REVIEWS

Leprosy in India. Vol. 27, No. 3, 180-85, July, 1955. 16 figs. on 6 plates.

Dharmendra, S. N. Chatterji and N. R. Sen write on *A By-Product of DDS for Treatment of Trophic Ulcers in Leprosy.* The by-product used is obtained in the manufacture of DDS, and is the substance from which DDS has been extracted with the use of alcohol. It is a dark coloured sticky substance, containing a quantity of 2:4-diaminodiphenyl sulphone, in contrast to DDS which is 4:4 diaminodiphenyl sulphone. The former is much more soluble in alcohol than the latter. The sticky substance also contains a certain amount of DDS. It is applied to trophic ulcers of the soles of feet as a dressing and the patients are allowed to walk about. The treatment was used in 22 patients chiefly of the tuberculoid type, 18 of which had had previous treatment without results. In 15 the ulcers healed completely and had remained without relapse for a period of a year. In the others, though the ulcers became cleaner and smaller, there was not complete healing. X-ray examination showed that in those that did not heal there was diseased or dead bone. Trials with DDS dissolved in alcohol showed that the healing effects could not be due entirely to the DDS present in the by-product.

A. T. Roy gives his experience with *Thiosemicarbazone in the Treatment of Leprosy,* in DDS Intolerant Cases and in Combination with DDS. Nine patients intolerant of DDS because of lepra reaction were treated with thiosemicarbazone with a daily dosage of 25 rising to 150 mgm. The reactions were less severe and frequent than they had been with DDS, and there was clinical and bacteriological improvement. A combination of DDS and thiosemicarbazone did not give better results than with either drug separately.

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J. S. Shuttleworth writes on *Clinical Studies in the Use of Cortisone and Corticotropin in the Reactive Episodes of Leprosy.* In the National Leprosarium, Carville, 63 per cent of lepromatous cases have erythema nodosum reactions, and of these about 93 per cent occur after receiving sulphone treatment. Cortisone and corticotropin were found particularly useful in controlling the more acute reactions, but in the more chronic forms the results were more doubtful. In neuritis caused by leprosy the value of hormones is very definite, and it may be possible to prevent severe nerve damage if their use is begun in time. Ten cases are detailed showing

the effects obtained with these hormones often after other remedies had failed. The oral dosage of cortisone was 50 mgm. every 6 hours, diminishing to 12.5 mgm. twice daily in one case. In another it was 100 mgm. twice daily, diminishing to 50 mgm. twice daily continued for a month. One patient was kept on 50 mgm. of cortisone 4 times daily along with diasone for 7 months, during which the erythema nodosum reaction was successfully suppressed. further work on the effects of hormones in controlling leprous neuritis is being undertaken.

A review of *The Value of Slow-acting Chemotherapeutic Agents in the Campaign against Leprosy* is given by L. Lauret, P. Laviron, P. Kerbastard and C. Jardin. In French West Africa it is calculated that there are about 250,000 persons with leprosy. To control the disease it is necessary to take the treatment to the patient by means of mobile units, which at the same time deal with malaria, trypanosomiasis, ophthalmic conditions, etc., visits being made once or twice a month. The question of the most effectve method of administering sulphones to these wide-spread leprosy patients has been studied for the last 5 years, especially whether it was better to give DDS tablets daily or twice-monthly injections of a suspension of DDS. At present the treatment for those in the field is 1.25 gm. of DDS suspended in 5 or 6 cc. of ethyl esters of chaulmoogra oil, and injected intramuscularly twice a month. In 1955 as many as 36,000 patients received this form of treatment. It is considered that the chaulmoogra adds to the effectiveness of the treatment, and that better results are obtained with these injections than with oral DDS. The latter treatment, however, is reserved for those in towns who can attend more regularly. It may be found possible to extend the interval between injections to once a month, as the drug is very slowly absorbed.

H. Floch gives his experience of *Slowly Absorbed Injections of Coarse-Grained DDS.* He finds that by injecting DDS suspension he has fewer leprosy reactions than with oral administration. As suspending agents he has tried pea-nut, olive and chaulmoogra oils and also chaulmoogra esters. With these he has got good results, but he prefers an agar-saline menstruum (0.2 per cent)using DDS grains of 90-120 micromillimeters, and giving 1.5 gm. of DDS every 3 weeks, or 1.8 gm. once a month. He does not consider that the chaulmoogra menstruum adds to the effectiveness of DDS.

H. Hibi describes his *Findings in the Leprous Cornea with the Slit-Lamp Microscope* from a study made at the Nagashima Aiseien National Leprosarium in Japan. The 103 patients were divided into 4 groups, A, B, C and D, according to their age group. A

group being those under 15. The anterior part of the eye was examined with the Hartnack loupe, and the results compared with the findings with the biomicroscope. The principal changes found were: (1) thickening of the corneal nerve with a beaded effect in 47 per cent, found in all types of the disease, but chiefly in lepromatous; (2) new vascularization of the limbus in 60 per cent, only found in the lepromatous type; (3) pannus in 49 per cent, but only in the lepromatous type. It is considered that such examinations may be useful in classifying cases and even in making a diagnosis of leprosy. " In 8 of 25 lepromatous cases in Group A, infiltration in the face and limbus was almost indiscernible and the clinical appearance was of neural leprosy; but with the biomicroscope leprous changes in the limbus corneae were observed in 6 of them, and pannus corneae in 4."

A. Nègre and R. Fontan write on their experience of *Physiotherapy in the Sequelae and Complications of Leprosy.* Various forms of electro-therapy were used at the Orafara Sanatorium in Tahiti. The principal conditions treated with benefit were neuritis, perforating ulcer, claw-hand and paralysis. If any one form of treatment is not successful in a patient, another form is substituted. " Morphine, previously used in large doses, in the treatment of neuritis is no longer in use; ' neuromas ' subside after a few treatments; plantar ulcers, even old ones, can be healed in 20 days at most. If there are relapses, the same treatment can be repeated with success." The various forms of electrotherapy used are: faradic current, short wave, exponential, infra-red, diathermy, radio-therapy, ultrasonic, ionization with potassium iodide or calcium chloride. It is claimed that in 88 per cent of neuritis cases they were cured, often at one sitting, without any later relapse of pain.

The same writers also make a *Contribution to the Study of the Pathogenesis of Bony Lesions in Leprosy.* They consider that lesions of the small bones of the hands and feet are due partly to small injuries following anaesthesia of the hands and feet, and partly to vascular disturbance following neuritis of the supplying nerves. Periodically radiograms were made of 110 patients, and it was found that between February and June of 1954 considerable degenerative changes had taken place in the bones. It is difficult to remedy this, as it continues even after active disease has been checked by sulphone treatment.

A third contribution by the same two authors deals with the *Radiological Appearances of the Lungs in Leprosy.* Out of 110 leprosy patients who were subjected to radiography of the lungs, the

examination being repeated after a year, 3 showed shadows on the second occasion, shadows being absent on the first. These occurred during lepra reaction, but disappeared after the reaction had subsided. It is considered possible that these shadows were due to a temporary allergic infiltration similar to reactionary infiltration in the skin. It is suggested that where possible the lungs of patients should be radiographed, and that this should be repeated whenever they suffer from lepra reaction.

R. Kooji and T. Gerritzen write on *Positive "Lepromin" Reactions with Suspensions of Normal Tissue Particles.* By using suspensions of normal skin as antigen in the lepromin test in place of the ordinary Mitsuda-Wade suspension, they obtained positive early and late reactions, though they were not quite as strong as with the ordinary antigen. The results are shown in tabular form, the strengths of reactions being measured in millimeters. Suspensions of normal liver as well as suspensions of lepromatous liver and spleen were also used as antigens. Although the strength of the reactions varied, all the preparations reacted in the same way. From their results the authors propound a hypothesis that the Mitsuda phenomenon is a foreign-body reaction, and, if that is correct, that "attempts to find a correlation between the results of the lepromin and tuberculin tests, to prove an immunological relationship between leprosy and tuberculosis, are incorrect". The authors make a plea for the Madrid Congress criteria to be used in reports of lepromin readings, and in any case that the readings be given in millimeters so that comparisons will be possible.

In two editorials Dr. Wade discusses *The Manner of Use of DDS in Treatment.* and gives a timely history of *The Beginnings with BCG in Leprosy Work.*