LEPROSY NOTES

No. 7. OCTOBER, 1929.

Issued Quarterly by

The British Empire Leprosy Relief Association.

(EDITOR :— DR. R. G. COCHRANE.)

The Association's Object :

TO RID THE EMPIRE OF LEPROSY.

PRINCIPAL CONTENTS.

24, CAVENDISH SQUARE, LONDON, W.1.

THE

BRITISH EMPIRE LEPROSY RELIEF ASSOCIATION

Office: 24, CAVENDISH SQUARE, LONDON, W.1.

Telephone: MAYFAIR 3340.

Leprosy Notes.

No. 7. OCTOBER, 1929.

Editorial.

Our readers will be interested to hear that Mr. Oldrieve has arrived safely in Salisbury, Southern Rhodesia. The latest news we have is that he and his wife are busily engaged in farm work of all kinds, in preparation for the time, not far distant, when they will own their own land. Mr. Oldrieve is still keeping in touch with the Association, and is showing in many ways his continued sympathy and keen interest in the work.

To take up the reins where Mr. Oldrieve dropped them is no light task, and one of the most difficult pieces of work is to undertake the editorship of LEPROSY NOTES. It is our aim to maintain the same standard of efficiency that has been set in the past, and we trust that this journal will increase in its usefulness and continue to fill a need. Not only do we wish to secure the most helpful and practical articles from workers, but it is felt that there are numerous questions which are puzzling those who, without special training, are doing routine work amongst lepers. We have decided, therefore, to discuss these various problems from time to time, and in this number we are dealing with the question of potassium iodide. Forthcoming numbers will include articles on such problems as " The Choice of Hydnocarpus Preparations," " Criteria of Cure," etc. If workers have any subject which they would like discussed, it would make matters easier if they would communicate with us, and the difficulty in question, if a common one, will be discussed in one of these special articles.

We are glad to bring to the notice of our readers the new quarterly entitled " Leprosy in India," which is issued by the Indian Council of the Association. This magazine is primarily for the use of leper workers in India, but we are sure those engaged in the fight against leprosy in other countries will find it of extreme value. Will any of our readers outside India who would like to have " Leprosy in India " supplied to them regularly, kindly communicate with us.

The Annual Report of the Indian Council of the Association is full of encouragement and hope. This report brings out clearly the wide prevalence of the disease, the necessity for the dissemination of knowledge of the early symptoms, and provision of properly organised clinics for the purposes of diagnosis and treatment.

To those who are in charge of large anti-leprosy schemes this report contains much information which is of value. Each country has to approach the leprosy problem from its own angle, and a method in one country may not be possible in another. India is peculiarly well suited for extensive anti-leprosy schemes, for, in the first place the Association is endeavouring to organise treatment centres for the early cases of leprosy, and in addition there are leper homes and hospitals throughout India, mainly under the care of The Mission to Lepers, which are dealing to a large extent with the problem of indoor treatment of leprosy. It is the proper balance of out-patient centres, with an adequate provision of leper hospitals and homes, combined with intelligent propaganda, which will ultimately bring this scourge under control. We cordially recommend the Report of the Indian Council to all those who have anti-leprosy schemes to organise on a large scale.

Grants for Leprosy Work.

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

TANGANYIKA TERRITORY.

Leipzig Lutheran Mission, Moshi	£25
Benedictine Mission, Peramiho	£150

NORTHERN RHODESIA.

Seventh Day Adventist Mission, Mwami	£400

These grants have been made for the provision of buildings and simple housing accommodation for lepers undergoing regular treatment, drugs, equipment etc. Applications for financial aid will be sympathetically considered by the Committee, and all applications should, in the first place, be sent to the Director of Medical Services of the Colony concerned, who will forward them to the Secretary of the Association.

The Position of Iodides in the Treatment of Leprosy.

By Robt. G. Cochrane, M.D., M.R.C.P.

It is proposed in this article to review the position of potassium iodide in the treatment of leprosy. This drug has recently been recommended, but many workers are finding it so expensive that they are anxious to know whether the benefit to the patient counterbalances the expenditure spent on the remedy.

It is well known that iodides act by virtue of their ability to produce reactions, the theory being that the gradual liberation of bacilli by the careful administration of iodides tends to increase the fighting powers of the patient, and so aids him in overcoming the disease. However, as will be shown, the hope that iodides would not only break down foci of bacilli, but help to raise the resistance of the patients, has not been altogether sustained.

As the object of iodide treatment is to produce reactions the question to be discussed is whether reactions in themselves are beneficial or not. As a result of anti-leprosy treatment of any kind, but more especially with iodides, a state of lepra-reaction is liable to be set up. Lepra-reaction may be defined as a state or condition of the body which is produced by the breaking down of leprotic foci. It is this reaction which causes fever and prolonged weakness in the patient. It can be stated, however, that occasionally the lesser degrees of fever, provided they do not leave the patient weak, are sometimes beneficial, but speaking generally it is found that anything but mild lepra-reaction, lasting not more than 48-72 hours, tends to weaken the patient, and this is detrimental to the arrest of the disease.

In potassium iodide we have undoubtedly one of the most potent drugs available for producing a reaction, and for this reason this treatment must be undertaken with caution. In strong healthy adults, where there are comparatively few bacilli demonstrable, then the breaking down of such bacillary foci gradually, apparently acts as a stimulus to the defensive mechansim of the body and is beneficial. It is just those early skin cases with few bacilli, who take ample exercise, that tend to respond to iodide treatment. In such cases the iodides, when cautiously administered, cause small reactions, which are easily controlled by withholding or diminishing the drug. On the other hand, the severe skin case and the individual who is weak or has flabby muscles, should on no account be given potassium iodide, for in such cases sooner or later severe reactions are liable to occur, making the patient progressively weaker. The patient who has extensive nerve

involvement of the affected nerves should, as a general rule, not be given iodide, for this not infrequently causes very severe and painful reactions in the nerves leading to fibrous formation in the nerve sheath, resulting in destruction of the nerve and subsequent deformity.

When iodides were re-introduced it was hoped that they would hasten the resolution of the disease, but accumulated evidence from various sources does not seem to have shown that this occurs. In fact, more commonly, when used as a routine, iodides prolong the course of the disease as a result of the repeated reactions they cause. Therefore, it must be concluded that iodides do not bring us to a quicker solution of the problem of healing the leper.

If this is the case, then workers who are not fully cognisant of the dangers of iodides are better advised to omit them from treatment altogether. Such a powerful drug should never be used as a routine. Where routine work is the aim the derivatives of hydnocarpus oil are still the surest and the safest in the treatment of leprosy. Those who are conducting leprosy treatment in ordinary leper camps with no intention of experimenting, are advised to use the following remedies, *viz.*, pure hydnocarpus oil, esters or alepol.

To those who feel they would like to explore the possibilities of iodide treatment, then the following two rules will help, it is hoped, in deciding whether iodides should be administered :—

1.—Iodides should only be given to the healthy leper. Those with flabby muscles, and the physically weak, should not be given this remedy.

2.—It should be remembered that when iodides are used for a long period of time they tend to produce general weakness. Drugs which lessen the resistance of a patient are automatically contra-indicated in the treatment of leprosy. Therefore iodides should be stopped on the first sign of weakness.

NOTICE OF REMOVAL.

Will readers kindly note that the office of the Association will shortly be moved to 29, Dorset Square, London, N.W.1. All letters written after October 15th, should be sent to the new address.

Leprosy in China—An Emigration Problem.

By James L. Maxwell, M.D.
Hon. Med. Adviser to The Mission to Lepers in East Asia.

In these days of rapid intercommunication parochial views, especially in regard to the prevalence of disease are quite out of date. This is particularly the case in leprosy, of which prevention and cure are now within the reach of possibility. The study of leprosy in China therefore assumes a special importance from two points of view. First because that country is one of the world reservoirs of the disease, and secondly, that with their innate business abilities, the Chinese are rapidly growing in numbers in the Malay Peninsula and the East Indian Islands. The menace, therefore, of a disease which easily escapes detection in its early stage and whose incubation period is so long that many imported lepers may have had no signs of it on their arrival, is serious.

That China is an important factor in the world census of lepers is undisputed, though no true estimate of the numbers affected by the disease is yet possible. Such information, however, as we possess suggests that, after India, China contains the largest number of lepers in the world, and it is possible that even India's huge total may be surmounted by that of this country. Further, the economic depression attendant on the continuous condition of civil war that has existed in China off and on for nearly two decades, culminating in the last two years, has reduced the bulk of the people to a state of poverty which renders the increased spread of leprosy almost inevitable.

The study, therefore, of this affection in China is one of great moment. Of its history we need say very little, it goes back into the traditional history of the country. All we know for certain is that it existed in China many centuries before the Christian era.

The prevalence and distribution of the disease is, however, of considerable importance. Roughly speaking, leprosy may be said to be common in the south, present in the central regions of China, and rare or absent in the north ; but, as with other generalisations this is far from being the exact truth.

Of the prevalence of leprosy in the southern provinces of China there is no doubt whatever. Yunnan and Kwangsi and probably Kweichow, both the aboriginal and Chinese populations, Fukien, and to a lesser extent Chekiang, are all heavily infected. Kiangsu, Kiangsi, Anhwei, Hunan and Hupeh all contain considerable numbers of lepers but the distribution in these provinces is probably very uneven, some localities being heavily infected while others almost completely escape.

This leaves two of the central provinces still unaccounted for, Shantung and Szechuen. Shantung from time immemorial has been one of the main centres of leprosy and continues to be both an endemic area and an important distributing centre. Szechuen on the other hand, appears to have few indigenous cases, but receives quite a number both from Yunnan and Thibet.

The position of the northern provinces is interesting, as indigenous cases of leprosy are almost absent. Two of them suffer more or less severely, however, from the importation of the disease from outside. Of these the most important is the large province of Manchuria with its rapidly growing population. As a country of high fertility of soil and wide open spaces, Manchuria attracts a large number of emigrants ; these come mainly from two sources. Shantung, with a soil of naturally low fertility and exposed to alternate drought and flood has further suffered in the last two years from a military oppression more severe and cruel than in any other part of China, and from all these causes emigration to Manchuria has occurred in an endless stream; probably one of the largest shiftings of population that has ever occurred. With the emigrants much leprosy has been carried. Manchuria's other large source of immigrants is Korea, in parts of which country leprosy is very prevalent.

Kansu, the great north-west province, is probably not a natural source of leprosy but the disease is quite common especially on its western border from the presence there of Thibetan immigrants among whom leprosy is frequent.

Reviewing the position then, it will be seen that the distribution of leprosy in China is very unfortunate from the point of view of outside countries. Apart from the emigration to Manchuria, the Shantungese in search of work, find their way to many countries. This was especially true during the Great War, when the labour battalions in France were largely recruited from this area. Business men go abroad in very large numbers from Kwangtung and Fukien, and enormous numbers of coolies for the East Indian islands and Malaya are recruited from these provinces. Further, the Cantonese are the Scots of China, having a peculiar aptitude for engineering work in all its forms, and their distribution along the coastal areas of the country is very wide. It is clear, therefore, that the problem of leprosy in China is not one confined to that country alone, but is of vital interest to the world outside.

What is being done for leprosy in China itself ? It is unfortunately necessary to confess that scarcely the fringe of the problem has been touched. Splendid work has been done by The Mission to Lepers in several of the provinces for many years. This work began with the care of advanced cases of leprosy in homes supported in whole or in

part by the Mission. Later, the supply of drugs for modern methods of treatment was provided for the doctors working in Mission hospitals which are widely scattered through almost every province of China. In many of the endemic areas regular leper clinics are carried on by these hospitals, some of them having a hundred or more lepers in regular attendance for treatment. Of quite recent years the Mission has started in Shantung a properly organised centre for the curative treatment of early cases, the only such centre existing in China, and it is hoped that the fine work of this mission will be still further extended in that country.

The American Mission to Lepers, of much more recent origin, is doing some very good work in assisting leper colonies in Kwangtung and smaller efforts elsewhere. The Roman Catholics have a great leper colony between Canton and Hongkong. This is probably the largest single effort in China but suffers from the lack of any proper medical supervision or treatment. Recently, a Chinese Mission to Lepers has been formed, which, despite the problem of the financial situation in China, and other special difficulties, promises to add a considerable quota to the good work.

As regards Government action, no co-ordinated work has yet been accomplished. Kwangtung, with its more progressive ideas, has done more than all the rest of the country put together. Contributions have been made to the upkeep of the lepers in the colonies in that province, and an attempt has been made at Swatow in the way of segregation and removal of lepers to an isolated island. Unfortunately, the success attendant on this experiment has not been marked. The place provided is neither adequate nor properly equipped for the purpose, the expenses are inordinately high, and the methods adopted for gathering in the lepers seem to leave the most infective class of leper beggars almost untouched. In this and other provinces small contributions are made by the authorities to the upkeep of leper villages. As, however, there is no confinement of the afflicted to such villages and the pittance received only allows the occupants a home from which they can go out and beg, such places probably do more harm than good.

A Ministry of Health has recently been established in Nanking and possesses, as Vice-Minister, one of the most able and progressive doctors in China. There is some hope, therefore, that the situation in regard to leprosy in this country may gradually be improved and efforts for the lepers co-ordinated under government supervision. It must not be expected, however, that progress in this direction can be rapid. The country is suffering from extreme economic depression as a result of the prolonged wars and governmental control is none too stable even yet. A whole system of health legislation has to be enacted and, what is still more serious, carried through in the face of a terrible scarcity of

fully qualified physicians ; and it is certain that for many years the finances for such work will be scanty, while many other problems, such as those of medical education must be handled by the new Ministry.

Much depends also on the methods adopted. Except perhaps in Kwangtung, there has been an unwillingness to give assistance through voluntary organisations and this is especially serious in the case of work for lepers. Leprosy as a disease is greatly feared, and motives more deep and a love of humanity more profound than can be expected of a purely official organisation is required to make a real success of leper homes and colonies.

With regard to segregation it is not desirable to enter into the age-long dispute here. I am, myself, convinced that as far as China goes, any attempt at it on a large scale would be a complete failure. The advanced and deformed cases, many of them no longer infective, would be segregated with some ease ; the infective cases would largely escape ; and the very early cases, where concealment is easy and treatment most hopeful, would certainly hide their malady until the chance for their cure was largely diminished. What is, perhaps, needed more than anything is education ; education of the friends of the lepers, of the lepers themselves, and of the general public in China, that leprosy is a curable disease in its primary stages, and possibly at an even much later stage.

For the present, however, both in a campaign for education and for the treatment of leprosy in China, outside help is, and for some time will be, urgently required.

A Guide when Ordering Alepol.

In order to help those who are ordering " Alepol " from time to time, their calculations should be based on the following :—

100 Grammes of " Alepol " will make up 3,000 c.cs. (approx) of a 3 per cent. solution. Assuming, therefore, that on an average each leper receives 10 c.cs. of a 3 per cent. solution each week (some will receive more, others less), then this 3,000 c.cs. will last ten lepers 30 weeks.

Leprosy Treatment in Weihaiwei, North China.

By Francis Clark, M.D., M.R.C.P.,
Senior Medical Officer.

The *Lancet* for January 14th, 1928, contained an article by Sir Leonard Rogers on the curative action of the hydnocarpates and iodides in Leprosy and stated that this new treatment held out great hopes for the leper.

The new drug—alepol or sodium hydnocarpate—was unobtainable in China at that time, and I accordingly ordered a supply from England and commenced treatment therewith of some of our lepers on June 4th.

A census taken in March, 1928, of the leper population of this Territory—288 square miles—showed seventy cases, and a previous census taken in 1916 showed the same number. They are scattered over the territory in various villages, many of which are only accessible by bridle—or footpaths, and the lepers have always been allowed, as in other parts of China, to wander freely about the streets, attend the markets and village shops, work in the fields and even marry and bring up families.

It is generally stated that the first two decades of life are those in which the infection is most frequently acquired, but the following table, based on the patients' statements of the duration of their illness, suggests that the third and fourth decades are equally susceptable ones in our cases ; the figures are too small, however, to afford any reliable data.

Table I.
Age incidence of the disease.

Under 10 years	9
10-15 years	13
15-20 years	11
20-25 years	11
25-30 years	12
30-35 years	8
35-40 years	2
40-50 years	2
Over 50 years	2

The duration of the illness has been as follows :—

Table II.
Duration of Illness.

Under 5 years	15
5-10 years	29
10-15 years	16
15-20 years	7
20-30 years	1
Over 30 years	2

There is, I find, no material difference in the average duration of the disease among those who developed it during the first two decades

of life, and those who developed it later. One patient aged 61, is said to have been a leper for thirty-four years, and several others have survived for twenty to twenty-five years.

Treatment of Cases. Three cases were taken in hand at first as being nearest to Port Edward, the treatment being given in the patients' own homes; they comprised a man of thirty-three and another of thirty, both of whom had had leprosy for four years, and a man of forty who had been a leper for fourteen years. These three patients were given alepol hypodermically twice a week regularly; the first named had an extensive open sore in the left chest, which healed under the treatment, and he informed me in September that he was then able to walk into Port Edward (about two miles) whereas he had not been able to do so for some time before commencing the treatment. All three of these expressed themselves as feeling very much better.

In October it was found possible to extend my visits to Chi Chia Chuang, Chang Feng and Feng Lin (*i.e.*, from eight to nine miles from Port Edward). At the first named village a man of thirty-two, who had been a leper for ten years, and who had given up his occupation as a carriage-driver on account of increasing paralysis of the arms, came for treatment, and early in January he was able to resume his occupation. At Chang Feng a male of eighteen who had had the disease for nine years, has been treated regularly up to date, while at Feng Lin a man of thirty-six who had been a leper for eleven years, another of the same age who had had the disease for thirteen years, and a lad of thirteen who had been a leper for one year, came for treatment. The first named of these three ceased treatment temporarily after January 10th, as he was very ill with bronchitis.

In November a man of twenty-four, who had had the disease for three years came across the hills from Li Yao for treatment, but found the journey too much for him after four injections, and has not been seen by me since November 20th. In the same month a man of thirty who had been a leper for six years applied for treatment at Chang Feng but after two injections he disappeared; it them transpired that he was a peripatetic beggar from outside our territory and had resumed his wanderings.

In November also it was found possible by the use of a motor-bicycle and side-car to extend my visits to Liu Lin Tszu (some twelve miles from Port Edward), and the following cases came there for treatment :—

A male of	36	who had been a leper for			4	years.
,,	26	,,	,,	,,	9	,,
,,	38	,,	,,	,,	6	,,
,,	9	,,	,,	,,	1	,,
,,	37	,,	,,	,,	3	,,
,,	27	,,	,,	,,	2	,,
,,	24	,,	,,	,,	9	,,

The last but one gave up treatment after January 10th, but will, I believe, re-apply later ; the last named on the list gave up treatment after January 24th as the reaction (redness of the tubercles) worried him. Some of his neighbours had commented on the fact, and presumably he is hyper-sensitive. He also, I think, will resume treatment later, but would probably be a more suitable case for admission to Hospital.

Some of these patients seem to think that a few injections ought to suffice to effect a cure, and I had a little difficulty in persuading them that the treatment must be continued for a year at least.

Our winter is somewhat severe, the minimum temperature being usually 10° to 12° F. with occasional keen northerly winds, and lepers suffer intensely from the cold, so much so that I have found considerable difficulty in persuading them to leave their over-heated and unventilated homes even for the short time necessary for an injection. Some of them live from one to two miles or more from the central point at which the treatment is administered—usually outside a village police-station—and even on calm and sunny days with no snow lying, they showed a marked aversion to facing the open air. They naturally also suffer from intercurrent diseases and complications, many having bad eyes, while bronchial and laryngeal troubles are not rare.

Muir of Calcutta states that this treatment with alepol should be followed by the administration of repeated maximum doses of iodide of potassium, extending over a period of not less than five months. This drug produces a reaction in leprous tissues and acts therefore as an indicator of the extent of the cure ; it has to be used with caution, beginning with small doses and carefully watching the results, the doses being graded accordingly, as a severe reaction is accompanied by high fever. It can only be carried out with safety therefore in an institution to which lepers are admitted for the purpose—a treatment centre, with beds. The absence of reaction over this extended period verifies the fact that the patient is cured.

I am satisfied that the patients have benefited by the treatment, but it is too early yet to talk of cures, and the treatment will be continued by Doctor McGlorick, to whom I transferred the cases when I left for England.

How to Keep Leper Patients Happy.

By Rev. F. W. Ross,
Superintendent Leper Home, Raniganj, Bengal.

Some time ago I received a communication which caused me to think. It commenced in this way: "Dear Mr. Ross, Are the lepers in your Home happy?" Now that is surely what lawyers would call a leading question. Apart from the old argument as to whether happiness is a normal experience of life or not, under the special circumstances can it be expected at all? After due consideration I replied with commendable caution, "I think some of them are happier than they were." It is certainly a point which, in the pursuit of other things, can easily be overlooked, and we may too readily persuade ourselves that things are better than they really are. I have no doubt in what glowing terms Mr. Squeers would have replied to a similar enquiry regarding Dotheboys Hall.

Heartache, resentment or dull despair are things that might naturally be expected in a community of lepers, and shall we too glibly assure ourselves that the people under our care are happy? Let us not be too certain that by providing food and clothing and shelter that we have removed every shadow from their lives. Since the modern treatment is noticeably assisted or hindered by the state of mind of the patient, anything which makes for cheerfulness should be sought after. I have come to the conclusion that happiness should have a definite place in our plans, and in so far as self-respect, interest in life, usefulness and unselfish service constitute it, we ought to aim at it. The efficiency of a home may largely be measured by the spirit of the inmates. Are they keen, are they interested, are they hopeful and unselfish? In a word, are they happy? If they are not, then the treatment is not getting a fair chance. When I took over at Raniganj I was struck by the calm of the place. It quite fascinated one. The people were obviously contented, but I soon suspected that their contentment was closely allied to stagnation. What seemed to be indicated was more work and more play. To accomplish that, one had to fall back on the most essential thing of all, namely, to establish a right relationship with the lepers. Enthusiasm is excellent, but unless it is regulated by a knowledge of how to handle people it may simply engender opposition, especially in a community which has been taking life very easily for some time past. One must get to know the people. In this instance, I used up many spools in my camera taking photos of them and jotting down notes of their characteristics on the back of the prints. The procedure was to look over these during

the day, and to stroll round the houses of an evening chatting with the people and acquiring more information. Nothing can take the place of this friendly contact.

A leper home is not a prison, and what mere discipline accomplishes in the latter place will only be obtained by tact and consideration in the former. If the superintendent imagines that he has been commissioned to write a book with the title " My leper friends," and that he is out to get all the material he can, he will then have the point of view I have been suggesting. Everything depends on the amount of interest that is taken in them *as individuals*. When that atmosphere has been created, it is not hard to initiate some project. In our part of India at that time famine conditions were existing. The suggestion of a daily contribution of rice from their ration was gladly taken up and was continued until the new crop was gathered and relieved the situation. Those amounts sent in monthly to the District Board got us some appreciative notice from people who had forgotten that the home existed.

In this connection I may remark that a good many inmates show no interest in outside news, but some do, and it is only fair to cater for them. The cost of a vernacular paper is only a small item, and if some reliable person be found to read it aloud in the evenings he will certainly get an audience. But I cautioned our reader that what was wanted was *news*, and not the rather scurrilous political ebullitions to be found in the editorial columns.

Magic lantern shows and evenings with the gramophone using Indian records were very popular, and I have often found some itinerant juggler or musician in the bazaar only too delighted to display his accomplishments to such an appreciative crowd for a rupee or so. I cannot say that to make a name as a showman is one of my ambitions, but the evening I " produced " a performer on the bagpipes was one to remember. The leper home shop which was occupying far too good a room for that purpose was transferred elsewhere, and a commodious recreation room thus provided. Draughts and ludo and ping-pong and snakes-and-ladders soon became very popular, and a petrol lamp was provided to brighten the proceedings in the evening. Here, again, it is a case of providing for those who want it. As regards these frivolities we have sober-minded people who might say in the words of a famous queen : " We are not amused."

This, by way of play, and the play was well deserved. A project of reclaiming a piece of waste ground adjoining the men's compound had been taken in hand, and an almost incredible amount of work was got through. The idea is to level it and plant it as a fruit-garden, and the final result a few years hence should be decidedly attractive.

Also when the cultivation season started, other ground very suitable for growing rice, but for years lying unused, was cleared, and made productive to the extent of 25 sacks of grain. As practically all our lepers are cultivators by caste, there was no difficulty in getting the work done, once interest was aroused.

One or two of our people knew something about a mason's work, and there was plenty waiting for them to do. The person I'm always on the look-out for is a gardener, and one day I really thought I'd got one. A Madrassi named Daniel presented himself for admission and gave his occupation the arresting title of " Agricultural Supervisor." This sounded promising, and for a week or two he showed himself intelligent and promising, but alas, I'm afraid he was but a rolling stone, and he left quietly one night, probably to lessen the pang of parting ! Occupational interest is very important, but so much attention is given to cultivation in our case, that apart from weaving and a little carpentry, we have made no serious attempt in that way. Outside sale of the product where work done by lepers is concerned is generally an obstacle, but one which has been overcome in some places I believe.

A well-known book has the title " Reading Without Tears," and it is not too obvious that the introduction of education is going to provide much ground for cheerfulness. In our case, since a school was not practicable, a scheme was started whereby those who could read taught those who could not. This very simple method was quite successful, the arrangement being that when the test was passed, both teacher and pupil should receive a prize. In this way, several of our people became literate, and to that extent increased their self-respect. The system continues, and I often hear the sound of lessons being memorised as I go round the houses. Prizes are also given for the houses with the best display of flowers in front, and though all of them do not show equal keenness in that respect, an all-round improvement is quite obvious.

Food is a matter which should receive a lot of attention, and it must be confessed that my investigations in that department have not been received with unmixed approval. I regret to say that some of our people confuse happiness with a sense of distension at least once a day, and an explanation of food values leaves them unconvinced. In other cases there is a tendency to underfeed and the conclusion I have come to is that it is not very satisfactory to leave this matter in the hands of the patients themselves. Improved physical fitness must tell in the long run, and will outweigh a merely temporary dissatisfaction.

One innovation which was rather appreciated by those who benefited thereby was the issue of grey vest and khaki shorts to our hopeful cases. About 24 of our men were selected as really co-operating for a

" cure " and they were very pleased to be able to turn out so attired on any special occasion, as when a distinguished visitor comes. Any suggestion to inculcate pride in themselves and in the Home should be given consideration.

These projects and occupations and recreations, in view of the previous easy routine, might have made a sort of local " Amanullah " out of me. But such was not the case at all. If these things are done merely as ends in themselves, the lepers will surely know it and will fail to respond properly. Where they are the natural outcome of a spirit of real friendship and a desire to do one's best, that will be known too. Every medical officer knows that apathy and listlessness have to be contended with just as much as the more characteristic symptoms of the disease, but mere dragooning won't dispel them. The leper patient's tendency to become lethargic and careless is well-known, but it can largely be overcome by right handling.

Unregulated pity is not required, but the ability to put ourselves in the place of these people, is. Good humour, cheerfulness and tact, allied with average common-sense and resourcefulness will go far to create the atmosphere in which happiness has at least a chance.

Such occupations and interests as I have mentioned may be taken for granted in the larger and better staffed homes, but there are other places where their introduction will require a little determination and patience. In one respect, the smaller homes have the advantage of making it easier for friendly contact with the patients to be maintained. Some of them have natural toughness and are not unduly influenced by their circumstances. There's no need to worry about them but others are more sensitive and suffer from what is called nowadays an inferiority complex as a result of the disease, and if they have moods of depression can we wonder at it ? So in answer to that inquisitive person I still prefer to reply " I think some of them are happier than they were," and to hope that is not an exaggeration.

The Therapeutic and Economic Value of Work for Lepers.

By Sir LEONARD ROGERS, M.D., F.R.S., C.I.E.

The importance of exercise in the treatment of leprosy has been repeatedly emphasized by Dr. Muir, who insists on the necessity for daily walks or other exercises if the best results are to be obtained from the modern treatment by chaulmoogra and hydnocarpus oil derivatives. The increased activity of the circulation doubtless carries the drug to the affected tissues, and this is also shown by the frequency of slight and beneficial reactions. The amount of exercise must be carefully regulated in the case of patients who easily suffer reactions.

The provision of regular work for lepers living in colonies under medical supervision has a three-fold value. Firstly, it provides the exercise required in the efficient treatment of the disease ; secondly, it supplies useful occupation to prevent the patient brooding over his troubles, and thirdly, it is of the utmost economic importance in enabling large numbers of lepers to be voluntarily isolated and treated efficiently at the lowest possible cost. This last factor is not yet sufficiently recognised and practised, but without the closest and most continuous attention to this essential point it will be impossible to deal effectively with a tithe of the vast leper population of our tropical possessions, especially in Africa.

The possibilities in this direction under able administration are well shown by the remarkable work of Dr. R. M. Wilson in Korea, who has recently transferred his large leper colony to a new site. In an article in the China Medical Journal of January, 1929, he describes, with illustrations, the neat cottages for the lepers, and elegant two-storied stone administrative buildings, constructed entirely by leper labour, greatly to the benefit of both the patients themselves and of the financial interests of the colony. It is true that Dr. Wilson had the advantage of a more industrious race than those of some tropical countries, but his example should stimulate others to make strenuous efforts to emulate his success.

I have previously pointed out that most of our African tropical possessions have the great advantage of ample fertile land on which leper colonies can be placed for the accommodation of the more infective types of the disease. Such cases, whenever possible, should be isolated in voluntary camps with good treatment, as is being done at Itu in Southern Nigeria under the enthusiastic care of Dr. A. B. Macdonald. I have been informed by Dr. Mayer, the whole-time leprosy officer of Nigeria, that an effort is being made in this colony to cultivate

crops with which to feed the population. The Nigerian Government has spent as much as £5,000 in one year on the 1,000 odd lepers segregated here. When we remember that there are not less than 90,000 lepers in the whole country, it is obvious that unless this cost is reduced by the lepers growing their own food supplies, the problem of tackling leprosy as a whole in Nigeria and elsewhere will be extremely difficult. If leprosy is to be combated seriously within the next few decades, then, wherever possible, the earlier and less infectious cases should be treated in out-patient clinics, and the more infectious should be voluntarily isolated in colonies where leper labour is employed for building the huts, and the food supplied mainly from the colony's own crops.

Correspondence.

DEAR SIR,

In LEPROSY NOTES, No. 5, of April, 1929,* on page 27, there is a statement made that " at Mantivu there is a Sister undergoing treatment who contracted the dread disease while working in an asylum in Burma." This is not correct. This Sister has never been in Burma. My plea for drawing attention to this insertion is that at both the asylums, the one at Rangoon and that at Mandalay, Sisters of the Franciscan Order are engaged in nursing the leper. As they are sometimes changed from one asylum to the other they have more or less all, at one time or another, come under my care. There is a standing routine laid down in these places for personal disinfection, and also precautionary measures to be taken by the Sisters, and we are proud of the fact that, though they have been in daily contact with lepers for 30 years in some cases there has not yet been a case of leprosy contracted amongst them. I shall be much obliged if a correction to this effect could kindly be made in a later issue of LEPROSY NOTES.

Yours faithfully,

(*Signed*) PERCY M. C. PEACOCK,
Superintendent, St. John's Leper Home.

MANDALAY,
August 20th, 1929.

* The article referred to in this correspondence was an extract from the *Ceylon Morning Leader*.—EDITOR.

The Leprosy Problem in Canada.

By J. D. PAGE, M.D.,
Quarantine Division, Federal Department of Health, Ottawa.

At the fifty-fifth annual meeting of the Canadian Medical Association, the attention of the medical profession, also the public at large, was directed to the subject of leprosy in Canada, and it might not be out of place to bring to the notice of other workers the present position regarding the disease in this country. Both physicians and laymen generally seem to be unfamiliar with the disease, and unless a more enlightened attitude is taken toward it, leprosy may become a real menace to the nation through the immigration of people from countries where the disease is more or less prevalent.

HISTORICAL.

It appears that the first cases of leprosy known in Canada were discovered in the county of Gloucester, New Brunswick, in the year 1815, where sixteen years later as many as thirty cases were found. There are several stories extant as to how leprosy originated in this country. One is that two sailors from the Levant, after touching at Quebec, landed from a schooner at Caraquet, N.B., from whence they walked to Tracadie. There they received hospitality from a French family named Benoit. These two sailors are reported to have exhibited several ulcers on their bodies. Within the few years immediately following, some members of the Benoit family were found suffering from leprosy, which is supposed to have constituted the focus from which the disease spread to the population.

Another story is that a Scotsman who had served in the British army in India brought leprosy to Nova Scotia. A further claim that is made is that leprosy was brought to Louisiana by French families who settled in that state at the time they were expelled by the English from the maritime provinces. If this statement be true, it would be plausible to infer that leprosy existed in New Brunswick many years before 1815 and might have been imported there by French settlers who had come from St. Malo where the disease was known to exist at the time.

However, it is of interest to note that in the year 1844 the population of the province of New Brunswick became so much concerned about the spread of the disease that they prevailed upon the provincial government to erect at Tracadie in that province what was the first government operated leprosary on this continent, where in a very short time as many as twenty-seven lepers were segregated. From the somewhat incomplete information we have on the evolution of this institution

and the way it responded to the needs of the time, we can reasonably conclude that it cared for not fewer than one hundred and fifty lepers, while as many may have died at large.

In more recent years, applications from other provinces began to come in for the admission of lepers of foreign origin. This development formed the basis of negotiations between the provincial authorities of New Brunswick and the Federal Government for the latter to take over the maintenance and administration of the lazaretto, which was consumated in the year 1869.

In 1906 an Act concerning Leprosy was enacted by the Federal Government, providing for the compuslory segregation of lepers when such a request was received from the local authorities concerned.

A few years later the D'Arcy Island Lazaretto in British Columbia, which had been operated for some time previously by the provincial government, was taken over by the Dominion authorities. In 1924 the leper colony was transferred to Bentinck Island.

A full-time medical officer is in charge of the Tracadie Lazaretto. The British Columbia Lazaretto, is looked after by the medical superintendent of the William Head Quarantine station. At present there are eight patients in the Tracadie Lazaretto and twelve at Bentinck Island, classified by nationalities and dates of admission as follows :—

TRACADIE N.B.

Patient	Age	Sex	Date Admitted	Nationality	Where From
P.D.	42	M.	May, 1909	French Canadian	Lameque, N.B.
B.T.	78	F.	October, 1914	French Canadian	Portage River, N.B.
A.D.	30	F.	July, 1918	French Canadian	Lameque, N.B.
J.D.	67	M.	April, 1919	French Canadian	Lameque, N.B.
V. de L	29	F.	January, 1921	Scotch & French descent	Toronto, Ont.
K.S.J.	47	M.	October, 1922	Chinese	Montreal, Que.
J.P.	35	F.	November, 1926	Russian	Blaine Lake, Sask.
P.P.	85	M.	July, 1928	French Canadian	Neguac, N.B.

BENTINCK ISLAND, B.C

Patient	Age	Sex	Date admitted	Nationality	Where from
F.H.	43		August, 1916	Chinese	Victoria, B.C.
C.K.W.	44		October, 1918	Chinese	Vancouver, B.C.
L.A.	33		November, 1918	Chinese	Victoria, B.C.
L.B.	38		December, 1921	Chinese	Vancouver, B.C.
C.K.	49		March, 1922	Chinese	Saanich, B.C.
L.J.	34		August, 1923	Chinese	Vancouver, B.C.
E.D.	36		January, 1924	Doukhobor	Verigin, Sask.
M.J.	32		May, 1924	Chinese	Vancouver, B.C.
W.K.D.	44		October, 1925	Chinese	Nanaimo, B.C.
W.H.F.	27		October, 1927	Chinese	Vancouver, B.C.
C.W.	42		August, 1928	Chinese	Nanaimo, B.C.
L.C.	81		March, 1929	Chinese	Vancouver, B.C.

Of the Tracadie Lazaretto patients, only three show positive signs of active disease, while in the case of the five others, the disease seems to be arrested ; but the latter are so mutilated as a consequence of the infection that they could not possibly resume their places in the community. At Bentinck Island, only two of the twelve inmates do not give microscopical positive reaction.

During the last ten years since the Federal Department of Health was created, it has been one of the incidental functions of that Department to look after the lazarettos. Within this period eleven new cases in all have been admitted at Tracadie, and ten at Bentinck Island. These came from six different provinces of the Dominion.

Clinical.

There are two common striking features of the individual histories of these cases. First, the difficulty and sometimes the impossibility of tracing the time and source of contamination, which may go back many years. Next is the inability of the average physician to diagnose the disease even in its third stage. The consequence has been that most of our lepers go from one doctor to another for one, two or three years before they can be told what is the matter with them, and this at great expense of time and money, as well as danger of infection to the community.

It is worthy of notice that we have in our lazarettos two patients who, prior to their admission, had some parts of their extremities amputated by surgeons of repute on a diagnosis of bone necrosis, without awakening the suspicion that they were cases of nervous leprosy, in which spontaneous amputation is a feature of the disease.

Another not less demonstrative case is that of a man who was treated for several months at a provincial V.D. clinic for syphilis, without beneficial results, although he had given repeated positive Wassermann reactions. Becoming discouraged, he was advised to go to the Mayo clinic at Rochester, from whence he brought back smears to show some of his doctors as evidence that he had leprosy.

As will be noted, the last cases reported occurred among foreigners, belonging to the class which is rather ignorant of the laws of sanitation. They live generally in aggregated communities of their respective nationalities. All had been in the country from six to fifteen years, which shows how long and uncertain is the period of incubation. Obviously, in such late diagnosis, there lurks grave danger to the healthy from the prolonged exposure.

Though the contagiousness of leprosy is no longer discussed in the medical world, it is probably one of the least transmissible of all contagious diseases. From the foregoing information, one may yet be

justified in thinking that some of the provinces may one day be confronted with the same problem as was New Brunswick in the second decade of last century. Under such conditions, the accommodation capacity of our lazarettos would require to be greatly increased.

DIAGNOSIS.

While the object of this paper is not to dwell upon the specific nature of the disease, its evolution, etc., I thought it apropos to mention here the conclusion of an article on " The Wassermann Reaction in Leprosy, with reference to the New Complement—Fixation Technique," by Dr. Kolmer, Professor of Pathology and Bacteriology, University of Pennyslvania, and Dr. Denney, of the U.S.P.H.S., Officer-in-Charge of U.S. Marine Hospital No. 66 (Archives of Dermatology and Syphilology, July 1923, Philadelphia, in which they say :—

" In some cases of leprosy there is an increased tendency of the serum to yield falsely positive Wassermann reactions ; this is especially true in tests employing alcoholic extracts of tissue saturated with cholesterol.

" In the new complement-fixation test for syphilis, this tendency is neutralized by the use of a new antigen largely free from anti-complementary activity, and other technical improvements.

" Since the new complement-fixation reaction does not yield falsely positive reactions in leprosy, it is of value in differential diagnosis between cases simulating both leprosy and syphilis.

" A positive reaction in leprosy with the new method justifies the clinician in proceeding with anti-syphilitic treatment without the mental reservation that he may be uselessly subjecting a leper to unnecessary or even harmful measures."

Further, I believe that the following statement from such an eminent authority as Dr. J. T. McDonald, Pathologist to the Hawaiian Territorial Board of Health, resulting from his observation of one hundred and fifty cases, will be of interest to you :—

" The microscope is the supreme agent of the final diagnosis of leprosy. No patient should be committed to a segregated colony without a bacteriologic demonstration of the disease."

(This is not always possible in cases of purely nervous type, when in the first stage of the disease we have to decide from clinical symptoms.—J.D.P.)

" Of clinical symptoms, maculæ, chiefly leucodermic spots, are found in 89 per cent. of all cases.

" The lepra nodule found in 74 per cent. is the one chief distinguishing lesion of skin leprosy.

" Thinning or complete loss of eyebrows and lashes is present in 63 per cent.

" Atrophic changes in hands and forearms with retraction and contraction of fingers and enlarged ulnar nerve, in 32 per cent. a leading feature of nerve leprosy.

" The plantar ulcer found in 26 per cent., usually on the ball of the foot.

" Absorption of phalanges in 16 per cent., with occasional spontaneous amputation.

" Elephantiasis of hands and feet in 16 per cent.

" Facial paralysis in 11 per cent.

" The entire body should be carefully tested for anæsthetic areas.

" Several of the above symptoms can be found in some slight degree at least, in every leprous subject."

My comment is that if the doctors who have been consulted in the past by people afflicted with leprosy had had within their store of medical knowledge the information contained in Dr. McDonald's condensed statement, there would not have been so much procrastination in arriving at correct diagnosis.

The importance of early diagnosis in leprosy cannot be over emphasized for the following reasons, *viz.* :—

(1) If a foreigner is found suffering from leprosy within five years after his arrival in Canada, he can be sent back to his native country within the terms of the Immigration Act. After five years he becomes our burden until he is cured or dies.

(2) From the marvellous results obtained of late years from the treatment of leprosy with hypodermic injections of Ethyl Esters of Chaulmoogra Oil, the expert in leprosy holds the optimistic view that the disease can now be cured. Hence, the desirability of beginning treatment before the patient has reached the stage where he has become crippled in various ways. If the disease can be arrested, the deformities and various accidents resulting therefrom cannot be remedied.

(3) Since a leper is considered an element of contagion, the sooner he is removed from healthy environment, the better for the community.

Conclusions.

From the foregoing brief outline of leprosy conditions in Canada, I desire to emphasise the following points : first, that every member of the profession who has occasion to be consulted in private or hospital practice by people suffering from leprosy should regard it as his duty to acquaint himself better with the various manifestations of the disease from its incipiency and, secondly, that it is highly desirable that our medical schools should devote a few lessons to exotic diseases so that the new generation of physicians will be better equipped to meet the various needs of its clientele, which in the large centres particularly, comprise people of almost every country of the world.

The Value of Out-Patient Clinics in Leprosy Treatment.

By Dr. Percy M. C. Peacock,
Medical Officer, Mandalay Skin Clinic.

(This article in a more extensive form has appeared in "Leprosy in India," entitled "Mandalay Skin Clinic." On account of its outstanding importance we are reproducing the main points.)

The scope of an out-patient clinic for leprosy is immense and out of all proportion to what can be accomplished by an in-patient institution alone. There is some hope of eventually getting into touch with the vast leper population of a town by means of the former, but no hope whatever of ever reaching the hundreds of lepers outside an asylum, through the latter.

The type of patient who usually seeks admission into an asylum is an advanced case, with the disease well established, during which period inmates of the house and others have been exposed to infection. A large percentage of the admissions are still worse, being cases on whom the disease, having wrought havoc, has left the patient a useless member of society, a permanent financial burden to the State, but no longer a danger to the community. The Leper Act now in force really affects only these unfortunates. All cases sent in by the police to an asylum, under a warrant of detention, are more or less patients in this inocuous stage of the disease. Contrast this state of affairs with the prophylaxis covered by an out-patient clinic. Here a patient presents himself for treatment with probably just a raised red, or an anæsthetic depigmented patch, of a few months duration, not long enough or sufficiently advanced to have been a source of infection. He is given treatment at the clinic, advised to take exercise, and to keep to his work, and instructed in a few general rules on personal hygiene, and how to live to benefit himself and safeguard contacts. His house is visited and other inmates examined. The very great importance of this last measure, visiting, cannot be too greatly emphasised. Out of several such visits conducted last year, there are three outstanding instances in which, though only one individual sought treatment, in each case it was found on visiting their homes that other members of the family had become infected.

(1) In the first case, Moung Kaung, the family consisted of father, mother, two sisters, and two brothers, besides Moung Kaung, who was the one to seek treatment. A visit proved the two other brothers also infected. All three are now under treatment.

(2) With Mah Aye Yee, a young Burmese woman, a school teacher, the disease had just begun to show on her face. The family consisted of father and nine children, all living, the mother being dead, but not from leprosy. Only the teacher called, and not for treatment, but just for diagnosis. Leprosy was confirmed, the house was visited, and it was found that her next sister and younger brother were also affected. No signs in any of the others. All three are now undergoing treatment.

(3) A Burmese woman, Mah Yin, an advanced case, came for treatment. The house was visited and it was found that the family consisted of father, mother, one other sister, and one brother. The brother, a very far advanced case of leprosy, was advised admission into an asylum, but refused and has since died. The younger sister is soon to discontinue treatment as having become non-infective and completely cleared up. This visit disclosed another leper woman next door, an advanced case, who was advised admission into an asylum, where she remained for a while and then went out to die.

Undoubtedly this visiting of patients in their homes is one of the very greatest aids to be enlisted in any organised campaign against leprosy. In Burma no objection is raised to this visiting of the people in their homes, or to an examination of their womenfolk. This examination of the family is of more importance when instituted in conjunction with an out-patient leper clinic than with an in-patient institution. To illustrate, an advanced case seeks admission into an asylum, his house is visited, other members of the family are detected with early signs of leprosy. The advanced case is admitted ; what is to be done about the others ? It is doubtful if admission into an asylum would be the proper course to take, even if they were willing, though most of these very early cases would be indignant at the suggestion, since only the trained eye detected leprosy in them, and neither they nor others noticed anything wrong. The upshot of this is that the advanced case is admitted and the early cases left unprovided for in their homes, to develop slowly but surely into the advanced type and so perpetuate the disease. On the other hand, with an out-patient clinic, an advanced case seeks treatment, it is seen at once to be unsuitable for out-door treatment, and admission into an asylum is advised. The house is visited, other early cases are detected, who, when advised, are glad to avail themselves of out-door treatment. In this latter case all affected members of that household are effectually dealt with. In this way every early case of leprosy in the district could gradually be reached, and the problem brought under control more rapidly.

Notes on Cultivation of Hydnocarpus Trees.

(*As we have received numerous enquiries with regard to the cultivation of the Hydnocarpus Trees, we feel that the following notes will be found useful.*)

The chief difficulty in the raising of Hydnocarpus Wightiana plants lies in the inability to obtain fresh seeds. It is absolutely essential that the seeds of the Hydnocarpus species, like the clove, and many other oil-containing seeds, should be sown fresh, *i.e.*, as soon as possible after being picked or having fallen from the trees. Once the seeds have germinated there appears to be no difficulty in raising the plants.

Fresh seeds can be sown in beds and then transplanted when the seedlings have produced four or five leaves, or planted at once in their permanent position. A quantity of good leaf mould dug into the seed beds, or into the prepared holes for planting assists the young seedlings in getting a start.

The opinion of Mr. George McCabe, who cultivated the trees at Mourbhanj, India, is quoted by the Editor of *The Superintendent*, in the issue of April, 1929, as follows :—

> " I found it a good plan to crack the shells before sowing, being careful not to damage the seed in the process. Sow seeds in beds shaded from the sun and keep moist until germinated. When about six inches high, put into eight inch pots and place in a shaded spot—a verandah is an excellent place. Plant out the following year into their permanent places, about 15 feet apart in rows, in the rainy season. When well-established they must be well-watered in the hot weather and well manured. They will produce fruit in five years, and require no pruning except to make shapely trees."

We are indebted to Dr. A. F. G. Kerr, Director of Botanical Section, Ministry of Commerce, Bangkok, Siam, for the following notes on the cultivation and yield of the Hydnocarpus Anthelmintica tree.

In its natural state Hydnocarpus Anthelmintica is usually found on a sandy loam and near water, either on the banks of rivers or on the edge of marshes. Occasionally it grows on mountains at an altitude of about 800-1,000 metres. It is an evergreen tree itself and its associates are mostly evergreens. The seedlings come up in fairly dense shade, on ground that has a good top layer of leaf mould.

In cultivation it can be grown with only partial shade and the seedlings are able to stand a fair amount of sun, but they should have some shade. They do well in a mixture of clay, sand, and leaf mould, and should have plenty of drainage. During dry weather they should

be watered every other day. The tree is often cultivated in the stiff Bangkok clay and is even planted along road-sides, but does not do so well as under its natural conditions. Growing naturally the trees along the river banks are subjected to occasional floodings during the rains, but for six to seven months of the year they are well above water level. Groves of pure stands of wild trees are frequent, and in such situations the trees are about 12-20 metres apart.

There is no exact information as to the age when the tree begins to bear, but, judging from the rate of growth of seedlings and size of bearing trees, it is probably not less than eight to ten years. In the forest, trees are not found bearing till they are of considerable size, with a trunk of at least 50 cm. in circumference. The trees probably go on yielding fruit for many years ; old trees, growing naturally have been found with a trunk circumference of over 4 metres. The yield is rather irregular, depending a great deal on the rainfall ; if the latter is deficient the crop is poor. If conditions are good, trees will fruit every year.

In a fair season an average sized tree, with a trunk measurement of about 1·20 metres, will yield some 200 fruit. The number of seeds in each fruit varies considerably—on a good tree from 25 to 115 in each fruit—but the average for healthy trees may be taken as 65 : that is, a total of 13,000 seeds for the whole tree. Mr. Marcan, Director of the Government Laboratory, Bangkok, estimates the average weight of 100 dry unhusked seeds to be 136·2 grams.

The region where Hydnocarpus Anthelmintica most commonly grows has an annual rainfall of about 1,270 mm. (50 inches), distributed chiefly over the months May to October. Long dry spells are usual during the other months. The mean temperature is about 27° C. (81° F.) with extremes of about 40° C. (104° F.) maximum and 14° C. (57° F.) minimum.

The Leper Situation in Japan.

By Dr. A. Oltmans,
Secretary for Japan, The American Mission to Lepers.

In Japan, as in all other leprosy infected countries, complete statistics of the disease are still lacking and difficult to obtain owing mainly to the fear of exposure, resulting in social ostracism not only of the individual patient, but also of the family to which he or she belongs. Making due allowance for hidden cases, an estimate of between 50 and 60 thousand lepers in Japan proper, will probably not be far from the real mark.

The laws of Japan for the control of lepers and leprosy are quite excellent, but the efficiency in carrying them out is much hindered by the people's attitude of indifference and carelessness on the one hand, and by an inherited abnormal fear of the disease on the other hand. To this must be added general ignorance of the people regarding the newest and best methods of combatting the disease, and the hopeful features resulting from such methods. There is also a lack of full provision, on the part of the Japanese Government, for adequately meeting the present situation in the way of both preventive and curative measures. At present provision is made for housing only one out of every 15 to 20 estimated leper patients in all the Government and private leper hospitals in the land. Still, even that is encouraging when one remembers that it is only about thirty-five years since the first private leper hospitals in Japan was opened, and only twenty years since the Government first undertook this work.

The distribution of leprosy throughout the various parts of Japan is remarkably even, with the exception of the most northern island, Hokkaido, where there are but few lepers owing mainly to the fact that with the exception of the "Ainu," the original inhabitants of the island, the people are mostly colonists from other parts of Japan, and among these people there would naturally not be many lepers. Besides, the severe northern climate, especially in winter, offers no attraction to leper patients. Among the original "Ainu" the disease is said to be practically unknown, as is the case with the aborigines of several other leprosy infected countries. The largest numbers of lepers on record in Japan are found in two of the most southern provinces. Certain places famous for hot springs, notably Kusatsu in north-west Japan, draw numbers of lepers by reason of the real or fancied medicinal virtue in the spring waters.

The locations of the five Government leper hospitals in Japan have been wisely chosen, each one being more or less in the centre

of from eight to ten provinces by which it is supported, and from which, as a rule, the patients are taken into these respective hospitals. To the provincial support of each hospital about one-fifth is added from the budget of the Central Government. The physical, or material, condition of these five institutions, as far as ample grounds for labour, equipment, official personnel, hygiene, etc. are concerned, is in many respects praiseworthy, and improvements of various kinds, especially in the way of commodious, well-lit and well-aired houses for the patients are almost continuously made. At every new visit the writer of this article sees something new and attractive along these lines.

The leper policy of the Japanese Government is that of compulsory segregation, but carried out with several serious limitations. The first and foremost of these is the subsidiary policy, at least in practice, of taking into these five hospitals only such patients as are indigent and practically homeless. Hence it follows, that the class of patients in these hospitals is largely that of vagrants and beggars—a class that is used to a roaming life, especially the men—and therefore not a few of them try every means of escape from compulsory confinement. Two of these hospitals are on islands, which makes flight more difficult, but even from these means are found, in some way or other, to get away. However, with improved physical conditions, and especially with the recent rapid improvement in health resulting from the latest medical treatments, escapes are becoming gradually less. Another limitation upon carrying out the compulsory segregation policy is the lack of sufficient accommodation for all that are discovered as being lepers and ought to be segregated. Of those officially registered as such, only about one-fifth can at present be accommodated in the five Government hospitals, while the combined capacity of all the eight private hospitals is only about 700.

One bad result of the compulsory segregation policy is that the great majority of patients placed in these hospitals are advanced cases, not a few in the final " burnt-out " non-infective stage, the segregating of whom does not materially lessen the spread of leprosy in the land. This is especially the case with the beggar class, picked up on the streets by the police, who appeal to the pity and generosity of passers-by through their maimed and repulsive condition. And to mention still another limitation, the discovery of lepers in the homes as well as on the streets, falls within the scope of police duty, and policemen are not qualified to make thorough examinations along medical lines. Another and smaller group of lepers placed in hospitals are from among those accidentally discovered at ordinary hospitals. These are more often in the early stages of the disease. The law is that such must at once be reported by the physician in attendance to the authorities of the

Department of Health, but it is a serious question whether in the majority of cases this is actually done.

Rules for house isolation of leper patients exist, but it is difficult to know to what extent such Rules are actually enforced. As a rule ordinary physicians are not keen on treating leper patients especially when the latter are known to be such by the people of the place. There is a crying need along this line for special medical inspectors and physicians employed by local governing authorities.

Clinical work for leper patients is incidentally carried on by Dr. I. Toyama, a noted skin disease specialist at the Imperial University in Tokyo, though the work is not done under that name. " Treatment Centres " for lepers, such as are now being carried on by the British Empire Leprosy Relief Association in Africa and elsewhere, are still non-existent in Japan, and the plan has not yet found favour with the civil and medical authorities. Their contention is, both in Japan proper and in Korea, that if such " Treatment Centres " became popular, they would tend to spread the disease as a result of the travel of patients to and from such Centres, or it would lead to the settling down of leper groups around these Centres. Both of these dreaded results could of course, be quite effectually prevented by strict police supervision which is so very adequate and efficient along almost every line. What is needed is the knowledge and conviction that any such fancied dangers would be more than counteracted by the results of treatment, for large numbers of cases would become free of their disease in the initial and early stages. At least 90 per cent. of these under the present policy receive little or no medical or hygienic attention.

The key to the situation regarding leprosy in Japan, as anywhere else, lies in an intelligent and sympathetic co-operation of the public, and especially of leper patients and their relatives, with the Government authorities in carrying out a vigorous and progressive campaign against the disease at its every stage.

The support of Government patients is, of course, assumed by the Government, as indicated before, but the Japanese Government's concern for maintenance of leper patients does not stop with those in her own hospitals. From various Government sources, both Central and local, the eight private leper hospitals also receive considerable financial assistance. In the matter of material improvements of these private plants also, such as new buildings, equipment, major repairs, etc., the Government of Japan is very sympathetic towards appeals for help. This makes the task of those responsible for the private hospitals not only more easy, but also much more pleasant.

On the whole the outlook for work for lepers in Japan is decidedly encouraging. The Government is gradually extending its operations,

the people are being more widely informed, and are therefore beginning to take a more intelligent interest in the anti-leprosy campaign, and the international movement with its motto, " Ridding the World of Leprosy " is finding a constantly increasing echo among the Japanese people as a whole. There is also talk of a National Conference on Leprosy in Japan in the near future.

Literature.

Leprosy : Summary of Recent Work, No. 16. This is a reprint of the Leprosy sections from the Tropical Diseases Bulletin.

Leprosy in India, No. 1. July, 1929, issued quarterly by the Indian Council of The British Empire Leprosy Relief Association.

Report, 1928. Annual Report of the Indian Council of the British Empire Leprosy Relief Association.

To be published shortly :—

Leprosy in the Far East.—A Survey. By Dr. R. G. Cochrane.

N.B.—The following journals issued by the Association are now out of print : " *Leprosy Notes,*" Nos. 1, 2, 3, 4, 5. " Leprosy, Summary of Recent Work," Nos. 1, 2, 5, 6, 8, 12, 13, 14. " Leprosy—Symptoms, Diagnosis and Treatment," by Dr. R. G. Cochrane. A new issue of the latter is in course of preparation and will be issued shortly.

A Story from Dichpali, India.

" Two boys were observed together. One was weeping bitterly, tears raining down his horribly scarred face. He had only just come. At first it was thought that the other, an old inhabitant, a good-looking lad with a healthy face, was teasing the youngster. So he was asked about it.

' Oh, no ; I'm not teasing him. He was crying because his face was so ugly, and I was telling him that mine was worse than his when I came in.' "

Glycalepol.

J. T. Jackson, Esq., M.Sc., writing in *The Superintendent*, of August, 1929, states that the pain which sometimes follows the administration of alepol can be alleviated by the addition of glycerine to the " Alepol " solution.

The glycerine used must be pure double distilled glycerol. Ordinary glycerine contains acid as an impurity which is detrimental.

Glycerine is present in a combined state in Hydnocarpus Oil as the glyceride of hydnocarpic and other fatty acids. In the preparation of " alepol " (mainly sodium hydnocarpate), the glycerol has been removed from the oil. Glycerine, therefore, suggested itself as a useful addition to " alepol " solutions, if not a necessary one. The addition of glycerine does not appreciably increase the cost of the solution. It is possible that in addition to alleviating pain on administration of " alepol," the presence of glycerine may assist in the absorption of the " alepol," but this has not yet been proved.

"Alepol" solutions containing glycerine have been named " Glycalepol " to differentiate them from the ordinary alepol solution. Comparative tests are being made to see whether Glycalepol has any advantage over the ordinary alepol solution in the treatment of leprosy, in addition to the reduction of the pain factor.

Preparation of " Glycalepol." The solution found useful for subcutaneous injection by infiltration is as follows :—

For 100 cc. of solution :

Alepol	3 grams.
Pure Double Distilled Glycerol ...	2·5 c.c.
Liq. Carbolic Acid P.B.	0·5 c.c.

The strength of the glycerine can be increased.

In preparing, for instance, 16 fl. ozs. of " Glycalepol " of the above strength ; take 15 fl. ozs. of distilled water and add to this 38 minims of liq. carbolic acid. Mix and then add of glycerine 190 minims (3 fl. dr. 10 min.) and mix again. The alepol (210 grains) is now added to this solution, which is stirred until the whole has dissolved. Finally the solution is made up to 16 fl. ozs. by the addition of distilled water. The solution is now sterilised in the usual way. It is very important that distilled water should be used throughout.

Items of News from the Field.

Expressions of opinion from the Bishops of Masasi and Central Tanganyika :—

" There is no doubt whatever that the present policy of allowing voluntary segregation instead of the compulsory segregation attempted in the past is the one reason why lepers previously hidden in the villages busily infecting their friends and relations, and not daring to ask for any treatment, are now gradually coming under medical care. I believe that the number still to be reached more than equals the number under treatment."

" Your present help will make the lot of the lepers ever so much more comfortable and bring cheer into their lives. A new day is dawning for the lepers, and the support of your Association will be a big factor in ushering in that day."

A worker in Tanganyika writes :—

" This country is thinly populated, the people scattered over a vast area, but many lepers are there. And yet before we got the 'Alepol ' we did not see them ; but now they are visible, and are coming forward with their deep hopeless eyes, asking if it is true that there still is hope for them."

The following is an extract from a letter from India :—

" If you can imagine a Hospital, or Home, full of patients who have good grounds for assurance that by medical skill they have been saved from certain death, then you may have some conception of the mental attitude of our people here. Naturally it is very exhilarating to live and work in such an atmosphere and I enjoy my work better every day."

Cheering news from a worker in the Belgian Congo :—

" I have been treating for the past ten weeks twenty lepers. There are already three of these that are practically clear of the early markings of the disease."

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

The British Empire Leprosy Relief Association.

GENERAL COMMITTEE.

THE RIGHT HON. THE VISCOUNT CHELMSFORD, G.C.S.I., G.C.I.E., G.C.M.G., G.B.E. (*Chairman*).
THE RIGHT HON. THE VISCOUNT INCHCAPE, G.C.S.I., G.C.M.G., K.C.I.E.
THE MOST HON. THE MARQUIS OF READING, G.C.B., G.C.S.I., G.C.I.E., G.C.V.O.
THE RIGHT HON. LORD LUGARD, G.C.M.G., C.B., D.S.O.
THE RIGHT HON. LORD RIDDELL.
THE RIGHT HON. THE EARL OF RONALDSHAY, G.C.S.I., G.C.I.E.
THE VISCOUNTESS CHELMSFORD, C.I., G.B.E.
F. J. R. RODD, ESQ. (*Representing the Foreign Office*).
*DR. A. E. HORN, C.M.G., Medical Adviser to the Colonial Office (*Representing the Colonial Office*).
SIR EDWARD A. GAIT, K.C.S.I., C.I.E. } (*Representing the India Office*).
*SIR LEONARD ROGERS, C.I.E., F.R.S., late I.M.S. }
LIEUT.-COL. A. W. ALCOCK, C.I.E., F.R.S., London School of Tropical Medicine and Bureau of Tropical Medicine.
*DR. ANDREW BALFOUR, C.B., C.M.G., Director of the London School of Hygiene and Tropical Medicine.
LADY (GEORGE) BARNES.
*SIR J. R. BRADFORD, K.C.M.G., C.B., C.B.E., F.R.S., President of the Royal College of Physicians.
F. H. BROWN, ESQ., C.I.E.
SIR FRANK CARTER, C.I.E., C.B.E.
SIR R. HAVELOCK CHARLES, BART., G.C.V.O., K.C.S.I., Serjeant-Surgeon to H.M. the King, late Surgeon-General, I.M.S.
DR. ROBERT COCHRANE.
*DR. THOMAS COCHRANE, late of China.
SIR A. C. CHATTERJEE, K.C.I.E., High Commissioner for India.
*DR. J. B. CHRISTOPHERSON.
SIR W. M. FLETCHER, K.B.E., F.R.S., Secretary, Medical Research Council.
*DR. HENRY FOWLER.
LIEUT.-COL. F. E. FREMANTLE, M.P., F.R.C.P., late President of the Society of Medical Officers of Health.
SIR A. E. GARROD, K.C.M.G., F.R.S.
COL. S. P. JAMES, late I.M.S., Ministry of Health.
*DR. T. JAYS.
SIR GODFREY LAGDEN, K.C.M.G.
THE RIGHT HON. P. C. LARKIN, High Commissioner for Canada.
THE HON. SIR ARTHUR LAWLEY, G.C.S.I., G.C.I.E., K.C.M.G.
LIEUT.-COL. SIR JAMES LEIGH-WOOD, K.B.E., C.B., C.M.G.
SIR CHARLES MCLEOD, BART.
SIR J. MICHELLI, C.M.G.
SIR RAJENDRANATH MOOKERJEE, K.C.I.E.
SIR GEORGE NEWMAN, K.C.B., Chief Medical Officer, Ministry of Health.
THE HON. SIR JAMES PARR, K.C.M.G., High Commissioner for New Zealand.
SIR LIONEL PHILLIPS, BART.
SIR H. D. ROLLESTON, K.C.B., Physician-in-Ordinary to the King, Regius Professor of Physic, Cambridge.
MAJOR GENERAL THE HON. SIR GRANVILLE RYRIE, K.C.M.G., C.B., High Commissioner for the Commonwealth of Australia.
THE HON. J. S. SMIT, ESQ., High Commissioner for the Union of South Africa.
THE HON. SIR ARTHUR STANLEY, G.B.E., C.B., M.V.O., Chairman of the Joint Council British Red Cross Society and Order of St. John.
*DR. HUGH STANNUS.
*DR. A. T. STANTON.
SIR W. H. VINCENT, G.C.I.E., K.C.S.I., Member of the India Council.
H. S. WELLCOME, ESQ.
ARTHUR WHITWORTH, ESQ.

**Member of the Medical Sub-Committee.*