

LEPROSY IN SIAM.⁽¹⁾BY DR. MED. J. MARTIN OBERDOERFFER⁽²⁾

The problem of leprosy is of such considerable concern to the Governments in tropical countries, and so particularly bound up with superstition, and horror in the public mind, that it might be worth while for the residents of this beautiful country to hear a little about the problem of leprosy and the possibilities of fighting the disease.

First of all, I will deal briefly with the history of the disease and the present knowledge concerning it. Leprosy is one of the oldest scourges of mankind. It is an infectious disease which was transmitted from man to man, and so far as modern science knows, from man to man only. We are not aware of any other mode of transmission of the disease, for instance through the mosquito, or, as has been talked about in Europe some time ago, through the banana, carpets, etc.

I am sorry to say that such stories were spread by commercial agents who desired to sell their own products, such as Californian fruits, a certain type of carpet, etc. Leprosy is caused by a germ which is well known. We can see the germ constantly but that is all.

LEPROSY PRODUCED IN MONKEYS.

It has not been possible, so far, to produce experimental leprosy in animals (other than mice and rats—Editor), so that a large amount of our knowledge of leprosy is actually conjecture based on epidemiological observations.

However I like to say that up in Chiengmai we have reason to believe that we may succeed, under certain experimental conditions, to produce leprosy, in a monkey and if this is so, I hope that this will open the way to further experimental work.

Leprosy is a disease of the skin and of the nerves. There are some types of leprosy which are not so infectious as others. As a matter of fact there are certain cases of leprosy which can safely

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(2) Visiting Research worker in the Chiengmai Leper Hospital, cooperating with Dr. R. Collier under Research grants, supplied by the Thailand Govt. & the American Presbyterian Mission.

be considered non-infectious; these lepers constitute no danger to the public among whom they move.

INFECTIOUS AND NON-INFECTIOUS LEPEERS.

The infectious cases, however, are a potential danger to the public, and particularly to children. In most cases which we know, particularly in the tropics, leprosy is contracted in childhood and there is sufficient evidence to presume that children are much more susceptible to the disease than adults.

It might be mentioned that women show much greater resistance to leprosy than men. In countries where the incidence of leprosy is high we have found that to every two male lepers there is only one female leper.

There is one thing which I like to mention, namely it is not sufficient to know that there are infectious and non-infectious lepers, because anti-leprosy work in tropical countries cannot be based on the presumption that there are fifty per cent. lepers who do not carry infection and fifty per cent. who do.

As a matter of fact leprologists have come to the conclusion, after experience in many parts of the world, that in some countries the percentage of highly infectious cases is very low. This is the case in India. In other countries the percentage of infectious cases is very high and that applies to Thailand.

A very remarkable deduction from that fact is that the fight against leprosy in Thailand must vary very much from the type of antileprosy campaign which might be employed in India.

PREVENTION OF MUTILATION.

To the layman, it would appear that the most loathsome part of the disease is that the hands and the feet drop off. I should like to correct that view. Those limbs did not drop off. All they did was to disappear.

The difference in various types of leprosy, how they occurred, their degree of infection or non-infection, and how mutilation was produced, were next described. It is not sufficient merely to remove

those mutilated lepers from the street, but there is an urgent necessity to house them somewhere. Most of the mutilated cases belong, not to a leper asylum, but to a cripples' home.

The experiments conducted at Chiengmai have led us to the conclusion that it is possible, with the methods adopted there, to prevent in a great majority of the cases the onset of mutilation. Quite apart from the specific treatment of leprosy at Chiengmai, we feel we are now in a position to prevent lepers from getting mutilated and deformed.

TREATMENT OF INFECTED LEPERS.

Dealing with the problem of the infectious leper and what to do with him—the first question is:—Can we cure leprosy? If we are not able to cure leprosy, can we make the infectious leper non-infectious? It would be a great step forward from the public point of view if we were able to find a drug which would do the latter, but, I regret to have to say that the answer has to be "No."

For a large number of years chaulmoogra oil has been used in the treatment of leprosy, and a great deal of work has been done in the purification of that oil. From India the most extravagant claims of success had been spread. In 1928 the Indian leprologists made the claim that the problem of leprosy no longer existed, and that it was now possible to make infectious cases non-infectious.

That was a wrong claim, for we know to-day that the type of leprosy to be found in India is much milder than the type of leprosy to be found in Thailand, or Malaya or Central Africa. Another fact is also known to-day. There is a great number of early lesions in leprosy which cure themselves. But it varies in different countries. It is greater in India and smaller in Thailand.

Bearing that fact in mind we cannot honestly say that chaulmoogra oil can reduce the number of infectious lepers. But there is no doubt that a large number of lepers have been greatly benefited by the use of chaulmoogra oil, and that in some cases really excellent results have been obtained.

The introduction of this treatment only in a public health centre or in an out-patients' centre in Thailand would be a waste of time

and money, and dangerous for the peace of the public mind, because there are many other factors which have to be taken into consideration. It is possible to arrest the disease in quite a number of cases, even without drugs, and that can be done by changing the circumstances under which lepers mostly live.

CHANGING CONDITIONS.

It we give a leper good food, a clean house to live in and careful treatment, we will meet with the same success as has been claimed for chaulmoogra oil; if we happen to use chaulmoogra oil, we can provide a great amount of relief in individual cases but, as I have been trying to stress, we must have a vast amount of money for such a work.

ISOLATION OF INFECTIOUS LEPEERS.

This leads me to a most important point. If it is not possible to base the fight against leprosy on effective treatment, what can be done? Leprosy, as far as the specialist is concerned, is a disease which can be easily recognized, and, in my view as in the view of most experts, there is a very simple solution, the same which was followed in other cases of infectious diseases.

We must isolate the infectious lepers. Isolation of lepers has been in force in many countries from time immemorial. We have evidence that leprosy was present in China and India one thousand years before Christ, and we know to-day that it did not reach the Mediterranean until about three hundred years before Christ. We also know to-day that the disease in the Bible which was stated to be leprosy was not leprosy at all. It was some kind of a skin disease. The same remark applies to ancient Egypt.

The statement that leprosy was prevalent in Egypt three thousand years before Christ is due to a wrong translation of a word. In Europe leprosy was introduced five hundred years after Christ and it spread very rapidly. As a matter of fact in England there must have been, round about the year 1100, nearly fifty thousand lepers.

The same remark applies to Germany and to France. From those countries we learnt something of how to fight the disease.

There were influential people in those times who managed to change the attitude of people towards leprosy, and so, in the Middle Ages, lepers were forced into isolation.

The Church, too, assisted in the campaign and helped to procure larger sums of money than one could get to-day for the establishment of estates where the lepers could work. In this connection, there was one large estate, so formed in Europe in the middle ages, which had so much money that it was able to loan some for the development of the town.

In other countries like Norway and the Baltic States, too, leprosy has been known. In Norway towards the end of the last century there was a high percentage of lepers, and the Norwegians adopted very strict measures indeed to deal with the problem. To-day it is completely dying out in Norway. From what I have said I am sure you will realize that isolation as a very important consideration.

LEPROSY AND OTHER PROBLEMS IN THAILAND.

Now, coming to the problem of leprosy in Thailand, there are about twenty to thirty thousand lepers. Nobody knows the exact number as no survey has been made. We can only estimate the figures from the lepers we have seen in districts and towns and from figures obtained from amphur offices. I think that twenty-five thousand would be a conservative estimate.

Of those twenty-five thousand lepers, isolation in leper colonies is only given to about twelve hundred cases. While there is evidence that the problem is being tackled on very right lines, not sufficient attention is being paid to the work as a whole from the public health point of view.

Leprosy, though a very loathsome and horrible disease to the on-looker, is a comparatively rare disease. In most cases it is not as mutilating as laymen think it is. A large percentage of lepers are capable of working.

But in any public health endeavour it is necessary to realise that leprosy is not the only problem in a tropical country. There are a large number of other important problems which have to be considered, such as malaria, syphilis, worm diseases. An enthusiast

in the cause of leprosy must reckon with the fact that no big funds would be available for his work as there are other types of disease which also have to be attended to.

AGRICULTURAL LEPER COLONIES,

The first idea of isolation would be to put lepers into colonies and treat them well. That requires money, and very little money is to be had for this purpose either in Thailand, Malaya or India. The care of the existing leper colonies, either by the Government or the missions, has enabled relief to be given to a small number of sufferers from leprosy. Big colonies are very expensive. If the Thai people want to run progressive leper colonies with general treatment, proper supervision, etc., they will not be able to provide for more than two thousand or three thousand persons in Thailand; and I doubt if they can get sufficient money even for that.

Apart from the money consideration there is also the question of the medical personnel to fight the disease. They should have trained men able to diagnose the disease. It is not possible to embark on any anti-leprosy campaign if there are no men who know something about the disease. Leprosy is a special disease and there must be specialists, and those specialists must be locally trained men with wide experience; but so long as those men are not available it is difficult to do anything against leprosy.

THE TOC H ORGANISATION.

I like to cite as an example how the fight against leprosy was being waged in the British Empire, where there are about three million or more lepers. I have done some work in Nigeria with young men who had been sent out by the Toc H organisation, which came into existence after the Great War. These men had done and were doing very excellent work in co-operation with the existing organisations for the fight against leprosy. I think here is a way in which the various anti-leprosy agencies could get a sufficient number of trained men to tackle the problem.

EDUCATING THE PUBLIC.

Another fact in the campaign for isolation is educating the public. An anti-leprosy campaign could not be successful in a country where people do not believe that leprosy is infectious. It is not at the same time possible to introduce isolation through compulsion or the passage of legal enactment. If compulsion is resorted to, innumerable objections will be raised, and the anti-leprosy campaign becomes a failure.

The human mind is always adverse to doing things by compulsion. Therefore the important factor is education of the public mind, and, in my view, it is easy to stir up the public mind against a disease so horrible and loathsome as leprosy is. I think that in any propaganda against leprosy use must be made of the fear in man's mind of the disease. Propaganda can be launched against various types of disease, malaria, syphilis, worm complaints, tuberculosis, leprosy, etc., and in this way public health-mindedness can be created among a population which so far is not public health-minded.

It is absolutely necessary to make people leper-conscious before the campaign against leprosy can be started, but, dominating the whole problem, is the fact that there must be the trained personnel and there must be money to aid them in the fight.

SEGREGATION OF LEPERS.

How can all this be achieved? Before proceeding further I desire, first of all, to object very strongly to the consideration of treatment as the sole mode of attack. To constitute treatment centres is perfectly useless. It produces the thought in the minds of the public that such centres can cure leprosy and therefore the attitude is:—"Leprosy can be cured by injection. Therefore why bother about the disease?" Segregation is the plank to hammer at; after segregation can come the question of treatment in the colonies which had been started.

The mentality of the leper is not what people thought it was. Lepers do not shoot or hang themselves because they suffer from the disease. By their attitude to life lepers have shown to what extent

a normally constructed human mind can suffer. These lepers suffer social and domestic ostracism. People ran away from them through fear of the loathsome disease, but their mind is so constructed that they have ceased to mind that.

Another fact which is not known to laymen is the fact that lepers do not suffer any pain. Most of them are able to work. That being the case, the question of segregation becomes easier; but there are many factors involved in it. When the public mind has been educated to the fact that lepers ought to be segregated, then the question of establishing colonies for them will be less difficult. But one fact has to be borne in mind.

GOOD ORGANIZATION AND GOOD LAND.

The starting of leper colonies appears to be quite easy, but one cannot just dump those people in a desert and say "find your food yourselves." The colonists will run away at once. In forming leper colonies careful organisation is imperative. It is possible to establish leper colonies which will, in time, become self-supporting, especially in a country like Thailand where there are large tracts of land available for this purpose. There is no reason whatever why lepers in groups, and families, should not be placed on such land with a certain amount of money to start life with, to grow their own crops and in time become self-supporting.

The land given to them, however, must be good land. Treatment must also be provided to afford them relief; there must be men to look after them and work with them. The missions which are now working in co-operation with the Government have a great field before them; and, as is the case in the British Empire, I have no reason to doubt that men will willingly come forward in Thailand to what was essentially a humanitarian labour.

LEPER LABOR FOR ISOLATED INDUSTRIES.

I have already pointed out one type of commercialisation of leprosy in relation to fruit and carpets. That is the wrong type. I think of a more beneficial and benevolent form of commercialisation,

and it can be done in the following way:—Lepers can be used in Thailand on Government rubber estates or in trades where there is no direct contact with either the food-stuff or the people round about.

Such labour is cheap and will enable the Public Health Department to direct these people to work, which in the long run will be useful to the country. But it will be perfectly useless to start leper work on the lines suggested by me if it is not possible to put an initial sum of money at the disposal of the men interested in such work.

On the lines of establishing agricultural colonies it will be possible for Siam to succeed in eradicating leprosy. But no spectacular success is to be anticipated. The successful fight against leprosy is not a question of a few years, but a fight which will have to be waged for fifty or more years for success to be achieved.

THE *PUAK* YAM.

I proceed next to detail what result we hope to be achieved from the research work in leprosy. In some of the countries which I visited, I found that apparently infection to leprosy was bound up with a food-plant, known as *taro* in some parts of the world and as *puak* in Thailand. (A sample *puak* was shown to the audience).

I have reason to believe, and experimental evidence to support me, that this plant pre-disposes people to the leprosy infection and makes existing leprosy worse. The plant itself does not produce leprosy. Should this idea be confirmed we can tackle this part of the problem by eliminating *puak* from the market altogether. But that is a question which can be left to the future.

It is likely that, with all the scientific research now going on, it will be possible in time to find something else than isolation as an anti-leprosy aid, but a Public Health Department must not wait for that time. No one knows whether anything better than isolation can be produced, therefore isolation must be carried out.

I have no doubt that the trend of work in Thailand will be slow, but I feel certain that, as more public understanding of the problem is realised, the work now being done will be expanded, and that ultimate success will be achieved.

THE PRESENT LEPER INSTITUTIONS.

We have the Government Leper Asylum at Phra Pradaeng, which is being well run, but it is not large enough to take in a sufficient number of lepers in order to cope with the problem of leprosy on a wider basis. Then there is the mission hospital in Nakon Sri Tamarat, and also the leper colony in Chiengmai, both of which suffer under the same disadvantage as the Government asylum.

I want to say one word about Chiengmai. The people up there are fortunate in having such a very fine model colony for anti-leper work, a colony which is much better than many a colony I have seen elsewhere.

When I compare the facilities which were put at my disposal at Chiengmai by the American Presbyterian Mission and also by the Thai Government and the Mission at Nakon Sri Tamarat, with those offered me in other areas, I begin to realise that the leper work in Thailand is more advanced than in many countries I have visited, with the exception of Malaya where more money is available. But the leper work in Chiengmai can very well stand up before the leper work done in India or in some parts of Africa.

I wish to express my sincere gratitude to the Thai Government, to the American Presbyterian Mission, to the American Mission for Lepers, and to all those friends who have helped and assisted me in this work in Siam.

It is unfortunate that I am compelled to break up that association before I want to. I particularly wish to thank my dear friend, Dr. R. Collier of Chiengmai, who has done everything possible to help me with his experiments and has given me the benefit of his long experience.

I conclude by expressing the hope to the Thai people that in due time leprosy will cease to be a big public health problem, as it is sure to be in this beautiful and prosperous land; I also hope that I will be enabled to return to Thailand in future years to see for myself that the present lines of endeavour, so promising of fulfilment, have been continued to a successful conclusion.

THE DISCUSSION.

On the invitation of Dr. McFarland some members of the audience asked questions arising out of points stressed by the lecturer.

Mr. J. E. Davies said that the lecturer had rather decried the value of treatment by chaulmoogra oil. He had emphasized certain other things which were more important. Might he ask what did the oil actually do when it was injected?

Dr. Oberdoerffer said he was sorry to say no one was able to say with any certainty what chaulmoogra oil did, because it was not possible to make experiments with animals to find that out. The prevalent opinion was that chaulmoogra oil was effective in some cases but not in the majority of cases. Its so-called success in India was dissipated with the more recent knowledge that there was such a thing as a self-healing method in leprosy.

Dr. McFarland said he would like to know something more about the *puak*. Did it pre-dispose, did it irritate or was it a poison that produced leprosy? He had been in the country many years and had seen many poor families eating it. If it was poison then the best thing was to ban it from the market and chuck the stuff to the pigs.

Dr. Oberdoerffer replied that it contained a substance called *sapotoxin*. It did not kill people. The man who was constitutionally pre-disposed to leprosy and ate *puak*, would be open to infection, while it developed a more serious type in those who were already affected. An interesting thing was that in India, where leprosy was wide-spread, though mild, people ate very little of the *puak*, while in Thailand, where leprosy was more severe in type, people ate a lot of it:

In the Shan States, among some tribes who lived mostly on *puak*, leprosy was prevalent to the extent of from ten to fifteen per cent. of the total population. Among the Lahus, who ate less, the percentage was three; while among the Shans, who ate *puak* as much as the Thai did, the percentage was one to two per thousand of the population,

STERILISATION VERSUS SEGREGATION.

H. S. H. Prince Varnvaidyakara Voravarn said he quite agreed that segregation was the best measure to be adopted. The lecturer had said that in order to be successful colonies should be fairly big economic colonies of say about a thousand persons. The lecturer had also spoken about eradication. What about the infection of children? Was it hoped that in those colonies, life being sound and healthy, people would lose their infection?

Dr. Oberdoerffer said he was very glad His Serene Highness had brought up that question. About twenty per cent. of children produced in those colonies would undoubtedly be lepers. The answer to that problem, therefore, was the sterilisation of the lepers, or to take the children away from them. But if lepers brought into the colony were told they were to be sterilised they would not come to it.

The other proposition would be to segregate the children at birth and eliminate infection. That would be a question of money. The first thing was to place the lepers in colonies of their own, and if this were systematically carried out it would help considerably in reducing the leprosy figures. But the important thing was to make life pleasant and attractive for lepers in such colonies.

As there were no further questions, Dr. McFarland invited Dr. A. Viehoever to propose a vote of thanks to the lecturer, and this was done in terms of considerable admiration, the speaker wishing Dr. Oberdoerffer God-speed, the best of health, success wherever he was, and expressing the hope that Dr. Oberdoerffer would return to Thailand, where he could continue the very useful work, in co-operation with others for the welfare of Thailand.

The vote of thanks was carried with acclamation, after which Dr. Oberdoerffer received individual congratulations on his very lucid and very instructive lecture.