MODERN LEPROSY TREATMENT.*

By DR. C. J. AUSTIN, O.B.E.

THE PRESENT POSITION OF LEPROSY TREATMENT

On being asked by your assiduous Secretary to give you an "up-to-date" assessment of the results of the modern treatment of leprosy, I immediately sent off an SOS to Makogai for the latest information, for in these days of rapid change I already feel something of a back number, although it is only about six months since I left the Islands.

From the information received, however, it does not appear that there has been any spectacular progress in the interval, but it is a great satisfaction to hear that so many whom one had seen starting on the upward path are continuing to improve.

As a general background, it may be of interest to note that the average daily number of patients at Makogai last year was just under 700, of whom approximately 58% were from Fiji, and 42% from beyond the Colony—i.e. from Samoa, Tonga, the Cook, Niue or Gilbert Islands. This represents the lowest figure for Fiji itself since 1938, but is partly explained by the fact that patients are now retained under supervision at Makogai for one year only, instead of the previous two years, from the time they cease to show activity of their disease. I think we may definitely regard this as a step in the right direction, both as an indication of our confidence in modern treatment, and as a tribute to the adequacy of the follow-up service, by which discharged patients are traced and examined at regular intervals.

Fifty-seven patients were discharged during 1952, of whom 41 were Fiji residents and only 16 from overseas, but here again it is necessary to point out that this large preponderance of patients from Fiji is due, in part at least, to the fact that until this year Fiji alone had reduced the period of surveillance at Makogai. This change-over has now been adopted by the other administrations, and 57 patients have already been discharged from Makogai this year, of which number 31 were from Fiji and 26 from beyond the Colony. The latter figure includes 10 from the Cook Islands, 8 from Samoa, 6 from the Gilberts and 2 from Tonga. On the whole the change in Regulations is likely to affect the Cook Island patients,

*A paper originally presented at the Second Leprosy Trust Board Conference, Christchurch, New Zealand, September, 1953.

the majority of whom are early cases, to a much greater extent than the Samoan and Gilbert Island people, who have a larger proportion of the more advanced cases.

Mortality last year was remarkable in two ways—firstly, in that there were only thirteen deaths, the lowest number since 1920, when the sick population was about one-third of the present total: and secondly, in that it included no deaths from tuberculosis which has always been regarded as one of the important causes of death in leprosy patients. I think there is no doubt we can attribute both of these improvements very largely to the effects of modern therapy, although, as the certified causes of death showed that nine of the 13 deaths were directly or indirectly due to leprosy itself, it is evident that we still had a hard core of advanced cases beyond the power of any drug so far tried, to ameliorate. This is not surprising, for although in the great majority of cases the organism of leprosy directly attacks only skin and nerves, the continual excretion over a number of years, of the toxins produced by the disease, naturally results in such a degree of degeneration of the essential tissues of the kidneys, liver, and intestines, that these organs are rendered almost functionless, and the body is thus shorn of its main defences.

That this low death rate for 1952 is more than a chance figure is supported by the fact that up to the middle of August of this year —a period of 7½ months—there have been only six deaths. I have no information as to whether these deaths included any attributed to tuberculosis.

With general reference to the latter disease, our results serve to endorse your conclusion that leprosy cannot be successfully attacked as a separate entity, and your consequent policy of regarding the struggle against leprosy as part of a general medical programme. In my paper to your first Conference, I remarked that " as a poor relation of Tuberculosis, which being widely spread among the more affluent populations of the world, has more money and attention devoted to it, leprosy is sometimes able to benefit from the crumbs that fall from the rich man's table," and I added that " the Sulphone drugs may be regarded as among such crumbs " for they had been first tried out in tuberculosis. To the sulphones I would now add the thiosemicarbazones, isonicotinic hydrazide and streptomycin. These drugs not only appear to have a beneficial effect on leprosy itself, but naturally help us greatly in its tuberculosis complications.

At the end of last year, I was able to record that although we had 23 certified cases of tuberculosis, only 6 of these had required treatment for active disease during the year, the disease having been rendered quiescent in 17 patients who had therefore

been enabled to return to their respective villages at Makogai for treatment of their residual leprosy. In the same report, I spoke of Pycazide—a form of isonicotinic hydrazide—as " having been given to patients in more advanced stages, most of whom had failed to improve under, or even to tolerate, other drugs. Fourteen of the sixteen in this series had been subject to constant or frequent lepromatous reactions, which in some cases resulted in actual ulceration. In all but one of the reactionary cases, the reactions either ceased or were greatly diminished under Pycazide. In the one exception, the ulceration cleared in spite of the fact that reactionary fever continued. Three of the patients, including the last mentioned, were also suffering from pulmonary tuberculosis, accompanied in one case by tuberculosis of the spine and in another by ischio-rectal abscesses. The two latter patients were regarded as moribund, but both have become apyrexial, and each has put on more than a stone in weight."

The one referred to as having ischio-rectal abscesses—a young Gilbert Island boy—deserves a note on his own. He was not only suffering from almost constant lepromatous reaction, but his x-ray picture showed what can only be described as a " shower " of tuberculous shadows involving the whole of both lungs, but especially heavy in the right sub-apical region. In the process of clearing, this latter area developed a mass of fibrous tissue, which, by contracting, pulled the whole heart over to its own side, so that practically the whole of the cardiac shadow could be seen to the right of the sternum instead of to the left. It is not surprising, therefore, that his convalescence was attended by sundry fainting episodes in the process of attempted accommodation to the new cardiac position, and it is a relief to know from recent reports that he is continuing to do well.

Before leaving the subject of tuberculosis, I may perhaps refer to the " bad old days " prior to your gift of the x-ray plant, when our impression was—and this was fairly general throughout the Colony of Fiji—that our Islanders were particularly susceptible to tuberculosis, and that once they had it, their chances of surviving more than a few months were very slender. It was only gradually that we began to realise we were failing to recognise anything but the advanced stages. Since then, an x-ray survey of all tuberculin-sensitive patients and of all fresh admissions has enabled us to diagnose and treat the earlier stages which are so eminently favourable. Now that we also have more potent drugs, tuberculosis should soon cease to be the dread complication that it has proved in the past, especially as by treating leprosy with these drugs, which may be regarded as dual-purposive, we may well be nipping incipient

tuberculous infections in the bud, before they can become clinically recognisable. Most Makogai patients are taking some form of sulphone treatment and many are still on Sulphetrone, the drug with which we started our sulphone trials at Makogai. Ten patients in fairly advanced stages of leprosy, with reactionary ulceration, who were unable to tolerate sulphones in any ordinary dosage, have improved considerably on intramuscular injections of 25 or 50 mg. of Sulphetrone, which, being only about 1/60 of the normal dose, might well have been thought too ridiculously small a dosage to have any effect whatever. Nevertheless lepromatous ulcerations of skin and throat have cleared under this regime when all else had failed.

Sulphetrone is, however, a proprietary drug, and as such, necessarily more expensive than its basic principles—diamino-diphenyl-sulphone—from which it is built up—and to which it breaks down in the body. Diamino-diphenyl-sulphone—DADPS, DDS, or Dapsone—as it is now variously called—was originally considered too toxic for human use, but has since proved equally effective, in very much smaller dosage, with Sulphetrone or any other of the proprietary sulphones. On grounds of economy, therefore, as well, perhaps, as of safety, it is steadily replacing the proprietaries in most leprosaria.

Experimental work is still proceeding with several other drugs —notably the thiosemicarbazones, as represented by Thiacetazone and Ethizone; and isonicotinic hydrazide or Isoniazid, as it is now officially termed, as represented by Pycazide and Cotinazin. To quote from my report on Thiacetazone—" of 27 patients who had proved intolerant to sulphones (16 constant severe reactions, 8 with psychotic manifestations, and 3 with drug rash), 10 were recorded as ' Much Improved,' 10 as ' Improved ' and 7 as ' Stationary '; and regarding Ethizone 9 ' The results in those intolerant to sulphones are definitely encouraging.'' Summing up, I added—" It does not, therefore, appear to me from these results that the thiosemicarbazones are likely to supplant the sulphones, but they may well prove a very useful auxiliary, either as part of a combined treatment, or as a substitute in cases where patients are unable to tolerate the sulphones.

Regarding the Pycazide form of isonicotinic hydrazide I have already quoted from my report, but with Cotinazin, which we tried on earlier cases of leprosy, we had less success, though this did not seem to be due to any difference between the two drugs, and I concluded my report with the view that Isoniazid appeared to be more effective in the advanced stages of leprosy, and particularly in patients with frequent reactions. I now understand that a roughly

similar view has been taken of results from Isoniazid in tuberculosis.

A small series of ten patients were put on a Dublin product—B 283, or, if you will, 2 anilino—3 amino—5 phenylphenazide hydrochloride—which had been lauded in Nigeria for its efficacy and for its superiority over the sulphones in the treatment of leprosy. Seven of the ten patients showed about the same degree of improvement as would have been expected with the Sulphones: one patient seemed worse, and two remained about the same. This is much too small and short a test, and if a further supply of the drug can be obtained, we shall await the results of an extended test with interest.

Taking an overall picture of last year's results at Makogai—of 704 patients reported on, 217 had become Inactive and 283 were graded as Improved; 155 were recorded as Stationary, but many of these had already been upgraded—e.g. from Lepromatous 2 to Lepromatous 1—so that it would have required a high degree of improvement to be recorded. 36 were regarded as Worse, and I have already alluded to, and commented on, the 13 deaths.

A few years ago, these results would have been considered remarkable, as indeed they would have been—and it is a tribute to present-day treatment that we take them for granted, and even think that the number recorded as Stationary calls for an explanation. With the small doses of sulphones now employed, fewer patients prove intolerant, but we are extremely fortunate that other drugs, such as the thiosemicarbazones and isonicotinic hydrazide, are now available for the comparatively few cases completely recalcitrant to the sulphones.

I cannot, however, too often emphasise that drugs, however efficacious, are still by no means the only factor in treatment. I have briefly referred to the effect on the tuberculosis aspect, and consequently on the whole leprosy situation at Makogai, of your gift of an x-ray plant some years ago. Electro-therapeutic equipment is virtually, if not literally, on the way, and judging by the personal reports received from New Caledonia, will do much to alleviate pain, and prevent or repair deformities. Your never-failing generosity in all directions continues to bring physical and psychological uplift to sufferers—not only at Makogai, but throughout the South Pacific—and offers the firmest of foundations on which modern drugs can play their essential part in building up disease-resistant bodies.