

CHILD LEPROSY.

R. G. COCHRANE.

It affords me very great pleasure to give my contribution to this number of the Leprosy Review which is published as a commemoration number. To those who have been in leprosy work for more than twenty years, the name Muir means much more than an outstanding pioneer in leprosy. We who were privileged to be his students can appreciate his work, his thoroughness and his perseverance. Many advances have been made since the days

when Muir with courage and persistence championed the cause of leprosy in India and in so doing gave leprosy her rightful place in preventive medicine. Muir made it possible to progress, until to-day leprosy is beginning to be viewed as an ordinary disease, first and foremost as a medical problem and not as a social stigma.

Muir, and earlier Rogers, recognised the importance of child leprosy and Muir's insistence on adequate attention being given to leprosy in children stimulated the establishment of a centre for the investigation of child leprosy in Madras. While factors beyond our control have prevented the development of work in child leprosy to its full, sufficient information has been amassed to convince us that when Muir, in the early days, emphasised child leprosy he and the earlier pioneers were pointing the way not only to a better understanding of the disease, but also suggesting the key which would open to us possibilities of its ultimate control.

In taking as my subject child leprosy in this special number of the *Leprosy Review* I wish briefly to stress its importance in relation to (1) Epidemiology (2) Pathology and (3) Treatment.

It is a truism to state that no system of prevention of leprosy can possibly succeed without an adequate study of the epidemiology of the disease. In our endeavour to organise adequate measures of control in South India our policies and opinions have been influenced largely by our study of child leprosy especially in relation to epidemiology. We have held the opinion for many years that only a certain amount of child leprosy is serious from the preventive aspect, and that leprosy in South India can in a significant proportion of cases be looked upon as a benign non-progressive disease. Evidence for this is furnished in a publication which is already in the press. It can be said that from the point of view of the development of more serious leprosy—i.e., lepromatous leprosy—practical consideration need only be given to (1) Simple neural leprosy with multiple hypopigmented macules (2) Pre-lepromatous lesions. The existence of this latter condition has been doubted by certain workers but Muir (1936) himself drew attention to the existence of these lesions emphasising their slight clinical signs, their serious prognosis and their importance in the development and spread of leprosy in a community. While only perhaps five or at the most ten per cent of all child cases in a highly endemic area can be placed in this category, yet from observations over the past ten years it has been confirmed that not only do the majority of such cases develop lepromatous leprosy in later life, but these cases more often arise in families where there is the closest contact from early years with open cases. In fact it can be stated with considerable force that if more attention

were focussed on the real cause of the spread of leprosy—the infective case in the house—more success would be achieved. Further, a study of the incidence of child leprosy, we believe, gives a clue not only to the degree of endemicity, but to the effectiveness of measures of control.

I have stressed for many years the need for a better understanding of the pathology of leprosy especially in relation to the skin. I am more convinced than ever that the corium of the skin is an area of strategic importance in leprosy and that the *M. Leprae* elsewhere are mainly saprophytes living in a state of commensalism in the reticulo-endothelial system of the body. In other words, without multiplication and spread of the organism in the skin there can be no progressive disease. A study of the tissue reactions in the skin especially in children gives much support to this contention; for, it is in childhood that the earliest lesions are seen and their progress can be traced from the stage where there are no bacilli in the skin to that of active multiplication and dissemination of the organism in the corium of the skin resulting in widespread dissemination of the *M. Leprae* throughout the reticulo-endothelial system. On the other hand, we have observed over a period of many years lesions which have spontaneously disappeared in childhood and the one fact which has impressed us is the apparent inability, in some instances, of the *M. Leprae* to multiply and spread in the skin. Hence the disease has shown spontaneous resolution. Contrary to earlier opinion we believe that diet, predisposing diseases, and debility play little or no part in causation. The cause is to be found in close association *within the house* with an open case during childhood. As suggested, if more attention were paid to this aspect of prevention and less to unproved and hypothetical theories, we would to-day be nearer the solution of this age long problem.

The study of child leprosy has led, we believe, to a clearer conception of the pathology of the disease. It is only possible in a short article to indicate how our studies have thrown more light on the pathological processes in relation to leprosy. The idea that leprosy is a self-healing disease is not a new one, and Muir re-emphasised the importance of this early observation. It was he who coined the term “Burnt out” visualising the disease as a fire which smoulders, rises to a flame and then slowly splutters out in dying embers. We are beginning to realise however, that, to continue the simile, at times the fire is quenched even before it has a chance to rage, and that frequently leprosy becomes spontaneously “cured” leaving no traces that it has ever been there. At other times the fire continues to smoulder and then

splutters out without ever rising to a flame. Thus it is only the exceptional case which goes through the whole course of the disease and ends up as a secondary neural case.

The study of child leprosy which has been undertaken in Madras has indicated that the skin is the main defensive organ in leprosy and that if as in tuberculoid leprosy an active tissue reaction can be stimulated anchoring or shutting off the multiplying bacilli in the corium of the skin then progressive leprosy cannot develop. If on the other hand no active tissue immunity is present, then there is a grave danger of the bacilli multiplying widely, breaking through the skin barrier and then becoming disseminated in a widespread manner throughout the reticulo-endothelial system. This is not the place to discuss classification and the development of lesions but we cannot accept the view that tuberculoid leprosy subsequently develops into leproma. We believe that it is only those which show atypical features which so develop.

Turning now to the question of treatment I should like to state particularly in the case of child leprosy that drugs which aim at the destruction of *M. Leprae* in the body have only a limited place in the treatment of leprosy. When one is faced with a case of child leprosy three questions should be uppermost in one's mind.

1. Does the child really need treatment?
2. What are our chances of preventing deformity?
3. How can we prevent the spread and multiplication of *M. Leprae* throughout the body?

There are many cases of child leprosy which are being quite unnecessarily submitted to prolonged courses of injections which are extremely painful especially if intradermal injections are given. If treatment is necessary then it must be given and given vigorously, but in cases of benign neural leprosy, apart from measures for causing the lesions to scar, either by excision—if only one—or by local applications, or by intradermal injections, no other measures are necessary. On the other hand, long courses of injections are sometimes given to neural cases when one's attention might better be employed in devising and studying methods whereby deformity can be prevented and, if present, rendered less disabling.

For lepromatous leprosy the standard method of treatment still consists of injections of hydnocarpus (*chaulmoogra*) oil preparations preferably concentrating on intradermal injections. I am aware that the recently discovered preparation of diamino-diphenyl sulphone, especially promin and diasone have

received much publicity. Two warnings must be issued in connection with these drugs (1) They are toxic (2) They must only be administered under very careful conditions where regular blood levels and haemoglobin estimations can be carried out. Unless care is exercised in this direction tragedies may result.

Admittedly our results with the chaulmoogra derivatives in advanced lepromatous leprosy are not satisfactory, but in our disappointment with these remedies, let us not fall into the error which is so often committed by showing excessive enthusiasm for the newest remedy which admittedly is promising but is not yet fully tried. There is no more tragic experience for the leper for whom little can be done than the excitation of hopes which may be dashed to the ground as a result of more prolonged trial and experience.

A word of warning at this point must be added. If the sulphone preparations are found to be effective in leprosy it must be remembered that their use will largely be confined to lepromatous cases; and even if a remedy were found which would permanently heal lepromatous leprosy the leprosy problem would not be solved over night. Curative measures have always taken precedence over preventive ones. These remarks apply particularly to children for no curative remedies can overcome disability due to nerve damage or muscular atrophy. Neither can specific remedies alleviate permanent damage to structures such as the eye, or cure trophic ulceration. This is a wide and neglected aspect wherein the ophthalmologist, the orthopedic surgeon and the neurologist will find almost a virgin field. Indeed it is high time we thought in terms of the whole problem for, apart from the specific medical and surgical problems, vast though they are, little or no consideration has been given to welfare or social service, to betterment of village conditions, and propaganda efforts to educate the public not only in preventive measures which must be taken in the home, but to a better understanding of the disease.

To one who has worked for nearly a quarter of a century in leprosy and has had the privilege of drawing inspirations from such stalwarts as Drs. Muir, Wade, Denny and Wayson, it appears as if we are just on the threshold of something new. Let us remember however, that as in medicine the whole of man must be our consideration; so in leprosy this whole view must be ours. There is no greater danger to-day than that on the eve perhaps of outstanding success we lose our perspective and thereby deprive ourselves of the rich fruit which will be one day the reward of those who strive.

Ref. Muir (1936) "Juvenile Leprosy" *I.L.J.* IV 45.