EDITORIAL

THE TREATMENT OF LEPROSY AND THE TREATMENT OF TUBERCULOSIS.

There was a time when leprosy and tuberculosis were considered as two entirely unrelated diseases, different in every respect except perhaps in chronicity.

When the two organisms were discovered (and the discovery of the leprosy bacillus came first, and possibly led to the discovery of the tubercle bacillus, for Koch was undoubtedly influenced by the work of Hansen) the similarity of the two organisms was recognised. More than 20 years later certain histopathological relationships were recognised, and these led to our present use of the term tuberculoid leprosy.

During the last two decades two new factors have appeared. Studies by several workers, particularly Fernandez in the Argentine, have shown that there is some immunological relationship between the two infections. Further, chemotherapeutic studies in vitro, in animals, and in man, showed that sulphones had some activity against the tubercle bacillus in vitro and in animals, and also against the leprosy bacillus in man. Thus, some chemotherapeutic relationship between these two infections has become recognised.

Studies with sulphones against the leprosy bacillus in vitro and in animals were ruled out by the failure to cultivate or to infect animals with the leprosy bacillus. Studies of sulphones in human tuberculosis did not give clear cut results, and the studies were cut short by the advent of streptomycin and later P.A.S. thiosemicarbazone and isoniazid.

But it has never been clearly shown that sulphones have no real value in the treatment of tuberculosis, although it is clear that other agents, particularly streptomycin and isoniazid are much more active. It is possible that sulphone is as active as P.A.S., or even as thiosemicarbazone, in tuberculosis. Moreover, it has been shown that sulphones possess (but to what extent is not clear) the important property of P.A.S., namely, that when given in combination with streptomycin, the development of streptomycin resistance in the tubercle bacillus is delayed.

Of the therapeutic agents mentioned, thiosemicarbazone is little used in tuberculosis because of toxicity, and sulphone is little used for lack of real evidence of its value. Streptomycin and isoniazid remain in use because of their marked activity until drug resistance develops, and P.A.S. remains in use as a method of delaying this resistance.

But sulphone should not be entirely forgotten as a possible chemotherapeutic agent in diseases other than leprosy. Sulphones have their main function in the treatment of leprosy, but they may also have their wider uses, and it is the leprosy worker who may be able to give evidence on this matter.

Patients suffering from leprosy frequently suffer from other infections, and a very common one is tuberculosis. Is it the experience of physicians treating leprosy that sulphone is of value in the treatment of tuberculosis occurring in their leprosy patients?

On this question there are available four pieces of evidence. The first is the report of Gray and Bancroft, (1952) (*Internat. Jour. of Lep.* **20** p. 463), from the National Leprosarium, Carville, Louisiana, U.S.A., where sulphone treatment of leprosy was first used. These workers state, and give strong evidence to support their statement, that since sulphone treatment of leprosy became general in their institution the incidence and the mortality of tuberculosis among their patients has fallen markedly and steadily; they attribute this to the effect of sulphones on tuberculosis infection.

The Editor, in 6½ years' experience of treating leprosy in Nigeria, came to the same conclusion, that the routine use of sulphone treatment of leprosy had produced a definite fall in the incidence, severity and mortality from tuberculosis among his patients. This matter is referred to briefly in an article in the present issue.

In our present issue we also publish a report by Dr. C. J. Austin of findings in the leprosarium in Fiji in which he reports similar findings, and also stresses the great value of isoniazid in the treatment of tuberculosis in his patients.

Our fourth report on this matter is also contained in this present issue in an article by Dr. Relvich, based on experience in West Nigeria. His report states that he has seen no evidence that the sulphone treatment of leprosy has reduced either the incidence or the severity of tuberculosis among his patients.

Thus, of the four witnesses when asked " Does sulphone treatment have a favourable effect on tuberculosis in leprosy patients?, three answered yes, and one answered no.

The Editor, being a witness of one side in this matter, cannot claim to judge the matter quite impartially, but he thinks that the evidence for the favourable action of sulphone in tuberculosis is very strong. In all the three favourable reports the patients were under close medical supervision for a period of several or many years; in the one unfavourable report the patients were in outstations, with much less close supervision, and the experience reported is considerably shorter.

If it is accepted that sulphones exert a favourable effect on tuberculosis, we must try to go further and say how this effect is brought about. The findings reported could be explained on the basis that sulphones exert a suppressive action on tuberculous infection; that in patients with latent infection, the infection is kept latent; that in patients with patent infections, the progress of the disease is arrested or slowed down. These ideas would be in accord with the Editor's personal experience in Nigeria in the treatment of tuberculosis in leprosy patients. His findings were briefly as follows. Sulphone given alone as a treatment for patent tuberculosis gives disappointing results; in very few cases is the disease arrested, although its progress may be slowed down. The combination of sulphone with either or both of the more active agents, streptomycin and isoniazid, has given much better results. In some cases, arrest of the disease has been produced; in other cases the acute disease has been controlled, and the disease has been rendered mild and chronic; definite clinical indications of the tubercle bacillus having become resistant to treatment have not been marked, but unfortunately tests of drug resistance have not been possible.

Thus the role of sulphones in the treatment of tuberculosis might possibly be that now allotted to P.A.S.—a minor but an important one; its own action on the infection is slight, but it enables the other agents, streptomycin and isoniazid, to act more effectively and for a longer time. It should be mentioned that sulphone is much cheaper and easier to give and to take than is P.A.S., the dose being 1-200 mgm a day of Dapsone, instead of 15,000-20,000 mgm a day of P.A.S.

In the Editor's experience in Nigeria, tuberculosis of the lungs can often be treated successfully with these three drugs, streptomycin, isoniazid and sulphone. Isoniazid and sulphone can be given every day for very long periods, and in addition streptomycin should be given when it is indicated, and for as long as it is advisable or possible. One or more courses of at least several weeks' duration are often of great value, and administration may be every other day and not daily.

The Editor's experience of thiosemicarbazone in the treatment of tuberculosis in Africans has not been as favourable as reported by Dr. Relvich, and he prefers the therapeutic agents mentioned above.

In our present issue we abstract a report on the value of isoniazid in the treatment of tuberculosis in African children, which may be of general interest.