

REVIEWS.

“Leprosy, Diagnosis, Treatment and Prevention,” (6th Edition) by Ernest Muir, C.I.E., M.D., F.R.C.S. Edin., Medical Secretary of the British Empire Leprosy Relief Association, London.

Since the publication of the last edition (5th) of this book, which had been largely based on Dr. Muir's Indian experience of leprosy, the author has made extensive tours of other leper countries, including West Africa, Nigeria, Sierra Leone, the Gold Coast etc. in 1935, and has been able to give detailed reports of progress made. The result is that all the latest information on the subject, supplemented and confirmed by Dr. Muir's observations and investigations, will be found incorporated in this new edition of his book.

The work is divided into three parts.

Part 1 deals with the *History, Endemiology, Bacteriology, Clinical* and histological features and *Diagnosis* of the disease.

Under bacteriology due consideration is given to, and sympathy expressed with the investigators, who are working at the artificial cultivation of the bacillus. The methods of making and examining bacteriological specimens, taking skin and nasal mucosa smears, staining slides etc. are so clearly explained that they can all be learned and carried out by the trained natives. Insistence is made on the necessity of determining and registering the resistance to leprosy in different cases for the purposes of treatment and of prognosis. In this connection the Leprolin Test is described in an appendix, and its value assessed as an aid in measuring the special resistance of the patient to leprous infection.

Part 2 deals with *Treatment*, and the chief emphasis is laid on the necessity for such effective general treatment as will raise the resistance of the patient, this, indeed, being considered the first essential for successful results for any special medicinal treatment. While the author gives consideration to the use of various remedies still in the experimental stage, he does not recommend any such. Of the fact that chaulmoogra oil and its derivatives continue to be the most efficacious drug for the special treatment of leprosy, Dr. Muir gives very convincing confirmation. The methods of application of the remedy are described in detail, as is also (in an appendix) the method of preparation of the esters. Excellent appendices also describe the Sedimentation Test and the Iodide Test.

Part 3 deals with *Prevention*. Prophylactic and Public Health measures are described. Many different systems or methods of isolation have been examined and are described. The necessity is urged of accuracy of diagnosis of infective cases that require isolation, as distinguished from the far more numerous non-infective cases that do not require isolation. The necessity is urged of making more intense propaganda of leprosy information among the native peoples. Very thorough specialist training of doctors, nurses, medical assistants and social workers is a *sine qua non* of efficient work in the anti-leprosy campaign, and for the better equipment of such for their task, this book will be found to be the most readable, most reliable and most complete text book yet published.

Because of the reliability of Dr. Muir's work, as a world-famed leprologist, there is sure to be a great demand for the book from all leper lands, and requests for permission to translate it into other languages.

The author had had as his object the production of a book that will be of practical use, especially for doctors and anti-leprosy workers, and all padding and anything else which is not of strictly practical importance has been left out, so as to make the book as small as possible, and as cheap as possible. It is sold at the exceedingly cheap price of four shillings.

J. W. LINDSAY.

International Journal of Leprosy, Vol. VI, No. 2. April-June, 1938.

Acute Ulcerative or Sloughing Tuberculoid Leprosy, by G. A. Ryrie. This article describes a form of leprosy with which few leprologists are familiar.

"It appears to be most common in Malaya and is there found only among the Chinese lepers. Acute ulcerative tuberculoid leprosy is of special interest for two reasons. One is that it appears to shed additional clinical light on the tuberculoid process of the disease. The other is its remarkable response to hydnocarpus treatment, which has what appears to be a truly specific effect upon it. The process begins with the usual flare up or 'reaction' of acute tuberculoid leprosy, the lesions being multiple and consisting of raised inflamed plaques, and marginal zones around central areas of partially anaesthetic skin. As in ordinary acute tuberculoid leprosy, the lesions often appear on the sites of old and apparently inactive simple leprides. The onset, though not as rapid as that of lepra fever ('lepra reaction' of cutaneous leprosy), may be and often is by no means slow, and multiple angry-looking lesions may appear where no special activity was observed forty-eight hours before. The lesions have a definite tendency to spread into the relatively immune areas of the body, which are normally free from cutaneous involvement. There may be low fever and malaise, and unless suitable measures are taken there may be considerable mental depression.

"The frank sloughing stage which is the subject of this note may develop in any of three ways: (a) After about a week a fine exfoliation is seen on the surfaces of the lesions; the appearance is as if cigarette ash had been dusted finely over them. It should be noted that the process may stop at this scaly stage or at any further point short of complete sloughing. In progressive cases the exfoliation gradually becomes more gross until large tatters of dead epithelium hang from the lesion areas, and under them can be seen the raw surfaces of the acute tuberculoid areas. Shallow ulcerations appear here and there, beginning usually at pressure points, and they gradually deepen and spread. (b) There may be little or no exfoliation. The lesions in these cases become more and more inflamed, tense and shiny, until the thinned-out epithelium gives way and ulceration proceeds.

(c) The ulcerative stage may be preceded by the appearance of tiny engorged venules on the lesion surfaces. In two cases I have noted punctate hemorrhages, and in one case larger ones, as in scurvy; it may be added that the condition is unaffected by vitamin C. In one case I have seen autogenous, nonpurulent blisters.

"The patient loses weight rapidly and looks—and is—extremely ill. The task of dressing considerable areas over the arms, legs, face and trunk is a very awkward one, and the patient experiences difficulty in finding a posture of any comfort. Small children suffering from this condition tend to cry continuously, and even in adults the sight of the large ulcerated areas causes a good deal of mental distress. In the earlier cases that were under my treatment the dressings had to be renewed day after day for months on end, with little sign of recovery and with increasing cachexia and hopelessness on the part of the patient. Recovery without the treatment to be described is extremely slow. The stage of ulceration may persist from three to seven months, to be followed by a protracted convalescence. Considerable distortion of the face may result, and perforation and erosion of the ears, the appearance being like of severe scarring from burns. On the trunk can be seen broad circular bands of scar tissue surrounding the central anesthetic areas. I have not seen a fatal case, but I have little doubt that secondary sepsis would occur if extreme care were not taken, because the raw ulcerating areas may be very large indeed. A point of considerable interest is that even at the worst stages the erythrocyte sedimentation rate is unexpectedly low.

"The ultimate prognosis is bad. Most of the cases that I have seen degenerate in a year or two to the cutaneous stage, with rapidly spreading lesions. One case under observation just now, however, after undergoing three years ago the worst attack of acute ulceration tuberculoid I have ever seen, has now developed fresh acute tuberculoid lesions. Some cases, however, apparently remain static, showing only the residual scarring without undergoing cutaneous or other change.

"No one observing the clinical progress of the condition would speak of this phase of tuberculoid leprosy as representing general bodily resistance to the disease. In its whole course and ultimate prognosis the word 'resistance' seems out of place. If, however, we consider the tuberculoid process as essentially a phase of tissue-resentment, a reaction to the presence of the infecting organism that is lacking in the cutaneous type of the disease, then we can picture a condition or sequence of conditions that vary from the relatively meek protest of the lesser forms or degrees of the tuberculoid type of lesion, through the more striking forms sometimes called 'Calcutta leprosy' to the tissue mania, so to speak, of the acute ulcerative condition here described. If the underlying factor of the condition in the last of these stages is to be considered as 'resistance,' it is resistance so violent and overdone that it damages the patient and often prepares the way for the transition to cutaneous leprosy.

"The only effective treatment is hydnocarpus oil, given in large doses inside and out. Give subcutaneously 1 cc. of hydnocarpus oil for every ten pounds of body weight, twice a week, and if necessary increase the dose up to 1 cc. for every five pounds. Along with this apply daily, and lightly massage in, hydnocarpus ointment in liberal quantities over the ulcerated areas. Leave a thick coating of it on

the ulcer bed, and also impregnate the inner dressings with it. The preparation used here is :

Hydnocarpus oil, 3 drachms	...	(10.00 cc.)
Eucalyptus oil, 1 drachm	...	(3.25 cc.)
Zinc oxide, 50 grains	...	(3.33 gm.)
Dettol, pure, $\frac{1}{2}$ drachm	...	(2.00 cc.)
Vaseline, yellow, ad 1 ounce	...	(28.00 gm.)

The response of acute ulcerative tuberculoid leprosy to this treatment is, relatively speaking, dramatic; it is the most convincing demonstration I have seen of the specific efficacy of hydnocarpus oil. The cachexia ceases and the ulcerations heal, sometimes with surprising rapidity."

The article is well-illustrated with plain and coloured photographs.

E. Keil, writing on *Malaria and Leprosy* says that in well-nourished leprosy patients who are treated without delay with atabrin (0.3 gm. daily for 5 days) followed in subtertian cases by plasmoquine (0.01 gm. for 5 days) recover without any noticeable increase in the leprosy condition.

B. Moiser, writing on *Hospitalization in Leprosy*, advocates the treatment of non-infective cases in annexes of general hospitals (in Africa), the special large leprosy hospitals being reserved for infectious cases.

The Roles of Familial Susceptibility and Contagion in the Epidemiology of Leprosy, by W. L. Aycock and E. B. McKinley. This interesting article may be summarised by quoting the last paragraph:—

"At present, epidemiologists with the problem of leprosy are emphasizing as most important factors in the transmission of the disease the degree, duration and closeness of contact. The type of contact which young children experience with their elders appears to represent the degree and duration of intimacy which would satisfy this concept; that which occurs between adults is of another character and does not provide the factor of duration. One observes in various parts of the tropics, for example, the mother or father holding the naked child for hours in his or her arms. Many of these children develop their first lesions of leprosy on the buttocks or thighs and it has been suggested that this represents a skin-to-skin contact transmission from the older person to the child as a result of prolonged and repeated opportunity for such transmission. Be that as it may, there must still be many instances of this nature where degree, duration and closeness of contact have existed and no leprosy has resulted. This angle of the problem has received little attention, and might it not be that those children who acquire leprosy in this manner are those who have inherited susceptibility to the disease?"

P. Parmakson writing on *Statistic Report on Leprosy in*

Estonia, makes the astonishing statement that leprosy is much more common among females than males. The following table gives the numbers and ratio in various age groups:—

Age Groups	Males		Females		Total		Ratio, males to females	
	No.	%	No.	%	No.	%	Cases of leprosy	General Population
0- 9	—	—	—	—	—	—	—	1 :0.97
10-19	1	1.8	—	—	1	0.6	1 :0.00	1 :0.99
20-29	6	11.1	7	6.7	13	8.2	1 :1.16	1 :0.99
30-39	12	22.2	19	18.3	31	19.6	1 :1.58	1 :1.15
40-49	7	13.0	18	17.3	25	16.0	1 :2.57	1 :1.25
50-59	11	20.4	21	20.2	32	20.2	1 :1.91	1 :1.26
60-69	11	20.4	27	26.0	38	24.0	1 :2.45	1 :1.40
70-79	5	9.3	11	10.6	16	10.1	1 :2.20	1 :1.61
80-89	1	1.8	1	0.9	2	1.3	1 :1.00	1 :1.80
TOTAL	54	100.0	104	100.0	158	100.0	1 :1.92	1 :1.13

In explanation it is mentioned that “men often work outside their homes in towns and therefore do not frequently meet diseased persons, while the women, living at home and nursing leprosy members of family, are more exposed to infection; this causes a predominance of disease in women in that region.” But no really satisfactory explanation of this reversal of the usual ratio is available.

H. W. Wade, D. S. de Simon and A. C. Fernando write on *The Skin Lesions of Neural Leprosy—Observations in Ceylon*. This well-illustrated article should be read in full. It is a valuable further contribution to the literature on the subject.

An article on *The Biochemistry of Leprosy*, by G. G. Villela, gives a full list of 106 references on this subject.

Leprosy in India. Vol. X, No. 1. January 1938.

This number contains an article by J. Lowe on the *Classification of Leprosy*. He raises the following interesting points:—

“Mitsuda and Ogwa state:

‘Enlargement of peripheral nerves: In the clinical examination of lepers one can detect enlargement of the median and radial nerves in their upper and lower portions, and of the ulnar in its middle portion, at the elbow. At autopsy we usually examine these nerves and, when there is indication for it, the peroneal and posterior tibial nerves as well.

There are two kinds of nerve enlargement, one characteristic of cutaneous leprosy and the other of neural. In the former type the swollen portions show lepromatous changes histologically and in general contain more bacilli than do the lesions in neural cases. In the latter type tuberculoid changes are often found in the enlarged nerves, sometimes with caseation or calcification. These changes are often associated with tuberculoid macules of the skin. In these nerve lesions bacilli are very scanty, as reported by Chatterji and others. Contrary to the usual rule, smear examination is better than histological search for bacilli in the caseous lesions of the nerve.

As a result of atrophy the affected nerves sometimes become thinner than normal, but in that case their consistence is firmer. Enlargement of nerves was found in all of the neural cases and 88 per cent of the cutaneous ones. In the other cases the nerves were atrophic or of normal size, but in either case bacilli were to be found, together with histological changes characteristic of one or other type of the disease.

Thus it appears that in neural leprosy, whether of the "macular" or of the tropho-anaesthetic types, the lesions, wherever they may occur, in skin, cutaneous nerves, or nerve trunks, commonly show granulomatous change of tuberculoid nature. This finding brings up a very interesting and important point. Is it not at any rate possible that all active 'neural' leprosy is essentially 'tuberculoid' leprosy."

An article on *Extensive Ulceration of the Skin in Leprosy*, by J. Lowe and S. N. Chatterji, has already been reproduced in the July, 1938, number of this journal. Its findings may be compared with the article by G. A. Ryrje, appearing in the "International Journal of Leprosy" and reviewed and abstracted in this issue.

Leprosy in India, Vol. X, No. 2. April, 1938.

H. H. Gass writes on *Cobra Venom in Leprous Neuritis*. The venom was supplied by the Department of Pharmacology of the School where it was standardised in mouse units, one mouse unit being contained in 1 cc. of solution. The recommended dosage was as follows:—1st day .1 cc., 3rd day .2 cc., 5th day .3 cc., increasing in this way until a dose of 1 cc. was reached. In our work this system of dosage was followed in most of the cases, but only up to the .5 cc. dose, for this dose was as a rule sufficient to stop the symptoms. Of the 36 cases treated there was marked improvement as regards pain in 17; considerable improvement in 15, slight improvement in 2, no improvement in 1. In one case, with excruciating pain in both ulnar nerves, there was dramatic

cessation of pain after 0.5 cc. had been reached. An editorial, however, points out that " one or two other workers in India, using similar methods, have so far obtained results much less favourable.

A Preliminary Report of an Epidemiological Survey of Leprosy in a Typical Rural Area of West Bengal, by J. Lowe, is summarised as follows :

A preliminary report is given on an epidemiological survey of a rural area with a population of 10,000 living in 42 villages. The methods adopted are briefly described. The gross incidence of leprosy in the area is 4.38%. In addition, there are thirty cases with lesions suggestive but not diagnostic of leprosy. Of 438 cases detected, eighty were cases of cutaneous type (i.e. 18%), the remainder being cases of neural type. These figures are compared with the figures of 50% and 5% reported in other parts of the world, and are regarded as indicating marked regional differences.

The study of the incidence at different age groups showed steadily increasing incidence up to adult life. The study of the age at onset of symptoms indicate that the great majority of the infections have been contracted early in life. The study of the incidence and severity of the disease in males and females indicated that males showed about twice the incidence as females in all age periods, and also that in males the disease tended to be more severe.

The study of the transmission of the disease showed in over 80% of cases that there was a definite history of contact. In most of these cases the history indicated contact with an open case of cutaneous type. In villages or families where open cases existed the disease appears to spread, whereas where only closed neural cases were found the disease does not appear to spread. The study of the source of infection in 438 cases indicated that in one-third infection was from near relatives, in one-third from distant relatives, and in the rest from non-relatives or from unknown sources. The great number of cases attributed to contacts of distant relatives is considered as being caused largely by the joint family system.

The study of the closeness of contact showed a large number of patients who apparently contracted the disease from contacts outside the homeland it is considered that such contacts are dangerous in childhood. The findings suggest that, the disease contracted early in life is more likely to be of severer form than the disease contracted later in life. The findings suggest that the disease contracted from the house-contact is more likely to be of severe type than the disease contracted from outside the house. Several cases in one family are frequently found.

The incidence of leprosy in children is regarded as an important index of the seriousness of leprosy in the Public Health problem. It is considered likely that similar studies in other areas may give somewhat different results, since clinical and epidemiological findings appear to vary considerably in different races and countries.