LEPROSY NOTES

No. 6. JULY, 1929.

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The British Empire Leprosy Relief Association.

(EDITOR :—FRANK OLDRIEVE.)

The Association's Object :

TO RID THE EMPIRE OF LEPROSY.

PRINCIPAL CONTENTS.

24, CAVENDISH SQUARE, LONDON, W.1.

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Editorial Note.

It is with very sincere regret that for the last time I write as Editor of LEPROSY NOTES. Since the formation of The British Empire Leprosy Relief Association, six years ago, it has been my privilege to be the Secretary, and the work has gradually developed until there are branches of the Association, with influential Committees, or representatives of the Association, in almost all parts of the Empire where leprosy is at all prevalent.

The work has been made very much easier by the help that has always been given by those whom, whether connected with the Government or Missionary Societies, I have met or with whom I have corresponded, in all parts of the Empire. I take this opportunity of very warmly thanking all those who have helped me, in ways too innumerable to mention. I shall never forget the many kindnesses I have received from leprosy workers in every part of the Empire that I have visited.

LEPROSY NOTES will in future be edited by Dr. R. G. Cochrane, who succeeds me as Secretary of the Association, and while expressing my great indebtedness to all those who have been my helpers in commencing the publication, and I am very grateful indeed to those who have contributed articles, I should especially like to mention Mr. F. H. Brown, C.I.E., a member of the Executive Committee of the Association, and on the staff of *The Times*, for his invaluable advice, and kindly criticism.

I think it should be clearly stated that my interest in the work of the Association has not in any way diminished, indeed it is only because I feel that it is in the highest interests of the work of the Association that a medical man should be the Secretary, that I have felt impelled to resign. I am more than ever convinced that the object of the Association can be achieved if those who are able to do anything will wholeheartedly tackle the part of the work that lies to their hand.

The British Empire Leprosy Relief Association.

APPOINTMENT OF NEW SECRETARY.

In 1927 Mr. Oldrieve, the Secretary of the Association, completed a series of visits, made in the interests of the work of the Association, to those parts of the Empire where leprosy is most prevalent, and as a result of the work that has been commenced since the formation of the Association, leprosy relief measures are being undertaken in a systematic way in every part of the Empire where leprosy is at all prevalent. Soon after his return from his last tour Mr. Oldrieve informed the Committee that he wished to be relieved of his work as Secretary of the Association as soon as a successor could be found, as he strongly felt that the next official of the Association to visit the Colonies, etc., should be a medical man, who was an expert in the treatment of the disease. The Committee reluctantly accepted this view, and decided to approach Dr. R. G. Cochrane with an invitation to succeed Mr. Oldrieve.

Dr. Cochrane obtained his diploma of M.R.C.S. (Eng.), L.R.C.P. (Lond.), in January, 1924, graduated at the University of Glasgow M.B., Ch.B. (with Commendation), in March, 1924, and in July of the same year, he obtained the diploma of D.T.M. & H.

In August, 1924, Dr. Cochrane was appointed Medical Secretary to The Mission to Lepers and proceeded to India, where he established his headquarters at India's largest Leper Asylum at Purulia, Bengal. From this centre, and till March, 1926, he visited practically all the Leper Institutions in India and Burma, acting as Adviser to The Mission to Lepers with regard to the medical treatment of the lepers. He later visited Siam, Federated Malay States, Borneo, and the Philippine Islands, studying the leper work being carried on in all those countries.

Dr. Cochrane returned to England later in April, and obtained his M.R.C.P. (Lond.), in April, 1927. In August of that year, he left England and visited Japan and Korea in order to see the leprosy work in those countries. He arrived in India in December 1927, and since then he has been in charge of the medical work at the Leper Institution at Bankura, Bengal, at the same time acting as Medical Adviser to The Mission to Lepers. He obtained his M.D. (Glasgow) in January, 1928. Dr. Cochrane is, therefore, well qualified, both by training and from his knowledge of leprosy work as it is being carried on in almost all parts of the World, to become the Secretary of the Association. Mr. Oldrieve is leaving England at the end of June to settle in Southern Rhodesia, and all communications in future should be addressed to Dr. Cochrane, at 24, Cavendish Square, London, W.1.

Parliament and the Work of the Association.

In the House of Commons on March 25th, 1929, Sir Robert Thomas asked the Under-Secretary of State for India approximately the present number of lepers in India ; how many treatment centres are now open ; to what extent those centres are State supported as regards initial establishment, maintenance and payment of their medical staffs ; and whether The British Empire Leprosy Relief Association receives any financial aid from public funds ?

The Under-Secretary of State for India (Earl Winterton) : The number of persons in India returned as lepers at the census of 1921, the last official figures available, was 102,513, but it is probable that the number of lepers in India is considerably in excess of that returned. Information is not available as to the number of treatment centres now open in India. With regard to the remainder of the question, as public health is a transferred Provincial subject, the matter is one for the local governments and legislative councils. The Indian Council of The British Empire Leprosy Relief Association work in co-operation with the Provincial Governments and voluntary agencies and in each Province the local governments either support the leper institution or make a capitation grant to the institutions under the administration of the Mission to Lepers.

Sir R. Thomas : Is the Noble Lord aware that there are more lepers under the British flag than under any other flag ?

Earl Winterton : That is exceedingly probable, in view of the fact that one-fifth of the whole population of the world is under the British flag.

Mr. Day : Is it not the fact that the latest remedy for leprosy is greatly alleviating that disease ?

Earl Winterton : Yes, I believe that is so. My noble friend has a very distinguished medical adviser at the India Office, who was closely associated with the discovery of that particular remedy.

Leprosy in Nyasaland.

By F. E. WHITEHEAD, O.B.E., M.R.C.S., L.R.C.P., Director, Medical and Sanitary Services.

It is estimated that there are some six thousand lepers in a population of about 1,300,000 native inhabitants in Nyasaland.

Until recently very few of these lepers came to the hospitals for treatment. During the year 1926, for instance, out of a total of over 146,000 natives who received treatment at the Government hospitals and dispensaries, only 84 came on account of leprosy.

The numbers treated at the various Mission hospitals for leprosy are not known exactly, but it may be assumed that they were about the same. In the year 1927, as a result of the interest in the treatment of leprosy taken by The British Empire Leprosy Relief Association, whose Secretary visited Nyasaland, the number of lepers treated both by Government and the Missions increased.

In this year monetary grants were made by the Association and by the Government to eight Mission stations to be spent upon either starting new treatment centres, or enlarging and improving existing ones. At the close of the year 1928 there were eight centres working and it is hoped that 1929 will see one or two more.

The treatment centres generally consist of a main building where patients are given injections, and where drugs, etc., are kept, and of the lepers' living huts. The huts are made of grass and are similar to ordinary village huts. They are inexpensive to build, often they can be built by the lepers themselves, and when they fall into disrepair they can be burnt and new ones put up in their place.

Drugs are supplied free to the centres by the Association and by the Government.

The feeding and maintenance of the lepers at these centres is a heavy expense, which so far has been borne almost entirely by the Missions, though in one or two cases assistance for maintenance has been given by the Association and by Government. In a few cases the lepers themselves have contributed a small sum towards their upkeep.

At most of the centres the lepers grow food crops but these are not nearly enough to be self-supporting.

For various reasons it is not considered advisable to introduce any form of compulsory segregation of lepers, except perhaps occasionally in special circumstances. At present more lepers apply for

admission to the centres than can be dealt with, and there appears to be no reason why, if the Government could afford a substantial grant for maintenance, the large majority of the lepers in the country could not be treated at the centres without any compulsion.

The treatment given most generally, consists of two injections of " alepol " weekly. The Nyasaland native has not as a rule the objection to intravenous and intramuscular injections which exists amongst some races. This is probably due to the spectacular results seen upon yaws which is treated in certain districts where this disease may occur, with injections of sodium bismuth tartrate or novarsenobillon. These results have impressed the people of those districts to such an extent that they prefer an injection to ordinary medicine. Unfortunately they expect to have the same results in leprosy as in yaws, and may show disappointment when they do not see a quick improvement.

At the time of writing, complete reports have not been received from all the centres for the year 1928, but from the reports that have been received, it appears that there are over 300 lepers living at the centres in addition to those who attend as out-patients for injections or for examination after their discharge from the centres.

During the year 1928 thirty lepers have been discharged from various centres as cured of their symptoms. These cases report periodically for examination and further injections if considered necessary. Two hundred and fifty-seven showed improvement during the year, but were not cured, whilst fifty-two either showed no improvement or were worse. Only two deaths were reported.

At the Government hospitals thirty-four lepers were admitted and seventy-nine treated as out-patients.

Although the above figures represent only a small proportion of the lepers in the country, they show a considerable advance as compared with one or two years ago.

Leprosy Work in Nyasaland.

REPORT ON LOUDON LEPER COLONY, 1928.*

By W. Y. Turner, M.A., M.B., Ch.B., D.T.M.

During the year three new in-patients were admitted, and one new out-patient applied for treatment. The total number of in-patients is sixteen, of whom seven are at present at their villages. Six out-patients attend for treatment, five women and one boy who now shows no lesions and is allowed to live with his mother. So far we have no accommodation for women in-patients, no application having been made for such.

The inmates of the camp number ten or twelve as a rule, the number fluctuating with leave granted to patients so far improved as to be non-infective and permitted to go home for a period.

All our patients show great improvement under treatment, some half-a-dozen are at present ready for investigation with a view to discharge if repeated examination proves negative for the Lepra bacillus.

Treatment: "Alepol" has now been adopted for injection in place of "Moogrol" or "Hydnocreol." It appears to be equally effective and to provoke less pain and swelling at the site of injection.

Each patient is examined for intestinal parasites and treated for these and other concurrent diseases. Where necessary general tonics are exhibited with beneficial effect.

The diet consists of the usual ration of native flour, beans, salt, etc. In addition skimmed milk is provided daily; this the patients mix with a portion of their ration of flour to make a gruel, Meat and green vegetables are given as occasion offers, and the patients get the benefit of a good deal of fresh fruit grown on the station.

Exercise: The patients are encouraged to work, and are paid for their labour. The work is mainly with the hoe, and consists of keeping the station premises clean, weeding and the like—digging pits for timber planting, and tending the young trees. There is no question that this work has a decided effect on their health. One or two refused to do anything, and remained in poor condition; of these one committed suicide in the early part of the year. No reason for this act could be

*Note.—The Leper Colony referred to is being conducted by the Staff of The United Free Church of Scotland Mission at Loudon.

found except that he seemed always to be moping and bemoaning his condition—a marked contrast to the others, who are usually happily singing hymns in their off time !

The Expenditure for 1928 has been as follows :—

Salaries : £12 8s. 6d. (recoverable from Nyasaland Government).

Running expenses : £12 15s. 10d. ; this low figure is accounted for by the fact that the patients buy most of their own clothing with the pay they get for their work.

Fees from patients amounted to 8s.

The brick dispensary and ward under construction could not be finished before the rains, but will be completed next building season. It is of special construction, roofed completely by brick arches, which prevents the accumulation of vermin to which thatch is liable. The patients, however, will continue to be housed in ordinary native huts which will be burnt from time to time.

Staff : At present we have no hospital assistant. The staff consists of Doctor, Nurse, one student, one woman who acts as cook, and sterilises the needles, etc., and another who pounds flour, etc. Treatment of minor sores, etc., is done as part of the work of the general hospital, which reduces the running expenses as shown above.

Success in Nyasaland.

Dr. H. A. Erickson, of the Hospital for Lepers, Malamulo, Nyasaland, writes :—

> " We are treating 105 patients now. We discharged eleven patients this month ; each of these patients were given Potassium Iodide for two weeks previous to the examination and then a skin clip and nose smear was made three times, a month apart. So as far as we know they are free from all infection. I ordered them to report every three months for examination."

In another letter there is this further news :—

> " You will be very interested to know that the Malamulo Colony recently discharged eleven more patients, who have been pronounced cured. This makes a total of about 25 who have been discharged from this colony since it began to operate. I think that is a fairly good record considering the obstinacy of this disease."

Leprosy Relief in Cyprus.

By Robert G. Cochrane, M.D., M.R.C.P., D.T.M. & H.

Cyprus is the largest island situated in the Eastern Mediterranean. Its position is some sixty miles West of the Syrian Coast, and forty-six miles South of the coast of Asia Minor. The island has an average length of 140 miles and a breadth of forty-five miles. The population of Cyprus is about 300,000; of these two-thirds are Greeks and the remaining third are Turks. The island really consists of a fertile plain running between two mountain ranges, the Southern and Northern littoral ranges. The Southern group of mountains is known as the Olympics, and the highest mountain in this range is Troödos, which is about 6,400-ft. The Northern group of mountains is divided into two ranges, the Eastern and the Western; the latter, the Kyrenic Range, separates the plains from the beautiful and picturesque town of Kyrenia.

The history of the island is full of interest. The Phœnicians seem to have been the first people to colonize it. The island then passed into the hands of Egyptians and Persians, and finally in B.C. 58 became a Roman province. During the rule of the Byzantine Emperors it was the seat of an Archbishropric. From this time onwards began the Turkish bid for supremacy. In the Crusades the island again became prominent, and Richard Cœur de Lion made Limassol one of his bases. Cyprus finally passed into Turkish hands in A.D. 1570, and remained under Ottoman rule for three centuries. In 1878 the British gained controlling interest and a High Commissioner was appointed. After the War Cyprus was proclaimed a colony, and all payments by Britain to Turkey were discontinued.

In a country which has always been in close contact with the Palestinian coast, and has had trade connections with Egypt, it is not surprising that diseases which are common to the mainland have also gained a footing here. Bilharzia, the scourge of Egypt, has been discovered in one area of the island. Malaria is very prevalent in the plains, and leprosy has existed for many decades. The Government has recently taken a keen interest in the leper problem, and it was in this connection that the writer was asked to visit the island in order to help.

The work for lepers in the island is centred in the Leper Farm at Nicosia, which consists of the Farm, or Colony proper, and the Leper Hospital. The patients are permitted to live with as great freedom

as safety allows. The hospital provides accommodation for cases which are ill, or have bad ulcers. These are extremely well cared for by the Sister-in-Charge, who has only recently arrrived, and has already made her influence felt in a remarkable manner. The efficiency of the hospital is mainly due to her enthusiastic personality. The District Medical Officer at Nicosia is in medical charge of the Colony, and is very anxious to do all that is possible to uplift and help the patients. The best available treatment is being carried out, the whole farm is being conducted on sound lines, and compares favourably with any of the better types of institutions seen in the East.

At present the only method for controlling leprosy is one of compulsory segregation. When one realises that almost all the cases are of the infectious skin type, and have been in such a state from one to three years before isolation, it can be readily understood that this system has not been an unqualified success. Considering the number of lepers in Cyprus is probably under 200 it ought not to be a difficult matter to bring the problem under control. So far Government have not moved further than segregating known cases of leprosy, and no effort has yet been made to search for foci of the disease, or persuade early cases to come for treatment.

The day for rigid compulsory segregation is, or should be, past. In a highly civilized community, with a limited number of lepers, some sort of compulsion is probably necessary in order to isolate infective cases efficiently, but this compulsion should only be exerted on those cases who cannot isolate themselves properly, or who refuse treatment.

In any scheme for combating leprosy it is essential that the public, and especially the medical men, should be educated to an intelligent understanding of the disease. For this purpose some responsible Medical Officer should be sent to India to study the methods of leprosy treatment and prevention. On his return he should be made responsible for organising a campaign based on the training of medical men, treatment and propaganda. If the island were surveyed and certain foci of the disease found, then this anti-leprosy campaign could be chiefly concentrated on these areas. The system of compulsory segregation should be replaced by one of notification similar to the one devised at home for venereal disease. All cases that are non-infective, or mildly infective and have sufficient means of isolating themselves in their own homes, should receive treatment at suitable outdoor centres. Those cases who either refuse treatment, or else are infectious, and have no facilities for isolating themselves, would have to be transferred to the Nicosia Leprosy Hospital until such time as they became non-infective.

Until some measure is devised whereby the early cases are treated apart from leper institutions, and are not subjected to compulsory segregation, control of the disease will be extremely difficult, if not impossible. No anti-leprosy scheme is complete without the hospital, colony and out-patient clinic, all linked up with a system of training medical men and the general public. Cyprus is only a small island and has a civilised people and an efficient government, and leprosy should not remain in its midst. Therefore, with such a plan as outlined above it should be possible to control leprosy, if not completely eradicate it from the island in a decade or two. The renewed efforts which the Government are, and will be making, are sure to be watched with keen interest by all leprosy workers, because as yet no country has demonstrated the possibility of eliminating this menace.

Leprosy Work in the Philippine Islands.

THE LEONARD WOOD MEMORIAL FUND.

AMERICAN GENEROSITY.

President Hoover has approved the Leonard Wood Memorial for the Eradication of Leprosy, in a letter to Secretary of State Stimson, honorary chairman of the memorial, in connection with the plan to observe May 1 as Philippine Day. On that date an effort will be made to complete the raising of a $2,000,000 fund to be used to wipe out the disease in the islands.

Mr. Hoover's letter follows :—

" I wish to express my sympathetic interest in the Leonard Wood Memorial for the Eradication of Leprosy, and to commend this great humanitarian effort now being made in the Philippines by your organization. The accomplishment of the aim of the Leonard Wood Memorial is in the highest degree commendable, and is not only a fitting monument to one of our noblest citizens but is a means of expressing a spirit of real helpfulness toward the Filipino people and eventually to the world, through the eradication of the ravages of this dread disease."

Over $1,000,000 of the fund already has been contributed, and the money will be spent for the erection of hospitals and laboratories under the plans formulated by General Wood before his death. On May 1 nearly 200 cities have signified their intentions of co-operating in the drive to raise the remaining amount.

—(*The New York Herald Tribune.*)

An Indian Leper Settlement.

THE LADY WILLINGDON LEPER SETTLEMENT, CHINGLEPUT, S. INDIA.

By ROBERT S. DONALDSON, M.A., M.B., Ch.B., D.T.M.,
Medical Officer-in-Charge.

The Treatment of Leprosy.

In considering the treatment for leprosy being adopted at the Lady Willingdon Leper Settlement, I intend confining my attention to the use of Hydnocarpus Wightiana oil and its derivatives, Potassium Iodide, the drugs used for controlling leprotic reactions, and Avenyl for the treatment of associated syphilis. The treatment of leprotic eyes, true leprotic ulcers, perforating ulcers, nerve abscess and any other lesions directly due to the disease must all have their place in any scheme of treatment but I do not propose dealing with them in this article.

At the outset let me mention that before any treatment is begun at all each patient must be thoroughly examined for any other disease which may be present and if any such be found he ought to be treated rigorously for it. The more one works among lepers the more one realises the absolute necessity for such a procedure.

When the work was begun at the Settlement in 1925 the first form of treatment adopted was the subcutaneous injection of the Ethyl Esters of Hydnocarpus Wightiana oil with the addition of 4 per cent. doubly distilled creosote, commencing with 0·5 cc. and increasing at each injection by 0·5 cc. until 10 cc. were reached. Later we began the injection of pure Hydnocarpus Wightiana oil as it had been stated that the latter was as effective as the Esters and was considerably cheaper. The patients complained of more pain under this form of treatment than with Esters, but it was found that much of the pain was due to lack of sufficient exercise. Our experience confirms the general view that under Hydnocarpus oil treatment for leprosy, perhaps one ought to say under any form of treatment of leprosy, exercise and activity are vital factors. The patients most responsive to treatment are they who are leading energetic lives. Every patient certified as fit for it, is now required to do two hours light manual work per day.

After a thorough trial of the pure oil I have returned to the Esters because in my experience they give quicker and better results. They seem to be more active than the oil alone and to bring about a more rapid clinical improvement. In cases of nephritis, however, or suspected nephritis, and in cases which show a tendency to react severely and easily, the oil is safer than the Esters.

When using the Esters I begin with a mixture containing 50 cc. Esters, 50 cc. Olive oil (fatty acid free), and 4 ccs. doubly distilled Creosote, called E. After a course of this, strengthen the mixture, giving 75 cc. of the Esters, 25 cc. of Olive oil, and 4 ccs. of Creosote, called E1. Finally I go on to a mixture containing 100 ccs. of the Esters and 4 ccs. of Creosote, called E2. I have found that when using either the pure oil or the Ester in any strength it is quite safe in most cases to increase at each injection by 1 cc.

Although I prefer Esters to any other form of treatment at present, owing to the pain of a prolonged course of subcutaneous injections, for some time past I have been giving a course of intravenous injections of Alepol at certain stages. A 1 per cent. solution is used, beginning at 1 cc., increasing at each injection by 1 cc. until 10 ccs. are reached, and continuing at 10 ccs. for 10 injections. This intravenous treatment is not nearly so painful as the constant subcutaneous method and gives the patient a rest. The drug gives good results, but I consider the Esters give better. Not only so, but even by Muir's method of mixing blood with the solution before injection, although this has certainly solved the difficulty to a large extent, in some cases the veins become blocked during prolonged treatment. Such a blocking in the case of leprosy is a distinct disadvantage for two reasons: (1) Should the patient get a reaction, it is difficult to administer intravenous injections of Antimony which is an excellent drug for controlling leprotic reactions. (2) If one wants to perform a Wassermann reaction or Kahn test it is difficult to get the blood. For these reasons, once I have reached ten injections of 10 ccs. of Alepol or, when the veins have become blocked, I revert to E1 beginning at 2 ccs. and continuing as before through E1, E2, and then on again to Alepol until the patient's treatment is complete.

I find the combination of Hydnocarpus oil, Esters in their various strengths, and Alepol, quite a good method of treatment, and I append a simple table showing the grading. Even when Potassium Iodide is part of the treatment, this method suits quite well, the patients of course in this case getting only one injection per week.

For a little over a year now I have been using Potassium Iodide and have now decided to use it as part of the treatment in selected cases. I say selected, because if given indiscriminately it can do much more harm than good. If there is the slightest suspicion of tuberculosis one

must not give it and if it is given to B2 or B3 cases it must be done with the greatest caution, for some of the reactions produced are alarming. However, it is doing good and in my opinion it has come to stay. After noting its effects carefully I have drawn up a graded dosage suitable for each type of case. One must begin with small doses of the Iodide and increase gradually according to the tolerance of the patient. It is wise to begin with one grain per day and increase by one grain per day so long as there is no rise of temperature. It is often possible to begin with 5 grains or even more and to increase much more rapidly. If the patient shows the slightest sign of lung trouble, or if the reactions become too numerous, or too severe, I stop Iodide altogether and begin him on twice a week injections. It is really only by testing the drug for oneself that a knowledge of administering it to its full advantage can be gained and I consider it is well worth the trouble. Not only do I see its results but the patients are constantly speaking of how well they feel and how their disease is responding to it. My grading of dosage is based on that outlined by Muir and I have also drawn out a table for children. Anyone who wishes these guides to dosage may have them from me if they wish. While under Iodide treatment, the patients receive one injection per week of the Ethyl Esters, or Hydnocarpus oil, or Alepol, or Avenyl in oil, as the case may be.

For the treatment of reactions three drugs are in use at the Settlement, *viz.*, Potassium Antimony Tartrate, Adrenalin 1 in 1,000 (P. D. & Co.) and Ephedrine Sulphate.

Whether it be a skin reaction or a nerve reaction the intravenous injection of P. A. T. is most efficacious. It brings down the temperature and causes subsidence of the nodules or infiltrated areas in a short time. It is obtainable in tablet form, each 0.04 gramme. Begin with one tablet and increase by half a tablet every second day until two and a half tablets or 0·1 gramme has been given. This is regarded as one course. Should the patient not have responded satisfactorily to this first course it is better to wait three days before commencing a second course.

If there is much pain connected with the reaction—and this is chiefly so in purely nerve cases—the subcutaneous injection of 2 to 4 minims of Adrenalin 1 in 1,000 (P. D. & Co.) in 30 minims of saline often acts like magic in dispelling the pain. Lately we have been using Ephedrine Sulphate in the form of pulvules as suggested by Muir. The dose is 0·05 grammes. In many cases the pain disappears within fifteen minutes. If after an hour no improvement has resulted from the first dose give a second, and usually the patient will have relief for twenty-four hours and in many instances there will be no return of pain at all until another reaction sets in, when the treatment can be repeated.

Especially since the introduction of Potassium Iodide, where reactions and pains are produced much oftener and where the severity of the pain is greater, those three drugs just described are a very essential and a very excellent part of the equipment of the person treating leprosy. They help one in a marked degree to continue the treatment with very little interruption.

In the treatment of Syphilis in lepers we are getting good results from the use of Avenyl. A 0·25 per cent. solution of the drug dissolved in Hydnocarpus Wightiana oil or Esters, with 4 per cent. doubly distilled creosote added, is used. It has the advantage that it enables one to continue the treatment for Syphilis without interrupting the purely anti-leprosy treatment. I am now using it in all cases with a positive W.R. or a positive Kahn. Every patient for active treatment has his blood tested and if found positive is at once started on Avenyl. About 55 per cent. of our patients have positive bloods and so the value of such a drug can be appreciated. For any cases which may prove refractory to this drug, Sulpharsenol may be used, but my experience is that there are lepers who seem to prove refractory to any form of anti-syphilitic treatment and Avenyl is the best all-round drug for use. The course adopted at first consisted of fifteen injections, increasing at each injection by 0·5 cc. until 7·5 cc. were reached. I find, however, that it is quite safe to increase by 1 cc. at each injection and now I give from 1 cc. to 10 ccs. increasing by 1 cc. each time. This course can be repeated as often as necessary until the blood becomes negative. In the second and succeeding courses, if required, one may begin at 4 ccs. and increase to 10 ccs. Since the drug is dissolved in the Hydnocarpus oil no time is lost in treatment. In fact, the patients show great all-round improvement while on Avenyl in oil.

Course.	*Drug.*	*ccs.*
1st Course	E.	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
2nd Course.	E1.	2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
3rd Course.	E2.	2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
4th Course.	Alepol 1 per cent. solution (intravenous)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
5th Course.	E1.	2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
6th Course.	E2.	2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
7th Course.	Alepol 1 per cent. solution (intravenous)	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, for 10 injections.
	E1.	
etc.	etc.	

POTASSIUM ANTIMONY TARTRATE COURSE.

P. A. T.	*Distilled Water.*
1 tablet (0·04 grammes) ...	2 ccs.
1½ tablets (0·06 grammes) ...	3 ccs.
2 tablets (0·08 grammes) ...	4 ccs.
2½ tablets (0·1 gramme) ...	5 ccs.

Grants for Leprosy Work.

The Executive Committee of The British Empire Leprosy Relief Association have recently made the following grants of money :—

	£
SUDAN.	
C.M.S. (Dr. K. G. Fraser) additional	100
TANGANYIKA.	
Universities Mission, Masasi	50
C.M.S., Makatapora	250
NORTHERN RHODESIA.	
Dutch Reformed Church Mission, Madzi Moyo	60
Seventh Day Adventist Mission, Mwami, additional ...	150
NYASALAND.	
Roman Catholic Mission, Mua (additional)	50
Roman Catholic Mission, Utale	150

These grants have been made for the provision of dispensaries, simple housing accommodation for lepers undergoing regular treatment, drugs, equipment, etc. Applications for financial aid will be sympathetically considered by the Committee, and full particulars should be sent to the Secretary.

Leprosy Work in India.

THE TRAINING OF DOCTORS AT DICHPALI

By J. Lowe, M.B., Ch.B.

In order to deal with the leprosy problem in any State or country one of the most essential things is the education of the medical profession in the diagnosis and treatment of leprosy. Until the present time leprosy has been regarded as an incurable disease in which the medical profession could do nothing. Consequently during his training, the average doctor received little or no instruction on the diagnosis and treatment of this disease, and now in countries like India where leprosy is so prevalent the medical practitioner even of high standing often knows very little about this subject. I have been amazed to see how many cases of leprosy are missed even by able doctors, and also how many cases are sent to me as leprosy in whom there is no leprous infection at all. Syphilis is the disease which in this country is most often mistaken for leprosy.

Now while this state of things exists, our efforts to control and finally to stamp out the disease of leprosy are likely to be seriously handicapped. A few leprosy specialists alone are not able to tackle the leprosy problem. They must be backed up by the whole of the medical profession, and this backing must be based on sound knowledge. How is this sound knowledge to be acquired ?

I would suggest the following as the most promising methods for the spread of knowledge through the rank and file of the medical profession.

(1) In every country where the disease is at all prevalent each medical school should appoint a lecturer in leprosy who should be a specialist in his subject and should by lectures and demonstrations give all the students the chance of acquiring a good general knowledge of leprosy. At least one question in the student's final examination should bear on this subject.

If this were done, the next generation of doctors would leave their training schools not only with the new knowledge of leprosy but also with a new outlook on the disease as one for which they as medical practitioners can do a great deal. The old outlook of the doctor on leprosy as incurable must be banished, and such lectureship should help greatly towards this end. Leprosy in many countries is one of the

commonest diseases and is responsible for an infinite amount of suffering. Any expense involved in establishing such lectureships would be amply repaid and it is imperative that at medical schools sound instruction on leprosy should be given.

(2) Where facilities exist, regular instruction courses should be held two or three times a year at which for a course of two or three weeks qualified medical practitioners receive thorough instruction in leprosy work. In India such courses have been instituted at the School of Tropical Medicine, Calcutta, and during the last year we at the Hospital for Lepers, Dichpali, Nizam's Dominions, have also held two such instruction courses. Of this work I will say more later.

(3) Those of us who are engaged in leprosy work should endeavour by every means at our disposal to interest other doctors in leprosy work. This is probably most easily done by working through the local medical Society where one exists. Papers on the diagnosis and treatment of leprosy given by one who really knows his subject usually command a good hearing and arouse interest, and although it is impossible to cover the whole ground in one or two evenings such papers are of great value in securing the co-operation of the local doctors and greatly help the work.

Through these three agencies wisely used it should in a few years be impossible for any medical man in a country where leprosy is prevalent to be as ignorant as some are now. The medical profession should be able to give their co-operation in the task of dealing with leprosy. Without this backing the task can never be accomplished.

Training Courses in Dichpali.

During 1928 we have held two courses for qualified medical men in the diagnosis and treatment of leprosy. The Course lasts for two weeks. The members live in a hostel built through the generosity of friends, a small daily allowance for messing is made and travelling expenses to and from Dichpali are paid. A grant from the Indian Council of the B.E.L.R. Association helps to meet these expenses.

Of the doctors attending the courses some have been Government medical officers sent by the medical department of H.E.H. The Nizam's Government, some have been members of the Staff of the large town hospitals, some have been doctors in the service of Missions.

As the standard of medical education is not very high, care has to be taken at the beginning of the course to make the instruction fairly elementary but this should not prevent a high standard being attained to the end of the course. The instruction is made as practical as possible every member being given repeated opportunity of diagnosing new patients and drawing charts, of making bacteriological examinations and of giving injections of all kinds.

Of text-books, " Leprosy " by Rogers and Muir is very good and full, but some portions notably " Pathology " and " Treatment " are now rather out of date.

" Six Technical Lectures on Leprosy " published by the Indian Council of B.E.L.R.A., is very good, and is more up-to-date, but it is only a small hand-book and is not full enough for such courses. We have used both these books and augmented them by typewritten notes.

SYLLABUS.

Lectures.

Clinical aspects of leprosy : Three lectures each followed by a demonstration.
Diagnosis and Prognosis followed by demonstration.
Treatment of leprosy : Four lectures and daily demonstrations.
Etiology of leprosy.
History and Epidemiology of leprosy.
Prophylaxis.
Bacteriology : followed by demonstration.
Pathology.
Organisation of leprosy work.

Additional Demonstrations.

Preparation of medicines for injection.
Giving of injections intravenous, intramuscular, and subcutaneous infiltration.
Iodide—sedimentation test in leprosy.
Kahn Test for syphilis.
Surgical treatment in leprosy.

Practical Work.

Examination of patients. Drawing of Charts.
Bacteriological examination of skin, nose, glands, etc.
Diagnosis of new cases.
Iodide sedimentation test.
Giving of injections of all kinds.

Tutorial Classes.

Two or three held during the course to clear up any points which any members of the class have not fully understood.
At the end of the course an Examination is held.

A recent Examination took the following form :—

EXAMINATION.

Written Paper.

Question 1. State what is meant by a B3 case of leprosy. Enumerate the lesions you might find in such a case. Describe the pathological changes found in any *one* of these lesions.

Question 2. A man comes to you, says he has been living in the same house as a leper and is afraid he has contracted the infection. He shows no obvious signs of leprosy. Describe in full detail how you would investigate such a case and make a diagnosis.

Question 3. Describe fully how you would administer Potassium Iodide —antimony treatment to a B1-B2 case.

Question 4. How would you organise an anti-leprosy campaign in a taluq of the Hyderabad State ?

Practical Examination.

Each candidate is allotted one patient. Examine the patient thoroughly. Draw a chart showing his condition. Write a brief report on what you find, make a diagnosis stating the grounds on which it is made. Make a prognosis and outline the treatment you would advise.

Oral Examination.

Each candidate is asked four questions on any branch of the subject of leprosy.

As a result of these courses several of the ex-members of the classes are now treating cases of leprosy and also are sending suitable cases for treatment to us. Two doctors are now in charge of leprosy clinics in the City. Interest has been aroused and knowledge has been spread. We intend to continue these courses possibly extending them to three weeks duration. We feel this work is of vital importance and will greatly help towards solving the leprosy problem in this State.

Literature.

The following publications have been issued by the Indian Council of The British Empire Leprosy Relief Association :—

Popular Lecture on Leprosy. This book is copiously illustrated, and has a set of slides corresponding to these illustrations. It has gone through two editions within the course of a year.

What the Public should know about Leprosy. This is another illustrated booklet, published in 1926, which has proved so popular that it has become necessary to publish it in ten different vernaculars of the country.

Six Technical Lectures. This book is illustrated with 105 pictures, which are also duplicated in coloured slides. The lectures are intended for doctors wishing to make a further study of leprosy and its special treatment.

A set of twelve illustrated posters, size 20-ins. × 30-ins., well mounted on brown paper, showing the different phases of the disease, its prevention and treatment.

All enquiries as to the supply of this literature should be addressed to The Hon. Secretary, Indian Council,

The British Empire Leprosy Relief Association,

South Block, New Delhi,

INDIA.

Leprosy Relief in Fiji.

THE CENTRAL LEPER HOSPITAL, MAKOGAI, FIJI ISLANDS.

By E. A. NEFF, M.D., L.C., of P. & S., Alberta
(Medical Superintendent).

The new appellation, " central," is the result of this Government's agreement, arrived at nearly four years ago, to accept, not only patients from this group of Islands, including Rotumna, but also patients from the Dominion of New Zealand, the Cook Island group, Tonga and Samoa. This resulted in the New Zealand Government's station, at Quail Island (near Wellington), being evacuated and the patients conveyed here, ex N.Z.G.S. *Hinemoa*, in August, 1925. Segregation centres in the Cook Islands and Ronga were similarly closed. Much building has been necessary to accommodate the extra patients —approximately 100—but the move has meant much to this institution both financially and through the added interest centred here. The prime mover in this policy was the Hon. Dr. A. Montague, Central Medical Authority and Chief Medical Officer, Fiji, and, in my opinion, all concerned now realize how wise a policy this has been.

The nativity of patients, as at the close of 1928, is of interest and varies little year by year. It is as follows :—

Race.	*Male.*	*Female.*	*Total.*
Europeans	5	—	5
Half-Castes	6	7	13
Fijians	78	40	118
Melanesians (Solomon Islands)	39	5	44
East Indians	91	32	123
Rotumans	4	3	7
Chinese	10	—	10
Samoan	6	5	11
Maori	2	—	2
Nuie Islanders	1	1	2
Cook Islanders	22	41	63
Tongans	5	6	11
Totals	269	140	409

Makogai is an island of some 2,000 acres lying eighteen miles north-east of Levuka, the old capital of Fiji. It is a rocky cone with four distinct, and many smaller, peaks, the highest being 876 feet above sea level. It is a delightful island with an agreeable climate, the tropical heat being tempered by the South-east trade winds. The island is entirely given up to leprosy work and, on account of its position,

absconding patients do not enter into the administrative problem. The staff, consisting of a Medical Superintendent an assistant Medical Officer, Lay Superintendent, Captain of the island vessel, Farm Overseer, Bakers, and forty native labourers, are situated at the farm, NaSau at the extreme southern end of the island and the patients at Dalice at the northern end. Patients are foridden, for obvious reasons, to pass the boundary a mile from NaSau. The Nursing staff consists of a Reverend Mother and twelve European Sisters of the French Order of Mary, as well as eight native nursing Sisters. They are housed at Dalice in a separate compound, quite apart from the patients.

With few exceptions, the lepers at Makogai are contented with their lot. They are housed comfortably in quarters which are always kept in repair and their immediate behaviour is in the hands of intelligent head-men of their own race. They receive prompt medical and surgical attention, excellent nursing, good food, and are, for the most part, burdened with no responsibility at all. Idleness is discouraged and apparent brooding over their disease is not allowed.

The men are kept busy in any way they desire, although all capable of it are required to spend one day a week at least on work directed towards the care and needs of the station. Otherwise they employ their time on public works (at a wage), furniture making, the building and sailing of model boats, fishing, gardening and various games—cricket, football, tennis, etc. The women do the laundry work for all the male patients as well as their own, and busy themselves as they would in their villages. Mat-making, weaving of native cloth, the making of hat and needle work, takes up much of their time. The fifty children of school age at present here attend school for a few hours each day, and then occupy their remaining time as children do the world over.

Our efforts to teach the essentials of personal hygiene are meeting with some success, and baths twice a day and clean clothes no longer, for the most part, need be talked about. The patients are required to retire each night at 9 p.m., unless special permission is obtained. An excellent picture show is given every Thursday evening. This regular life, and 90 per cent. of the patients live it, does much to assist treatment and, in my opinion, has much to do with the final results.

Patients capable of it are housed in villages—each race separately—and the villages are not composed of native houses, but of permanent wooden houses complete with bath-rooms and kitchens. Each house provides comfortable accommodation for four patients. Each of the principal villages has a commodious dressing-room, placed centrally, which an European Sister visits daily. Patients who require hospitalization are sent by her to a large central hospital where the necessary treatment is carried out. The villagers cultivate many and varied gardens, the surplus produce of which they sell to the government

for distribution to the hospital inmates. Some £40-£60 is thus monthly distributed among them. The sexes are kept apart, the women being housed in a compound in the hospital enclosure.

The hospital is well equipped and funds are never lacking for essentials. It consists of airy, well constructed, permanent wards to accommodate up to 200 patients, a detached isolation unit, detached operating and dressing rooms, a pharmacy, administration building, recreation block, and a well equipped laboratory with separate modern photographic dark-room and a large, pleasant room for storage of specific drugs and the manufacture of the ethyl esters. The large concrete verandah of this latter building was specially built for the administration of injections. Meals are supplied from a central kitchen to the wards and to large, permanent, open-air dining rooms in which patients capable of it, take their meals.

A patients' co-operative store, situated in the hospital compound, is managed by the Lay Superintendent and a Sister, on the patients' behalf, and from this nearly anything may be purchased. A small profit is made and accumulated profits are distributed to the patients at Christmas time. Money earned by the patients is directly reflected therein, the monthly turnover amounting to something over £200. A bank is maintained by the Reverend Mother, and in this there is always more than £1,000 on deposit. All accounts are " current."

The results of treatment are encouraging and improve year by year. This is due to many causes which space will not allow me to enumerate, but I might say we are assisted by the absence of serious co-existent disease. Hookworm and other intestinal parasites are present, but it is rare to find individuals heavily burdened. Syphilis is occasionally encountered, complicating the disease in the case of the Indians, but is yet to be found in the native islanders of the south Pacific. Yaws is very often seen, but readily yields to specific treatment. Malaria is unknown in the groups from which we draw patients.

It is good to note that we now, each year, receive more early cases of leprosy.

During 1928 the chief drugs used were :—

1. Alepol.
2. Sodium Gynocardate.
3. Ethyl Esters of Hydnocarpus Wightiana.
4. Ethyl Esters of " Dilo " oil (Calophyllum Bigator).

Potassium Iodide is also being tried but I do not yet feel justified in giving results.

In all, 376 patients received treatment during 1928, including 84 admitted during that year. Results, in types of the disease, are as follows:

Type.	*Improved.* %	*Stationary.* %	*Worse.* %
Maculo-Anæsthetic	77·26	18·18	4·52
Early Neural	74·20	16·13	9·67
Advanced Neural	42·11	44·74	13·15
Early Cutaneous	91·31	4·35	4·35
Mod. Advanced Cutaneous	79·55	9·09	11·35
Advanced Cutaneous	67·57	13·51	18·92
Early Mixed	74·29	14·29	11·42
Advanced Mixed	37·21	6·98	55·81

The "stationary" column suffers through containing those admitted during the year, and not yet showing definite enough improvement to be classified higher, and the "improved" through the 55 patients discharged not being classified therein.

All patients are required to take daily doses of raw chaulmoogra oil, by mouth, in addition to their injections.

I should just like to add, in connection with drugs, that to date Alepol and Sodium Gynocardate stand pre-eminent at Makogai in so far as results are concerned. Both are powerful therapeutic agents and the absence of serious, painful local reaction allows their continuous use. Out of 16,608 injections given during 1928, 12,412 were with these drugs and the results were splendid.

The patients are required, under the Provisional Discharge Ordinance, to be free for two years from active signs of the disease and all smears, during that time, must be negative for Mycobacterium Leprae.

Fifty-five have been passed by the medical board for discharge during 1928. This represents 14·7 per cent. of the above treatment group or 12·4 per cent. of the mean population of the hospital. Fifty-two of the above actually left the hospital during the year, and the remaining three await suitable transportation.

At the time of writing fifty-four patients are free from active lesions and remain bacteriologically negative, and these should be ready for discharge during the current year.

Fourteen years ago no hope could be given nor did a discharge ordinance exist, and the patients who arrived here were doomed to confinement for life.

Altogether the prospect of gradually but surely ridding these islands of leprosy seems bright, and one can honestly afford to feel optimistic. Early cases are coming forward, the patients are happy and hopeful through noticeable improvement of their disease, and, through their enthusiasm, altogether a different spirit, regarding leprosy, is being broadcast through all the Islands, to the distinct advantage of this hospital.

Motion-Pictures to Brighten Life of Leper Colony in Fiji Islands.

In all the world there is no more tragic figure than the leper. Throughout history we meet him, a lonely, forbidding creature, condemmed by man to live apart until death, moving at a maddeningly slow pace, breaks his sentence.

Men, for their own protection, have been forced to be cruel to the leper, not out of desire to be cruel, but because there was nothing left to do.

Lately, however, there has been an awakening interest in how to care for the leper. The first attempt, of course, has been to find a cure. The second is to find amusement, at least momentary relief for him.

Doctors are attending to the first. The motion-picture is meeting the requirements of the second. There are difficulties in the way of supplying pictures, however, for whatever goes into a leper colony must remain there. No booking of films is possible. The film once shown to lepers must not be shown elsewhere.

The motion-picture industry has for a long time recognised these facts and these needs. The late General Wood was one of the first to stress the importance of entertainment by films for lepers ; and while he was governor of the Philippines he laboured earnestly to make the leper's lot easier.

The matter was brought to the attention of Mr. Hays, and the members of the Motion-Picture Producers and Distributors of America were advised of the needs of the lepers. Generous responses were made, and for several years now films have been shipped regularly—as outright gifts—to the lepers.

A few months ago prints of thirty-one separate pictures were donated by several member companies and shipped aboard the S.S. *Benholm* for use in the leper colonies at Makogai and Makadraga, in Fiji. The films will be taken off at Suva, the only port in Fiji where the steamer touches, and from there will be transported to the leper islands and turned over to Dr. E. Aubrey Neff, medical director.—*The Motion Picture*.

Leprosy in Europe.

By The Rev. JUSTIN E. ABBOTT, D.D.

No. 8.—LEPROSY IN WESTERN EUROPE.

My visits to the countries of Western Europe, to acquaint myself with their leper problems, have been at intervals, including 1922 and 1926. This survey has to do with Iceland (not visited), Denmark, Holland, Belgium, France, Spain (not visited), Portugal and England.

ICELAND.

Leprosy has been endemic in Iceland for many centuries, showing the disease is no respecter of race or climate. In 1896 Dr. Ehlers of Copenhagen estimated the number of lepers on that island to be 226. In 1920 the number had fallen to 67. Of the number to-day I have no reliable estimate.

Iceland's policy regarding leprosy has been a vacillating one, through following conflicting advice. What their present policy may be I do not know.

DENMARK.

When visiting Denmark in 1923 I learned that there was but one known case of leprosy in that State. The patient was in one of the hospitals in Copenhagen.

HOLLAND.

While there is no endemic leprosy in Holland, the connection of that country with the Orient is so close that it cannot be difficult for lepers to enter by the sea ports. When visiting Holland in 1923 I was told that there were no known cases of leprosy. Yet in 1925 I learned there were four cases in hospitals and nine in their homes.

BELGIUM.

The foregoing observations regarding Holland apply to Belgium. I heard of no known cases of leprosy in that State, but it would not be difficult to believe that some lepers might be discovered among those who have entered her sea ports.

FRANCE.

France for many centuries has had leprosy in her Maritime Alps, in Southern France, and elsewhere. A great diminution has taken place in these endemic cases. But lepers in France are numerous, because for various reasons they are drawn to that country from her colonial possessions, and from South America, especially from Brazil and Argentina. France, however, has as yet taken no census of her leper population, and all estimates of their number are mere guesses,

that range from about 500 to 1,500. Paris alone is believed to have some 300 lepers.

France has done very little for the lepers found in her borders. I went to see that little in the Hospital of St. Louis in Paris. Clothed in a doctor's white robe I was taken to the wards devoted to venereal diseases. Here in little rooms, or rather cells, two lepers in a room, were six lepers. The rooms were clean and bright, but their environment of diseased and mutilated humanity was a distressing sight. The other lepers of Paris are free to walk her streets. There are lepers in Paris who can afford private treatment, and are receiving it. Up to 1926 I heard of no special Government or private effort to minister to this suffering class of human beings.

In contrast with this feeble Governmental effort to care for the lepers in France should be mentioned that of the organisation recently formed, called the Association de secours aux victimes des Maladies Tropicales, which on the 18th of August, 1926, purchased an old monastery in Southern France, known as La Chartreuse de Valbonne, with the purpose of making it a Home for lepers of France. It has required time and money to put in proper repair the mass of buildings that cover about six acres, and to fit them for the purpose for which they were bought. It is hoped however, that the opening may soon take place, and lepers be admitted to enjoy the care of sympathetic friends, amid most beautiful natural surroundings of hills and forest. Mr. and Mrs. Delord, he being Secretary of the Comite de Secours aux Lepreux, were instrumental in the discovery of this wonderful place and in bringing to a successful end the long drawn out process of purchase. I spent ten days in this newly bought monastery, in the family of Mr. and Mrs. Delord, and was filled with admiration for them as I saw their efficiency in handling so large an enterprise. In connection with this monastery, founded in 1203, there are 125 fertile acres. They had long been neglected but Mr. Delord has rapidly brought them back into cultivation. Repairs have been made, and the modifications necessary for sanitation and comfort have been carried out with such speed as the benefactions of friends of lepers have allowed. When this ancient monastery is opened to the lepers it will be the most beautiful Home, and the happiest of retreats that can be imagined.

Spain.

I was unable to visit Spain. That there are many lepers in Spain is well known, but no census having as yet been taken their number is not known. The figures given me at Geneva in 1925 were as follows :—

Lepers in hospitals	...	...	228
Other lepers	...	...	351
			579

Portugal.

Through the courtesy of the Public Health Department at Lisbon, arrangements were made for me to visit the leper wards connected with the large hospital in the suburbs of the city. The physician in charge of the lepers took me through the two wards, one for leper men the other for leper women, both wards being situated in the group of wards assigned to contagious diseases. The wards were as clean and bright as could be asked for, and judging from the reception given to the doctor, he was of the sympathetic kind that created an affectionate regard in the hearts of the lepers, but it was for those twenty-four unfortunate beings a life-long prison without joy or hope.

The number of lepers in Portugal is not known. A conservative estimate places the figure at 200. On account of the close relation between Portugal and Brazil, the latter country furnishes Portugal with the larger number of her lepers.

Plans were shown me in the Public Health Department for the building of three leper homes in northern, central, and southern Portugal.

England.

From Sir Leonard Rogers I learned that he estimated the number of lepers in England to be about one-hundred. Some of these were being cared for in two small leper Homes. Some were receiving private treatment, Considering that England has such close relation with the countries of the Orient, and Africa, where leprosy is so prevalent, it is a matter of surprise that there are not more lepers on English soil.

Summary.

Using figures that are mere estimates, and yet believed to be conservative, the number of lepers in Western Europe are as follows :—

Lepers in	Iceland	67
	Denmark	—
	Holand	18
	France	700
	Belgium	—
	Spain	579
	Portugal	200
	England	100
		1,659

Summary for Europe.

While the estimate of lepers in Europe is manifestly incomplete, owing to the fact that many countries have taken no census of their leper population, yet the figures given below represent a conservative

estimate for the year 1926. Although only an estimate it is however, impressive enough to deserve the attention of all the European countries of the League of Nations, and of all interested in freeing this world of its terrible disease :—

Lepers in Baltic countries :			
	Norway	130	
	Sweden	32	
	Finland	75	
	Esthonia	226	
	Latvia	210	
	Lithuania	21	
	Germany	8	
		——	702
Lepers in Central and Southern Europe :			
	Poland	—	
	Austria	—	
	Hungary	—	
	Czechoslovakia ...	—	
	Yugoslavia ...	84	
	Italy	226	
	Switzerland ...	25	
		——	335
Incomplete estimates :			
	Crete	400	
	Cyprus	250	
	Malta	249	
	Rumania	338	
	Bulgaria	?	
	Greece	?	
	Albania	?	
		——	1,237
Lepers in Western Europe, as estimated :			
	Iceland	67	
	Denmark	—	
	Holland	13	
	Belgium	—	
	France	700	
	Spain	579	
	Portugal	200	
	England	100	
		——	1,659
Lepers in European Russia in 1918 ...			1,709
			——

Estimated number of lepers in 1926	...	5,642
Not included in the above	... ...	358
Total number of lepers in Europe in 1926		6,000

As the above figures omit estimates for Bulgaria, Greece and Albania, where leprosy is known to be prevalent, as also Turkey in Europe, and islands of the Mediterranean, not mentioned above, 6,000 may be considered as a conservative, but a sad and impressive figure, representaing the total number of lepers in Europe.

In the three articles I have written on Leprosy in Europe, I have made it plain that there are countries that do little or nothing for their lepers, others are making provision for them, but not taking advantage of the best methods of dealing with them Of none can it be truly said that their leper policy is wholly satisfactory.

Encouraging News.

PROGRESS IN THE ANGLO-EGYPTIAN SUDAN.

Dr. K. G. Fraser of the C.M.S. Hospital, Amadi, White Nile, S. Sudan, writes as follows :—

> " You will be glad to hear that since opening the Leper Camp in May, 1926, I have discharged in all 17. They are still under observation and may of course, require more treatment, but it is altogether very encouraging."

The Anti-Leprosy Campaign in Nigeria.

By T. F. G. Mayer, M.R.C.S., L.R.C.P.

I.—General Conditions.

Nigeria is a country just about three times the size of England, Scotland and Ireland. The population numbers nineteen million and is unevenly distributed ; the distribution ranging from eighteen to over three hundred to the square mile.

Nigeria contains the largest town in all Africa. The people are divided into numberless tribes speaking many different languages with differing manners and customs, religions, diet and so on.

The climate of Nigeria in the North is hot and dry with a short rainy season, a brief harvest season and a long period of drought. It is liable to famine if consecutive rainy seasons fail.

The southern part has a long rainy season, a long farming season, with a greater variety of crops and a short dry season.

One large portion of Nigeria must be mentioned as containing peculiar conditions—the Niger delta. This vast area is about the size of Southern England. It is composed of islands of mud on which nothing grows except the mangroove tree. The people go about from place to place in canoes and practically live on fish and what other food they can exchange for fish. This country is a veritable maze. It has not yet all been explored or mapped.

Politically, Nigeria is divided into the Northern and Southern Provinces, each division being subdivided again unequally into eleven Provinces each.

Decentralisation—except as regards medical work—has separated these Provinces into separate units, connected together through a Secretariat for the Northern Provinces, another for the Southen Provinces and a General Secretariat uniting both.

A consideration of this Political organisation has a bearing on the campaign against leprosy. The country is ruled chiefly through Native Administrations the aim being to help Native Chiefs to set their own house in order, to enable them to govern, to develop their own country and to manage their own finances under the help, advice and control of the Resident of each Province.

II.—The Distribution of Leprosy in Nigeria.

Leprosy is by no means evenly distributed over the country or even amongst its people. A large area occupied by the Yoruba people

is almost exempt while there is no doubt that certain areas are heavily infected including the two most populous Provinces in the Country.

The reasons for this peculiar distribution are suspected but have not yet been worked out. Ancient customs, attitude to the disease, habits, diet and prevalent disease all have their bearing on the problem.

The number of lepers in Nigeria is not known. The usual figure —which is of the nature of a guess—is given as 90,000, but at the very lowest estimate there cannot be fewer than 66,000 and might be five or six times this number.

Many of these lepers are scattered in districts that have only recently been opened up, but motor roads, railways and shipping are every year allowing more and more people to move about further and further from their homes and to mix more freely with one another.

From the foregoing it will be gathered that the problem of relief is no light or easy one to solve and so far, all that can be said is that a beginning has been made.

III.—The Methods Adopted are the Following :—

A memorandum on the methods adopted by Rogers and Muir in India has been printed by the Nigerian Government under the title " Leprosy Relief Work " and has been circulated to all medical men, to the heads of all Missionary bodies and to the Senior Political Officers.

This brochure has been supplemented by other literature supplied by The British Leprosy Empire Relief Association chiefly by " Leprosy Notes " of which fifty copies are distributed to those known actually to be treating lepers.

It is hoped—and indeed the hopes are being realised—that by this means more or less uniform methods of dealing with the disease have been established throughout the country, that Political and other officers may be able to spread the knowledge of the latest ideas and methods among the people under their control chiefly through the agency of the Native Administrations.

A large supply of the special drugs used in leprosy has been obtained through the generosity of the Nigerian Government and these are being issued on demand at cost price to the Native Administrations asking for them.

Hydnocarpus oil has been obtained in bulk from India and is bottled locally by a Soda Water Factory at a nominal charge. It is hoped that, from this oil, Sodium Hydnocarpate may be manufactured locally by the highly trained chemists of a local soap factory. Experiments, with this end in view, are in progress, which, if successful, will mean that these two most important drugs will be obtainable at about one-tenth of the usual cost.

It is intended, in the first instance, to select, as far as possible for treatment, the early cases, those coming from the district round, to out-patient clinics, and in those instances where they come from far land is being provided on which they can build and farm.

A great effort is being made to engender a spirit of self-help and support and to keep those who come for treatment busy and to prevent them as far as possible from degenerating into mendicancy.

IV.—Difficulties.

The chief difficulty is the shortage of medical men, especially in the Government service. This shortage is inexplicable, for the Service is a magnificent one, it is well paid, the chances of promotion are good, the health of the colony has improved out of all recognition and it is only a fortnight distant from England; but the difficulty remains nevertheless and is being overcome chiefly through the enthusiasm of missionaries, both medical and lay, to take up the work. The work is usually started with one case and gradually grows by the momentum of its own results at an ever increasing speed.

Unfortunately certain highly infected areas are closed to missionary effort but means of dealing with these are under consideration.

Under a scheme of decentralisation, it is necessary to devise a separate scheme of relief for each Province and owing to the isolation of certain tribes in a Province—due to different religion, habits, customs and so on—it is often even necessary to sub-divide the system of relief again to meet these various requirements. As will be seen immediately this system has its advantages as well as its disadvantages.

It may be said generally that the people are most averse to being moved from one locality to another. This obtains especially in localities that have been more recently opened up.

Perhaps the greatest difficulty of all is the question of the children. Most natives do not wish to entrust their children to any one else. This is not to be wondered at for they do not consider that they will be properly looked after by foster-parents and they are often afraid of losing sight of them altogether.

V.—Various conditions that Help on the Work.

Chief among these must be placed the enthusiasm of the Native Administrations. This is not to be wondered at when Government suddenly announces its intention to deal with a disease which has from time immemorial always been regarded, universally, as hopeless.

The prospect of relief is welcomed and the attitude of a Native Administration to a Government disinterested enough to introduce these facilities can be understood. At first there is a feeling of incredulity

which develops more and more into gratitude. It cannot be regarded by them but as a magnificent and disinterested gesture of good-will.

The Native Administrations are generally both able and willing to pay for the drugs supplied to those taking up the work in their respective areas and this is a very great help to the local branch of this Association, for it means that the stock of drugs can be continually replenished without coming down on Government for any more funds for the purpose.

Missionary bodies throughout Nigeria are keenly alive to the opportunities for doing good that are being placed in their hands. Many begin the work tentatively and find that it grows up naturally. Needless to say their help is invaluable, and, as regards the care of native children, they perhaps are better able to organise and develop this side of the work than public and Government bodies.

Last but not least one must mention the Government Medical Department. This magnificient Service is already overburdened with work involving the treatment of not only a large number of cases of a countless variety of diseases, of the care of Government officials —European and Native—including Native clerks, soldiers, police, prisoners, and so on, but also with a large amount of the necessary clerical work.

Individual Medical Officers take up the work because of its inherent interest and besides this there are in certain places Government Leper Hospitals under the charge of the Station Medical Officer. This side of the work is also increasing in importance every day.

VI.—The Work hitherto Accomplished.

The Medical men in Nigeria—as a whole—are as up-to-date in their knowledge of leprosy and how to deal with it as those in any other part of the world. The distribution of leprosy in Nigeria is known more accurately than the distribution of any other tropical disease.

There is an endless supply of the necessary special drugs for the treatment of leprosy.

Centres where lepers are under treatment according to modern methods are springing up all over the country as individual medical men and others take up the work. Already 2,600 lepers are under regular treatment and the number grows daily.

The Medical Department, the Political Officers, the Missions and the Native Administrations are all equally enthusiastic that the work shall go forward and are all working together harmoniously to the common end.

VII.—The Outlook.

Enough has been said to show that the work is proceeding along sound business lines. It is bound to grow with ever increasing speed. The great difficulty will be to stop rushes for treatment to certain places and this can only be overcome by the establishment of treatment centres in as many places as possible.

Leprosy Relief Work in Japan.

PROPOSED FORMATION OF NEW ASSOCIATION.

A Conference of those interested in leprosy work in Japan was recently held in April in Osaka. It was pointed out that there is great need for more active measures to be taken to provide for the very large number of lepers to be found in Japan. It was gratefully recognized that the Japanese Government has made laudable efforts in Japan, Korea and Formosa in the direction of maintaining its own institutions for lepers, and in making liberal grants to others who are also carrying on work for lepers.

At a public meeting it was decided that a " Japanese Leprosy Prevention Association " should be formed, and the following Resolutions were adopted :—

1. An Association for the prevention of leprosy should be organized.
2. Leper villages should be founded and a campaign should be launched for its speedy realization.
3. Founding of an institution for research work of leprosy should be endorsed.
4. Petition should be made to the competent authorities to revise the school text-books to the effect that communicability of leprosy and the dangers thereof should be duly emphasized.
5. Anti-leprosy Act should be amended by the Government. Where the head of the family suffers from leprosy Government aid should be given.
6. Efficiency of the institutions for lepers should be increased.
7. Necessary provision should be made to segregate the children exposed to leprosy.
8. Government subsidy should be granted to private agencies for the lepers.

It was agreed that the above Resolutions should be presented to the Government Authorities, and it is hoped that sufficient financial support will be forthcoming to enable this much needed Association to be formed.

Garden Farm and Dairy for a Leper Asylum.

By SAM HIGGINBOTTOM, M.A., B.Sc., D. Philan. (Hon. Supt., Naini Leper Asylum, India).

When I was first given charge of the Leper Asylum at Naini, each leper was fed, clothed, given medical attention and menial service for less than Rs. 4/- per mensem. They were hardly treated as human. There was nothing for them to do except look at themselves and their neighbours. The leper asylum at Naini was about as quarrelsome and unhappy a place as one could imagine. I decided to try gardening for the lepers, not so much for what they could get out of it, but to relieve the monotony of life. At first the lepers would not do anything ; they raised a thousand and one objections against work of any kind, but I persuaded them, gave them seed and water, and laid off small plots. I offered money prizes for the best gardens. Each leper was allowed to have for his own use all the produce of his garden. When the leper realized this last fact that whatever he grew was his own, gardening became popular. It made for better health and better social conditions in the asylum. Discipline was much easier. It prevented lepers from wandering about so much. It tended to anchor them. It also cost some money. Irrigation water was necessary for at least six months of the year. Seed and fertilizer were also necessary. For a number of years the Ladies' Garden Club of Princeton, New Jersey, has sent us a generous supply of garden and flower seeds. Lepers from all over India have been in the Naini asylum. They have brought vegetables from their homes and thus introduced several better varieties than anything local. After these gardens were well established, fruit trees especially guavas, mangoes, lemons, and oranges were set out and the lepers get the produce. Again the milk supply became a problem as the medical side of the work developed not only for the children, tainted and untainted, but also for the adult lepers, who were especially weak and ill. To-day the Naini Asylum owns a good herd of Sahiwal cows said by some authorities to be the best dairy breed in India.

The Agricultural Institute has imported bulls of the leading dairy breeds. The leper asylum herd has had the benefit of this and within a few years the asylum should have one of the best dairy herds in India. Murrah buffaloes also are kept. Every child between two and twelve years of age gets half a pint of milk each morning and evening. The doctor prescribes it for the Leper patients, and any

surplus is sold to the lepers at two annas a seer (a seer is equal to 2·2 pounds), which is about half the bazaar rate for bazaar milk. Frequently cheap skim milk is available. Then the children have it in addition to their whole milk ration. The Leper Asylum garden supplies them with fresh vegetables nearly every day in the year, though both the boys' and girls' homes have their own gardens. The boys' home has pure bred chickens and rabbits.

In addition to the gardens worked by the lepers for themselves, the asylum has a garden and orchards to supplement this supply, to provide for those unable to work gardens and for the children's homes. It farms about fifty acres of its own land and rents more than fifty acres besides. This grows grain for the lepers and fodder for the dairy herd and work oxen. There are two silos, each holds about 300 tons of silage, and both are filled each year. All the manure is carefully conserved. The latrine stuff is trenched. The land is gradually increasing in fertility. On some of it crops are regularly grown four or five times as large as were grown when the asylum took the land over. This farm is run at a profit.

The effect of garden, farm and dairy upon the lepers is all to the good ; it adds interest to life. For those lepers able to work, there is work at sowing time, for watching crops, and for harvesting, threshing and cleaning grain, herding the cattle, helping with cutting the silage. A leper is able to earn anywhere from ½ to 2 annas per day, depending upon his ability and pressure of work. This cash earned enables him to have a few luxuries that cannot be provided by the asylum authorities.

It costs time, effort, thought and money to provide this garden and dairy, but it is well worth all it costs in the enrichment of the physical, social, and spiritual life of the institution.

In Lighter Vein.

A SCHOOLGIRL'S ESSAY ON A LEOPARD.

" The Lerpard has on its body black spots which looks like round black soars. The people who catches the soars on them keep very ill, it is called lepardsy."—*From "Punch."*

H. R. GRUBB, LTD., PRINTERS, CROYDON.

The British Empire Leprosy Relief Association.

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