## NORTHERN RHODESIA

I left Salisbury at 7 a.m. on 7.12.52 and arrived at Lusaka about 9.20 a.m. and was met by Dr. Evans of the Medical Department and Dr. Garrod, the Leprologist-designate. I was able to have preliminary discussions with Dr. Evans and Dr. Garrod. On 9th December I left with Dr. Garrod to visit Cikankata, where the Salvation Army have a Leprosy Institution in connection with their general hospital work. Dr. Gauntlett, the Medical Officer, was obviously keen and anxious to do everything possible to develop and extend the work. Another doctor is needed if this work is to develop adequately. It is gratifying to learn that such an appointment has been made and the second doctor will shortly arrive. I would strongly recommend that as much attention as possible be given to the Leprosy Institution, for it represents an excellent example of leprosy work in co-operation with a general hospital.

I am doubtful of the wisdom of extending Cikankata for two reasons. (1) The hospital is in an area where there is much European settlement, and it does not seem a sound policy to develop a large central leprosarium under such conditions. (2) The local African Chiefs are not particularly co-operative. If, therefore, local opinion has to be overcome, and assistance is difficult to secure, the chances of success of a large institution are not good, and it would be better, in my opinion, to continue the present work and endeavour to make it more adeqate.

From Cikankata we motored to Mazabuka, where the G.M.O. (Government Medical Officer) Dr. Dublon, had a small leprosy unit attached to the hospital. There were 25 cases under isolation. Oral Dapsone was the method of treatment, and the dosages tended to be too high (300 mgms. daily). There apparently had been one death, but I was a little doubtful whether patients were taking their tablets regularly, for the clinical improvement did not appear to be commensurate with the dose that was given. It was suggested that Dapsone (D.D.S.) should be given bi-weekly and a close check made to see that the patients actually swallowed the tablets. After tea at Dr. Dublon's house, Dr. Garrod and I left for Monze, where we spent the night. I was glad to have the opportunity of discussing matters in some detail with Dr. Garrod. The decision to appoint a senior officer of the Medical Service as Leprologist appears to be a wise one.

After spending the night at Monze we left for Chikuni, a Roman Catholic Centre, where the patients come as out-patients. The

District Commissioner, Mr. Bourne, whose headquarters are at Gwembe, has organised a local segregation scheme in co-operation with the District Chiefs, who are most enthusiastic. The patients in this Segregation Settlement go over to Chikuni for treatment, and when we arrived all but three made their way across for us to see them. Chikuni is only a few miles from this isolation village. The settlement housed some 50 patients in ordinary African huts and was neat and tidy. Of the three patients who were unable to go to Chikuni, one was unwell with signs of mild hepatitis, the second was an old man, and the third a recent admission. I was very surprised to find that the patients had been given DDS tablets to take away with them, and we collected a matchbox full of tablets from one patient! This emphasises the need for closer supervision, for there were enough tablets in the segregation unit to cause serious ill health, if not death.

We returned to Chikuni and I examined 120 cases. Quite a number needed no further treatment. We laid down instructions for twice weekly DDS. The Sister mentioned that the patients insisted on injections, and, that being so, we indicated it would then be better to give aqueous sulphetrone, especially for those cases not in the segregation village. The African dresser should be made responsible for the supervision of tablets for those patients who could not come twice a week; or, alternatively, patients could be given a once a week treatment, taking 4—6 months to reach a maximum of 500 mgms.

This work indicates the possibility, where there is a keen District Officer, and co-operative Chiefs, of organising local segregation units, and, if these are linked up with the G.M.O's. work, then the expense of a large inpatients' institution could be avoided. There must be central and district leprosaria, but, combined with these, there should be local segregation units organised along similar lines to this one, admitting, if necessary cases with acute complications into the local hospital. Every Government hospital should be prepared to admit leprosy patients for temporary treatment. This principle has been accepted and implemented by the Northern Rhodesia Government, and is strongly supported by the D.M.S. This, therefore, means that local segregation units if established, will always have the co-operation of the nearest general hospital. This forward policy of the Government will give much encouragement to those who are undertaking leprosy work, but have no hospital facilities for treating acute emergencies or concurrent disease arising in the course of leprosy.

I returned to Lusaka, and in the evening had discussions on the general principles of leprosy control with Dr. Garrod. On the

question of the choice of a central Government leprosarium it was suggested that the following principles should apply. Such an institution should be:—

1. Reasonably accessible to Lusaka for teaching and training facilities. By accessibility is meant good air, train or road communication.
2. In an area where the local Africans, especially the Chiefs, are ready and willing to co-operate.
3. In an area of relatively high endemicity.
4. In an area in which experimental field units can be organised.
5. In an area where there is a reasonable possibility of acquiring good agricultural land.
6. In an area where it is possible to do follow-up work, especially in connection with child contacts.

Before a final decision is taken with regard to this, it would appear to be a wise decision to post the Leprologist-designate to Luapula, seven miles from Mbereshi, as a preliminary headquarters. Here there is an L.M.S. Hospital, which I am sure would co-operate. There is also an all-weather road to Ndola, which has excellent air communications, not only with the rest of Northern Rhodesia, but with connections to East and West Africa and to Europe. Other advantages are that this area has a relatively high endemicity, with densely populated villages which occupy a narrow strip of land along the river. Within a fairly short time it will be possible to fly within a few miles of the centre. There is already a leprosy institution here, with two lay workers, and possibility of development. The following buildings have already been erected—patients' houses, office for two workers, medical and general office, two carpenters' shops, three houses—one, however needs extensive repairs—one guest house. In addition to this there is ample land available. Diet is poor, and meat not available. The tsetse fly belt is within a few miles, but this land could be cleared and sheep and goats reared for meat, as these are not affected by fly. As the institution developed, fly would recede and other animals could be reared. Another great advantage is that the local Chiefs and inhabitants are co-operative.

I further discussed with Dr. Garrod and Dr. Evans the initial duties of the leprologist, and the following points might be considered with regard to the final conditions of his appointment.

1. In conversation and correspondence with the Director of Medical Service, it is good to know that such a step is already actively under consideration, and that Dr. Garrod is to be appointed

with the rank of specialist, and will be the Territorial Leprologist for Northern Rhodesia. The Leprosy Service is to be planned along the same principles as are at present in the specialist branches of Tuberculous and Venereal Diseases. The set-up for leprosy therefore makes it possible for Dr. Garrod as head of the Leprosy Division to organise the campaign effectively. The specialist in leprosy is directly responsible to the D.M.S., and thus the whole service will be integrated into the Medical and Health Services of the whole territory.

2. The Leprologist should not be solely administrative. He should be in over-all charge of a Central Institution, acquiring practical experience of his own.
3. While surveys must be undertaken, he should not be solely a field officer; his survey work should be confined to 3-4 months each year.
4. The Leprologist must be in a position to help and advise other institutions. Thus he must have, or acquire, experience in clinical, operative, research and preventive aspects of leprosy. This means that, prior to the final appointment, Dr. Garrod should be sent on a study course. I would recommend that (a) He be appointed a delegate to the International Leprosy Congress in Madrid, meeting early in October. (b) Prior to this he could spend some time in England, when he would get an insight into the more difficult aspects of leprosy therapy. (c) After Madrid I suggest he visits India and I would be glad to outline a tour for this purpose; he could either go to India from Nairobi, or fly from Europe to India and return to Nairobi. (d) When in East Africa he should get into touch with Dr. Ross Innes. (e) At a later date, when he has acquired greater experience, a further period of study, covering West Africa, North America (Carville) and South America, would be most profitable.

With regard to the territory covered, Dr. Garrod is at present responsible for Northern Rhodesia, but the closest co-operation should be maintained with Nyasaland, and the two Governments, by friendly consultation, might ultimately work out a common policy. Money has been given for a leprosy survey for both territories, and it seems to me a sound policy to extend this over at least a 5-year period and ask the Leprologist for Northern Rhodesia to organise the survey and supervise the details.

While in Lusaka, I saw the few leprosy cases isolated in the vicinity of the Government Hospital. Lusaka is not a satisfactory area for permanent isolation, and I feel that this segregation unit

should be looked upon as a transit camp. Non-infectious cases should be treated as outpatients and infective cases sent to the nearest leprosy institution. Cases needing temporary medical or surgical treatment should be admitted to hospital, and those permanently deformed, and arrested cases, sent back to their villages or to an annexe of one of the Missions' homes where they have facilities for the care of the disabled patient, who cannot be absorbed into the community.

With regard to treatment, I have already laid down the general principals of treatment and only need to mention that the routine treatment should be twice weekly Dapsone. Where supervision is difficult and it is impossible to ensure adequate oral treatment, then parenteral sulphetrone (50% aqueous solution) should be the alternative. Adequate stocks of Dapsone (Avlosulphone—I.C.I.) and Sulphetrone granules (B.W. & Co.) should always be on hand.

On December 12th the Government kindly chartered a plane which took me to Mongu. This is Dr. Garrod's headquarters, as P.M.O. of this district. The weather was poor and the journey not without its exciting moments!

We stopped over at Mongu for lunch and saw Dr. Garrod's small leprosy unit attached to his General Hospital. A Nursing Sister, who is also the Theatre Sister, supervises some 130 cases. In addition to this some 120 cases are attending mission camps in the vicinity. The general plan is an excellent one. Patients are first admitted to the Government hospital unit, and stabilised on sulphone therapy and then sent to the missions, where the medical work is not up to the same standard, as there are no resident doctors.

From Mongu we then flew to Balovale and Dr. Le Grange, the G.M.O., kindly motored us to Chitokoloki. I should mention that Dr. Beardsley, of Mwami, accompanied us on this trip. The organisation at Chitokoloki is extremely good. There is the main leprosarium where active cases are treated— here there are good hospital facilities and a laboratory where leprosy tissue can be prepared up to the stage before embedding, and where a considerable amount of biopsy work has already been done. There are approximately 250 cases in Chitokoloki. In addition there are four satellite settlements. These are in reality after-care colonies, where patients can be better supervised and yet live a natural village life. Where possible discharged patients should be sent back to their homes, but when that is impossible this is an excellent method, and in reality is a "Papworth Colony" for ex-leprosy patients. Land is given to the patient, and after the first year he is expected to support himself as he would in an ordinary village.

There are four of these re-settlement areas. There is a great opportunity here for a well planned experiment on long term sulphone results. It would be interesting to continue half the healed and discharged lepromatous cases on a maintenance dose of Dapsone, and give the other half a placebo in the form of 100 mgms. tablets of calcium lactate and see how far, over a period of five to ten years, relapses occur. It is accepted, of course, that active treatment would be given to all cases for one year after their first negative smear and the experiment would start from that period. A comprehensive immunological investigation could also be undertaken.

It is gratifying to have the information that Chitokoloki is to be the regional leprosarium of this district. Another mission institution in charge of a Nursing Sister has been established at Kabulamena. Such an institution, and others that may be commenced by missions, should be looked upon as subsidiary ones or auxiliary units, and should be under the over-all charge of Dr. Worsfold. All active cases should be sent to Chitokoloki. Those cases which have been stablised on sulphones and are not likely to be difficult to treat, should be treated at these smaller institutions with, as I say, general supervision from Dr. Worsfold. I was most impressed with the work, and Dr. Worsfold is deserving of all support and encouragement.

I returned to Lusaka on December 12th, arriving at 12.30 p.m. The journey again had its exciting moments, and we passed through very heavy rain.

Before closing this report I should mention that I took the opportunity, when visiting Kocira in Nyasaland, to motor over to Mwami, and to Fort Jameson. I had a short interview with the P.M.O., at Fort Jameson and then went to Mwami with Dr. Beardsley, who is the doctor in charge of the leprosy settlement of the Seventh Day Adventist Mission there, and who accompanied me later to Chitokoloki. While, as is often the case, there is relatively little leprosy on the escarpment, it is said that the incidence is considerably higher in the valley, where there is a mission of the Dutch Reformed Church (S. Africa) and a leprosy institution at Nsadzu in charge of a missionary Nursing Sister. Unfortunately, I was unable to visit this latter institution. As at Malamulu, so here, many cases came from long distances, for this institution is well known for miles round. It thus illustrates again the fact that, provided an institution is well organised and the patients have confidence in those who are treating them, a leprosarium will attract patients from all over the territory, and even beyond its

borders. There were 293 cases, with a high percentage of the lepromatous type.

I spent some time discussing matters with Dr. Beardsley, demonstrating bacteriological technique, and suggested to him the cases that were either arrested or healed and could be discharged. There is a General Hospital attached to the Settlement, belonging to the same mission (Seventh Day Adventist). Dr. Beardsley is quite prepared to admit cases into this hospital for acute medical or surgical treatment. Therefore, apart from a sick bay there is no need for a special hospital for the leprosy institution. The Nursing Sister in charge is keen, and potentially this institution has great possibilities. It is hoped that more medical staff will be available, so that the two institutions—the hospital and the leprosy settlement—can be organised as one unit. The laboratory is gradually developing and is now able to cope with ordinary work, and I am sure that still more effective work will be done in the future.

The institution at Mwami, already doing excellent work, should be looked upon as the central leprosarium for the district, and cases that are difficult to treat, or need special treatment, should be referred to it. Nsadzu should be a subsidiary institution, and be used for the isolation and/or treatment of cases who are more easy to treat, and for advanced cases who cannot be re-absorbed into the community.

December 13th was spent in discussions with the Director of Medical Services and the Minister for Health and Self-Government for Northern Rhodesia. The discussions and conversations can be summarised by itemising the points which arose.

1. Leprosy is well within the possibility of control (a) if linked to treatment, and the selective principle is applied to admissions as well as discharges, (b) If village segregation units can be encouraged.
2. A survey should not be a whole-time job, but part of an overall leprosy policy, covering a period of several years.
3. There should be regional leprosaria where treatment of a detailed nature can be provided. After stabilisation cases should be sent to village and other settlements. The nucleus of such work appears to lie in the institutions under Dr. Worsfold, Dr. Gauntlett and Dr. Beardsley.
4. Government hospitals should be the pivots of a leprosy campaign in areas of low prevalence.
5. DDS is the most suitable basic treatment, with parenteral sulphetrone as an alternative, particularly where the medical staff is inadequate for close supervision.

6. Rehabilitation centres should be developed.
7. A Leprosy Control Officer, specialist grade, should establish temporary headquarters at Luapula Valley, and should tour for six months of the year—but not continuously.
8. Dr. Garrod might with advantage tour India,—Bombay, Hyderabad, Vellore, Madras, Calcutta
9. Leprosy work should be linked with other specialist work, in particular, orthopaedic surgery.
10. General hospitals should admit leprosy cases if any acute condition demands it.
11. Leprosy Officers might be appointed for Nyasaland and Northern Rhodesia, with over-all supervision by one Leprosy Control Officer.
12. Propaganda and educational training and the development of leprosy control, should, as a whole, be integrated with the work of the general medical services.

At the close of these discussions Dr. Robinson very kindly expressed in generous terms the gratitude of his Government and appreciation that the Medical Secretary of the British Empire Leprosy Relief Association was able to come out and discuss matters, and was most grateful for the assistance I had rendered.

While in Lusaka I met the pathologist and had a long talk with Dr. Briggs, the Tuberculosis Officer. Dr. Briggs will be a most helpful colleague in the planning of epidemiological and immunological studies, for the problems of tuberculosis are sufficiently allied to those of leprosy for co-operation in this work to be of the very greatest assistance. I found the Government pathologists and others very desirous of helping whenever possible.

The time is ripe for a forward policy, both in Northern Rhodesia and in Nyasaland, and the Northern Rhodesian Government are fortunate in having an experienced officer willing to specialise in leprosy. With the present eminently balanced outlook, with the determination to build on sound lines and not to be rushed, there is every prospect of the development of a comprehensive leprosy programme, which will achieve its objective—the control of leprosy in the territory.

Nyasaland and Northern Rhodesia have similar problems, and it augurs well for the future that there is the closest co-operation between the two territories, and that the heads of the Medical Departments in both countries are enthusiastically supporting forward moves in the development of leprosy control.

In closing this report on Northern Rhodesia, I should like to express my appreciation of the work the missions have played in leprosy in this territory. They have borne the main burden, and now that Government finds itself in a position to co-ordinate the drive against leprosy, the missions have gladly and wholeheartedly offered their co-operation and will play an essential part in this important work. I would like to express my sense of deep gratitude and indebtedness to the whole Medical Department, led by Dr. Robinson who is keen that leprosy should have its rightful place in the over-all Public Health programme. The Government showed their keenness by chartering a plane to Balovale from where, through the kindness of Dr. Le Grange, I was able to reach Chitokoloki despite torrential rains. I also had the opportunity of discussing treatment matters with Dr. Briggs, the Tuberculosis Specialist, and with the Government Pathologist. This contact will be most helpful as the leprosy campaign develops.