedza and Mzimba. This does not, however, prove that the highest incidence is in these districts, as many factors may have come into play to induce patients to go for treatment from one area and not from another.

All that can be concluded is :—

(a) That leprosy is a common disease in Nyasaland.

(b) That probably only a small fraction are at present in leprosy institutions.

(c) That the distribution is uncertain, but that there are indications that it is most frequent in the more populous areas along the lake shore south of Domira Bay.

LEPROSY INSTITUTIONS

The following are a few notes on each of the six settlements visited.

Malamulo. This institution lies about 20 miles south of Blantyre. It is run by the Seventh Day Adventist Mission who supply a part-time doctor, a nursing sister and partly-trained African assistants. Government subsidised it with a grant of £284 3s. 0d. in 1938. Funds are not sufficient for expansion, and 20 to 25 patients per month are said to be turned away for lack of accommodation. The patients are housed in round huts of brick and dambo sand roofed with thatch, which cost £2 each to erect.

There was a daily average of 233.1 patients in 1938. On the day I examined them there were 192 present, 18 being absent at their homes. About 25 local lepers attend as outpatients. There is land to the extent of 200 acres attached to the settlement in which the patients work four mornings a week and produce maize sufficient for food for two months. This is being increased. About twopence a day is expended on each patient's food.

The following suggestions are offered :—

(a) The huts might be placed further apart so as to give more privacy to the patients, and individual bore-hole latrines might be substituted for the present communal ones.

(b) Patients should be carefully examined and treated for complicating diseases such as ankylostomiasis. The Medical Department is willing to arrange for drugs.

(c) Bacteriological examinations should be carefully done under supervision. The laboratory assistant needs further training in this work; a course under the Government Pathologist would be valuable.

(d) Hydnocarpus oil for injections has been supplied by B.E.L.R.A. This might be supplied by the Medical Department as mentioned later.

(e) It would be a distinct advantage if the Medical Officer could find more time to spend at the settlement; though his difficulty in doing this along with his other duties is fully appreciated.

(f) The Malamulo settlement is the largest, best staffed and most popular leprosy institution in the country; as far as I could judge excellent results are obtained in many cases. There is, however, no attempt being made to follow up cases or to do any preventive teaching in the villages. This is a very essential line of work which might be developed if staff were available.

(g) The discipline in the settlement is good. The fact that more patients are seeking admission than can be accommodated makes this possible. I would suggest that the able-bodied patients be encouraged to do more work to the extent of their capacity. Exercise backed by good nourishment is the most important element in leprosy treatment, and the willing co-operation of the patient counteracts his feeling of inferiority and helps him towards recovery.

Likwenu. This settlement is about 17 miles north-west of Zomba. It is run by the Universities Mission who supply a part-time nursing sister (Miss Jones). Occasional visits are given by the doctor of the Mission who superintends a large area. There is an African assistant. At the time of my visit 35 patients were present, 17 more being absent visiting their homes. Some of the patients showed vitamin B deficiency and others were suffering from hookworm disease. There are about 300 acres of land attached to the settlement and each patient is given about 3 acres to cultivate. The patients live among their fields and their huts are thus separate from each other. There is one latrine among two or three patients. Government gave £82 last year as a subsidy. No families are allowed to accompany the patients, but the latter are allowed to go home and visit their families. It is hoped soon to be able to make provision for separate care of children, and then families will be allowed. Bacteriological examinations are frequently made of lepromatous cases. Patients are given about twopence worth of food daily in addition to what they can gather from their fields. They are also given fruit from an orchard attached to the settlement.

The following suggestions are made :—

(a) The huts might be placed closer together instead of being scattered through the fields. They might take the form of small villages, the huts of open cases being separate from those of the closed cases. This would make control simpler and encourage communal life.

(b) The patients appear to be having too much done for them, they tend to be lazy. The remarks about Malamulo would apply here and to a much greater extent. I gathered the idea that the patients are being induced to stay in the settlement and do not sufficiently appreciate what is done for them.

(c) The latrines might be placed nearer the huts, one for each hut, and should be made deeper if possible.

(d) The frequent absence of patients from the settlement makes for the spread of infection by open cases.

(e) Only open cases which are tending to become negative require repeated bacteriological re-examination.

(f) Examination and treatment for hookworm and other accompanying diseases are very necessary. Very many of the cases showed distinct signs of improvement, but better results would undoubtedly be obtained if other diseases were eliminated and if the patients led more active lives.

Utale. This settlement is 60 miles north west of Zomba. It is under the Marist Fathers and a sister is in charge. The settlement is on the other side of the river from the main Mission

buildings. I found 78 patients present but was told that there were 57 others absent at their homes. There are very fine brick buildings. Huts to accommodate two families are erected of brick and tiles at £12 each. There are also some round mud and wattle huts which cost 15/- each. The chief difficulty in this site is termites, which destroy the woodwork of the buildings. There is also a hospital building newly erected which was empty. There are at present 8 non-leprous children of lepers born in the settlement and 6 which were brought by their parents; it is expected that there will be more in future (fig. 2).

It is proposed to put up a children's home at an expense of £565 10s. 9d. to house these children. This seems a large sum; the hospital cost only £355. Here also there seems to be too much done for the patients, who are lazy in consequence. They only work one hour a day for the community though they will work for wages and make 6/- a month. They get twopenceworth of food a day, and are given free clothes if they are unable to work. There seems to be the fear that the patients will go away if they are asked to do more to support themselves. What is required most in this institution is skilled medical supervision. The sister-in-charge is devoted to the work, but she has not had the benefit of special training in leprosy.

A grant of £178 18s. 0d. was given last year by Government.

Mua. This settlement is situated in the Dedza District on the plain which slopes down to the Lake, from which it is about 7 miles distant. It is under the care of the White Fathers, a trained nursing sister being immediately in charge. The site is comparatively cool and healthy, being 400ft. above the Lake. There are 35 acres of land of which about 5 acres are used for buildings, the rest being cultivated by the patients. 44 patients were seen, but we were informed that there were actually 88 in the settlement, half of them being absent on leave. The patients are housed in round huts of wattle and thatch, which are sanitary and suitable for the purpose and inexpensive to erect. Several of the patients appeared to be suffering from hookworm. Treatment with hydnocarpus oil injections is given by the sister, but there has hitherto been no medical supervision.

It is suggested that two sisters be sent to Uganda for special training in leprosy work under Miss Laing at Kumi. I understand that in future the Medical Officer at Dedza will supervise the settlement medically. Though the incidence of 15 per cent of leprosy mentioned by the Fathers is probably excessive, this region seems to have many lepers, and it would be well if a careful survey and an educative campaign were carried out. With this in view the White Fathers are translating the B.E.L.R.A. booklet "Control of Leprosy" into the local vernacular and this can be distributed to the schools throughout the country. A grant of £93 10s. 0d. was given last year by Government.

Loudon. This small settlement near the road from Kasungu

to Mzimba is under the charge of the Church of Scotland Mission. There were 14 patients present, 13 being absent on leave. They were well nourished and appeared to be benefiting from the treatment which is carried out by the hospital sister and an African assistant. With two exceptions all the patients were from the Mzimba district in which the settlement is situated. A grant of £30 10s. 0d. was given last year by Government.

Mwami. This small settlement is just over the Nyasaland border in Northern Rhodesia about 12 miles from Fort Jameson. It is under the care of the Seventh Day Adventist Mission. There were 37 patients present on the day of our visit, though there were stated to be others absent in the fields. The settlement is in charge of Miss Ingle a nursing sister who had formerly worked in the Malamulo settlement. There is at present no medical supervision. The patients are lodged in round huts of burnt bricks and mud and thatch which are neat and clean and suitable for the purpose. There is a small hospital which however is not much used. The patients cultivate the land with difficulty as it is not very fertile. Most of the patients had good physique, but a few of them were obviously lazy.

Several of the patients might be dismissed as free from all active signs to make room for others more in need of treatment. Almost all were capable of work apart from laziness, and if their relatives object to their return home the authorities might be asked to take measures for them to be received back to their villages. Here as in the other settlements the majority of patients were of the lepromatous type. The patients are well looked after and many appear to be improving.

TYPE OF LEPROSY

I classified the patients seen at the above six settlements into five groups : (a) severe lepromatous cases (L_2 and L_3); (b) slight lepromatous cases (L_1); (c) cases with tuberculoid lesions; (d) cases with flat lesions; (e) cases with no active signs. Each of these categories was again subdivided for sex and for deformity or crippling. The classification is only approximate, as reliable bacteriological examination results were not available in all cases. The findings are given in Table II.

It will be noticed that lepromatous cases constitute 61 per cent of the whole. This is a very large proportion, if these cases represent a cross section of the leprous population of the country. Survey of villages in North India showed only 5 to 10 per cent of lepromatous cases, while in the N.E. Belgian Congo the proportion of mild neural cases was even larger than in North India. In the Report on Northern Rhodesia (p.19) the possible reasons are given for the comparatively large number of lepromatous cases in Nyasaland.

TABLE II

Types		Malamulo M.	Malamulo F.	Likwenu M.	Likwenu F.	Utale M	Utale F.	Mua M.	Mua F.	Loudon M.	Loudon F.	Mwami M.	Mwami F.	Totals		
Severe	D.	6	1	3	1	6	2	2	0	3	1	2	2	29)	138	35%
lepromatous	U.	52	10	5	1	16	5	6	2	2	1	9	0	109)		
Slight	D.	8	0	4	3	6	2	3	0	1	0	0	0	27)	101	26%
lepromatous	U.	33	15	3	0	6	5	2	5	1	0	3	1	74)		
With tuber-	D.	1	0	0	0	3	0	2	0	0	0	2	2	10)	47	12%
culoid lesions	U.	9	6	1	1	3	4	4	3	1	0	1	4	37)		
With flat	D.	3	2	3	1	3	0	1	1	0	0	1	0	15)	54	
lesions	U.	17	12	1	1	0	4	2	0	1	0	0	1	39)		
No active	D.	0	1	1	2	10	0	4	3	1	0	5	2	29)	56	
signs	U.	11	5	4	0	2	1	0	0	2	0	1	1	27)		
		140	52	25	10	55	23	26	14	12	2	24	13	396		
		192		35		78		40		14		37				

(D.: Deformed. U.: Undeformed.)

SUGGESTIONS FOR FUTURE POLICY

Two main Institutions required. All the leprosy work in Nyasaland is at present in the hands of missions. These, with the small annual cost to Government of £900, are caring for some 600 lepers. The efficiency of the work done varies in the different institutions according to the amount of skilled medical supervision available. For the efficient running of a leprosy centre a whole time medical man and two sisters or lay workers are advisable; and the size of the centre should be such as to justify the services of this staff, either by increasing the number of patients to four or five hundred or by combining a moderate sized settlement with preventive village work. To deal effectively with leprosy as it exists in Nyasaland today there should be at least two such leprosy centres, one for the Southern and one for the Northern Province. Unfortunately the care of lepers is divided among nine comparatively small units which, with one exception, are without medical supervision and most of which are of the nature of asylums and of little value towards the control of leprosy.

For the Southern Province the Malamulo settlement might be developed into an effective centre which would gradually control leprosy. This institution is, however, hampered by lack of funds, and large numbers of patients have to be refused. For the Northern Province an efficient institution is required in an accessible site on the plain bordering the Lake. For this there are two alternatives which are discussed below; either to develop the White Fathers' settlement at Mua, or to found a new settlement under Government.

(1) The present Mua settlement is situated in the midst of what is apparently one of the most leprous areas in the country. It can be reached by road and train from north and south. More land for agriculture would be necessary and I understand that this might be difficult or impossible to obtain. For its development a whole time officer trained in leprosy work would be necessary. The medical department might apply to the British Empire Leprosy Relief Association for a European Sanitary Worker with practical anti-leprosy experience, whose whole salary, etc. would be paid by B.E.L.R.A. and who would work under the direction of the Director of Medical Services. He would visit in turn the various settlements in Nyasaland and help to organise occupational treatment and introduce other improvements. Thereafter he would be stationed at Mua and, under the supervision of the medical officer at Dedza, help the Mission to develop the settlement into a first class anti-leprosy unit. These suggestions, if approved, would involve a certain amount of extra expense to Government, but with the co-operation of the Leprosy Association a beginning would be made in the effective control of leprosy which so far has not been attempted.

(2) The alternative scheme is for Government to begin a new leper settlement situated in the region of Salima. This would require considerably more expense and sufficient suitable land would have to be found. Some 1,500 to 2,000 acres of arable land would probably be required to provide farms for 400 patients so as to make the institution as nearly self-supporting as possible and provide occupation therapy which is all-essential for the treatment of leprosy. Preferably there would be a whole time doctor and one or more European Sanitary Officers; but if this proved impossible on account of expense the Sanitary Officers could conduct the settlement under the supervision of the local Medical Officer. I understand from Mr. Ducker of the Empire Cotton Growing Association that suitable land might be available a few miles north of Salima station. I understand also that the local chiefs and other leading Africans in this neighbourhood are anxious for the formation of a leper settlement by the Government.

Leprosy Expert. In the Report of my last year's tour in East Africa (*Leprosy Review*, January, 1939) the appointment of a Leprosy Expert for East Africa is suggested. B.E.L.R.A. has offered to pay part of the expense if this appointment is made. I would suggest that Nyasaland should take part in this scheme.

Survey—Training—Education. Nyasaland with its various races and climates offers an almost unique opportunity for the study of leprosy, and in doing this the co-operation of the Nutrition Centre might be requested. In the control of leprosy the co-operation of the Jeanes School might be of considerable value if practical teaching about leprosy were included in the syllabus. It is important that a thorough survey combined with an educative campaign be carried out with a view to instructing chiefs, teachers and others with influence and education in the simple methods required to prevent the spread of leprosy. A clerk trained in village survey work and in the recognition of leprosy might be employed to make enquiries and collect the names and addresses

of lepers, their families and other contacts, along with other information. The District Commissioner might then make arrangements for these lepers and contacts to appear for examination by the Medical Officer. In this way a survey might gradually be carried out followed by education in preventive measures. Compulsion when applied from outside the community is likely to lead to concealment and defeat its object, but compulsion from within the community can be effectively brought to bear by educating local public opinion.

Africans in charge of dispensaries might be carefully trained to give treatment to leprous patients. This training might be carried out in connection with one of the larger leper settlements.

Reference has already been made to the translation of the booklet "Control of Leprosy" into the local dialect. This might be printed and distributed widely to chiefs, teachers and other influential and educated Africans.

In making the survey special attention should be given to age groups, the effects of nutrition, complicating diseases, climate, elevation, race, tribal customs and especially to customs regarding isolation of lepers and treatment of leprosy.

Treatment. A note on the supply of drugs which applies also to Nyasaland is added to the Northern Rhodesia Report.