

EDITORIAL

One of the dangers of the war is that it should be allowed unnecessarily to paralyse our efforts to help those in need and distress. While it is necessary that the exigencies of the war should receive first place, the claim of the fight against disease and distress should not be forgotten. The daily work in a leper settlement may need as much pluck and patience as fighting in the trenches. The British Colonies have one and all shown their loyalty to the Mother Country in this time of danger, and our Association will do its utmost to maintain the fight against leprosy and to help our fellow subjects in the colonies afflicted with this disease. In this we trust that we shall continue to receive the support of the British public.

*

*

*

SUGGESTIONS FOR INVESTIGATIONS IN LEPER SETTLEMENTS

The writer has from time to time been consulted by those in charge of leper settlements as to what investigations they could usefully undertake in the course of their daily work. Facilities for complicated laboratory research are available only to the few who have the necessary leisure, apparatus and trained staff; but there are many lines of investigation which the busy settlement doctor can fit in along side his daily clinical and administrative work. With rich clinical material at hand, with his knowledge of the people, and the good will and confidence he has already won, he is in a position to gather facts and try out living experiments which would be difficult or impossible to the laboratory worker, or the pure scientist.

The intensity of the instinct which prompts research varies in different individuals, but many doctors, once they realise that a problem is within their power to investigate, are glad to spend time and energy on its solution, and in doing so find the interest and the scope of their ordinary routine amplified.

The Leonard Wood Memorial Conference on Leprosy in 1931 made a number of suggestions on research into epidemiology, clinical studies and therapeutic experimentation, diet, etiology and pathogenesis, biochemistry and pharmacology. While many of these problems require special laboratory facilities, there are some which are quite within the scope and opportunities of the leper settlement doctor.

Epidemiology. Under this heading the Leonard Wood Memorial Conference Report states :—" It is believed that studies in the epidemiology of leprosy are greatly needed. There are serious defects in our knowledge of the incidence with regard to race, geography, environment, occupation, climate, family history, age, sex, and diet; also the incubation, duration, apparent spontaneous disappearance, incidence among healthy attendants in leprosaria, spread in newly invaded areas, apparent immunity in certain districts or areas as compared with others, etc." The more recent International Congress in Cairo has furnished most useful recommendations for epidemiological investigation (*Leprosy Review* IX-4, Oct. 1938, p.152-6). The inexpert worker will find these recommendations a guide as to how he should set about a survey in his own area; and when several surveys based upon a uniform standard have been completed it should be possible to compare accurately leprosy as it exists in different areas and countries. Such accurate comparisons have never yet been possible; when they are available they may form a basis for investigating the obscure causes of variation in the types and severity of the disease. Take for instance ten per cent of lepromatous cases in the Belgian Congo (*Leprosy Review*, X-1, Jan. 1939, p.25) compared with 56 per cent in Burmese villages (*Leprosy Review*, X-3, July 1939, p.189). These are only rough calculations made during hurried visits to limited areas, but they suffice to show the great need for careful and detailed survey along standard lines.

What is the cause of higher resistance in one community as compared with another? Many suggestions have been made, such as inherited resistance due to gradual elimination of susceptibles throughout many generations; diet or food poisoning (*Leprosy Review*, X-2, Apr. 1939, p.112-4); and climate. There seems little doubt that leprosy is particularly severe in those of mixed European and Indian race; but it is difficult to say whether that is due to any physiological peculiarities or to the general adverse conditions under which Anglo-Indians so often live. Among patients admitted to the Pretoria Leper Institution, almost a hundred per cent. of Europeans and only twenty-five per cent. of Africans are lepromatous in type; yet they have lived in the same climate and malnutrition is perhaps equally common in both communities. What is the reason?

The Lepromin Test (*Leprosy Review*, V-2, Apr. 1934, p.83) is simple to carry out, and is the one test in leprosy which can lay claim to specificity. Dr. Rotberg's article reviewed in this journal (*Leprosy Review*, X-2, Apr. 1939, p.130-2) suggests many useful applications of this test in investigating the question of resistance.

Dr. Hayashi's *Age Distribution Curve in Leprosy* appearing in the International Journal of Leprosy, reviewed in this Journal, (*Leprosy Review*, X-3, July 1939, p.192) might be profitably repeated wherever leprosy is common. This paper raises the interesting question : does the age curve move to the right and the average age of lepers increase as the disease tends to die out of a community?

On page 208 of this issue, an article is republished which shows a method of conducting and recording a survey in a limited area, and dealing particularly with family history. In addition to the general value of the information gathered, such a survey may be used with considerable effect in persuading the inhabitants immediately concerned to take precautionary measures against the spread of leprosy infection.

This number also includes a note on the *Distribution of Leprosy in N.W. China*, showing a wider and less detailed survey which has gathered together valuable information.

The article by Keil on *Hereditary Factors in Leprosy* in our last issue suggests another possible line of approach to the question of immunity.

We would also refer to the survey of the Solomon Islands by J. Ross Innes, appearing in this Journal in July, 1938, and the *Field Study of Leprosy in Cebu*, by Doull and others, in the *International Journal of Leprosy*, IV-2, Apr.-June, 1936, both of which are full of useful suggestions.

Clinical Studies. The clinical manifestations vary in different countries, both in nature and in proportion. For instance, in West Africa doubts have been expressed by workers as to whether certain macules were of the neural or lepromatous type, and whether they were residual or active. In recent years very careful and detailed studies of leprides, or leprous macules, have been made by several workers, and especially by Wade, and recorded in the *International Journal of Leprosy*. A short paper on page 221 of this issue seeks still further to simplify this subject. With the help of these descriptions it should be possible to classify most cases according to the Cairo Congress classification. In doubtful cases, however, where clinical and bacteriological examinations still leave doubt, histological examination is necessary. Many of our readers have no laboratory facilities; but it is not difficult for them to collect material by biopsy and send it to those who would be willing to carry out and report on such examinations. Remove a small elliptical piece of skin, making incisions deep enough to include subcutaneous tissue. Place this tissue in 70 per cent alcohol and

change the alcohol after 6, and again after 24 hours. Then send in a tightly corked tube, lightly stuffed with cotton, and with enough alcohol to saturate the cotton. An accurate description of the patient and of the lesion, and if possible a close-up photograph, should accompany the tissue. Once there is certainty of the types and subtypes of lesions it is important to make accurate classifications and to compare the differences of types in each area.

The onset of leprosy in children is another subject which requires careful and prolonged study. There is still uncertainty about the earliest signs in children and these vary in different countries according to the colour of the skin and other factors. A careful record, with repeated examinations extending over a period of years, is necessary to clear up these points. For guidance on this subject see the article by Cochrane and Rajagopalan (*International Journal of Leprosy*, VI-3, July-Dec. 1938, p.325).

In an editorial in the January-March, 1939, number of the *International Journal of Leprosy*, Professor Marchoux refers to this subject, in connection with the future of non-leprous contacts in which gland puncture reveals lepra bacilli. "This can be ascertained," he says, "only by leprologists who observe their patients for years, or by those who, by keeping records of the results of their examinations, will enable their successors to find out what becomes of an infection verified by a puncture."

The lepromin test has already been referred to above; it should be of great value in combination with clinical studies.

Therapeutic Experiments. Doctors in charge of leper settlements are in a unique position for testing various forms of treatment. It is always well first of all to become familiar with standard methods, chaulmoogra oil or esters being used for special treatment and the general condition of the patient being toned up by removal of complications and by well-regulated regimen. But on the standard treatment as a basis there are many forms of treatment, both for the disease itself and for complications which can be tried out.

The sedimentation test, carried out regularly at weekly or two-weekly intervals, has been found by those who have given it a fair trial to be an invaluable help in regulating treatment and eliminating complicating conditions. With the aid of this test it is possible to make tentative experiments with other drugs without undue risk to the patient, since the slightest deterioration of health which may occur as the result of the treatment is recorded in the most delicate manner by the sedimentation index. The most powerful reaction producer in leprosy is potassium iodide,

so much so that some authorities consider it should not be used at all. The writer, however, is of the opinion that when used as he has recommended (*Lep. Diag. Treat. and Prev.*, Sixth Edition, p.181) with the aid of the sedimentation test, this drug may be of great value in carefully selected cases, and it is possible that careful experimentation might still further extend its safe use.

Among the complications of leprosy which have been studied, but the treatment of which still requires improvement, are lepra reaction, trophic ulcers, nerve and bone pains.

Animal Inoculation. The study of leprosy is still handicapped by lack of suitable experimental animals. Recent reports of successful inoculation of human leprosy in the golden hamster (*Cricetus auretus*) still await general confirmation; but the *Rodentia* seems to be the most promising natural order. There are innumerable forms of rodents within reach of leprosy workers which could be easily caged, fed on various diets, and inoculated with leproma suspension; success might be of immense value in opening up the path for further research.

These are a few out of many problems which do not require whole-time research workers, but may be gradually solved in the course of every day routine by doctors in charge of leper institutions who are willing to co-ordinate their work, observe closely and record their observations.