

satisfactory. The choice of drug depends on conditions appertaining to the district, such as cheapness, ease of accessibility, etc. The method used can be intramuscularly, subcutaneously or intradermally; the intravenous route is employed but is gradually being discarded for routine use. The dosage and methods of administration have been detailed elsewhere.<sup>1 2</sup>

One method, the intradermal, is of great advantage in cases of skin leprosy. The following is the technique:—The needle is inserted into the skin and not underneath the skin, and the drug injected sufficiently to raise a wheal of about  $\frac{1}{4}$  of an inch in diameter. Large lesions are treated by making multiple punctures into the lesions and this producing a coalescing wheal. Not more than 5 c.c.s. of the remedy should be injected at any one time intradermally. If there are not sufficient lesions to inject 5 c.c.s. in this way the balance again is given intramuscularly. The drug of choice for intradermal injection is the esters of hydnocarpus oil, but "Alepol" can be used in a 3 or 4 per cent. solution.

#### Local Treatment of Leprous Lesions.

Treatment with Trichloroacetic Acid. Counter irritants of various descriptions have been long used in the treatment of leprosy. The best of these is Trichloroacetic Acid; all hypopigmented patches should be painted with this acid, diluted 1:5 for the face, and 1:3 for the body. Only a few patches should be painted at a time and the same set of patches should not be treated more than once in ten days. Trichloroacetic acid is a strong irritant and may cause ulceration if used injudiciously. For nodules 1:1 acid may be used, but only paint a few at a time. Patches not injected intradermally should also be painted.

#### Leprosy-Reaction.

Leprosy-reaction can be defined as a state or condition of the body which is produced by the breaking down of leprotic foci. A reaction of this nature may manifest itself in the clinical sign of fever, or such symptoms as joint pains, nerve pains, new eruptions, headache, etc. During leprosy-reaction fresh eruptions are apt to break out. These may be erythematous, papular, vesicular or nodular, depending on the stage of the disease and the severity of the reaction. When the attacks are mild, the sharp fever induced by such reactions is sometimes beneficial. But in their more severe forms, reactions are harmful and if these are repeated a definite cachectic condition may set in. Leprosy-reaction does not only manifest itself in fever with exacerbation of skin symptoms, but rheumatic pains, neuritis, orchitis, or adenitis may be found.

The neuritis which is sometimes seen may be very severe. The reaction may be so great that an abscess may result. Neuritis as a manifestation of leprosy-reaction may be unaccompanied by fever. The best remedy for the relief of this painful complication undoubtedly is ephedrine hydrochloride. The most efficient method is to make up a stock solution of a strength of  $\frac{1}{2}$  gr. in a drachm of water, and give a drachm dose orally when the patient complains of severe nerve pain. Within ten minutes the pain should have become markedly relieved. If it persists after ten minutes, the dose of ephedrine may be repeated.

Bone and joint pains and also swellings during the course of a febrile leprosy-reaction all tend to be relieved by oral administration of ephedrine hydrochloride. Ephedrine has no influence in controlling the fever in leprosy-reaction.

<sup>1</sup>. Cochrane, R. G. "Leprosy Symptoms, Diagnosis, Treatment and Prevention" (2nd edition). British Empire Leprosy Relief Association. Price 2s.

<sup>2</sup>. Muir, E. "Leprosy Diagnosis, Treatment and Prevention" (5th edition), obtainable from British Empire Leprosy Relief Association.

Mild attacks of leprosy-reaction can be detected by taking regular four-hourly temperature readings.

In more severe cases the patient should be put to bed, and his bowels well opened with a saline aperient.

If headache, rheumatic or neuralgic pains are severe, he should be given ephedrine hydrochloride gr.  $\frac{1}{2}$  as described above.

The drugs that control the fever in leprosy-reaction are the salts of the heavy metals. The most efficient of these is sodium or potassium antimony tartrate, 0.02 gm. should be given intravenously every other day until the temperature is normal. Usually the fever in uncomplicated leprosy-reaction is broken after one or two injections of this product.

#### Treatment of Ulcers.

These are naturally divided into two types:—

True leprotic ulcers.

Trophic ulcers following nerve destruction.

(1) *Leprotic Ulcers*.—These may be treated with applications of crude chaulmoogra oil. With careful treatment and with due regard to general cleanliness, they generally clear up. Ulceration of the nasal mucosa is sometimes tiresome and the following remedy is of use:—

R. Camphor	..	..	..	..	ʒi
Creosote	..	..	..	..	ʒi
Hydnocarpus oil	..	..	..	..	ʒi
Olive oil	..	..	..	..	ʒii

S. Two or three drops to be placed in nose twice a week.

Crusts can be kept from forming by soaking a little gauze in liquid paraffin and applying night and morning. A daily mild saline douche every morning is also beneficial.

(2) *Trophic Ulcers*.—For small abrasions these can be sealed by applications of tr. benzoin co. after a thorough cleansing with iodine. Larger ulcers should be dressed with gauze soaked in tincture of iodine or 1:1,000 basic fuchsin. For cleaning up foul ulcers the surface should be cleansed with hot permanganate solution, dried and gauze soaked in tincture of iodine applied. Hot fomentations and wet dressings are sometimes applied to large foul ulcers in the hope that in this way sloughs will separate more rapidly, but the tissues being devitalised, do not respond to such treatment, instead, the surrounding skin becomes oedematous and red, and while a few sloughs separate, yet the hot moist dressings afford a good medium for septic organisms and instead of cleaning up the foul surface, the infection spreads to the surrounding tissue, and there is a grave danger of moist gangrene following. The best method of dealing with extensive foul ulcers is to wash well in hot permanganate solution; a permanganate bath may be used, but the limb should not be immersed for more than ten minutes; after the bath, the ulcerated surface is cleaned up and all sloughs are carefully separated with a pair of forceps, then the whole well dried; tincture of iodine is then applied to the whole surface, the ulcer is well dusted with 1:3 boriodoform powder and dry gauze applied and the limb bandaged. In severe cases four-hourly dressings may be needed. In place of tincture of iodine the following oily preparations can be applied on gauze:—Iodoform, grs. x.; Eucalyptus oil, ʒi.

If the eucalyptus oil irritates then a milder oil such as hydnocarpus oil can be used, but iodoform is not so effective mixed with the latter. Eucalyptus oil and iodoform is an excellent dressing for dirty granulating surfaces. Iodine sometimes hardens the skin; if this happens, oily preparations are preferable. Necrosed bone must be removed.

Booklets and pamphlets on the subject will be sent free to workers in the British Empire by the British Empire Leprosy Relief Association, 29, Dorset Square, N.W.1.

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