

EDITORIAL

The Weddell Theory on the Pathogenesis of Leprosy

Dr. G. Weddell of the Department of Human Anatomy, University of Oxford, towards the end of 1962 had many of his ideas reported in the newspapers. These have had wide dissemination in newspapers at home and abroad. Examples of the headlines are the following: 'Oxford Research Clues may lead to end of Leprosy' (*Daily Telegraph*, 15.12.62); 'British Discovery may end Leprosy' (*Yorkshire Evening Post*, 15.12.62); 'New Theory on Leprosy' (*The Times*, 15.12.62); 'New Theory on Leprosy Cause' (*East Anglian Daily Times*, 15.12.62); 'Leprosy Research' (*Glasgow Herald*, 17.12.62); 'Serious Doubts on Leprosy Theories' (*The Birmingham Post*, 15.12.62); 'Theories on Leprosy are now Doubtful' (*The Irish News*, 15.12.62); 'Leprosy Theories Shaken' (*Cork Examiner*, 15.12.62); 'Grave Doubts on Leprosy Theories' (*The Guardian*, 15.12.62); 'Leprosy Spread by inhalation or ingestion' (*Medical News*, 21.12.62); 'Miss 'X' speaks on new moves against leprosy' (*The Catholic Herald*, 21.12.62); 'U.K. Doctor's New Theory on Leprosy Prevention' (*South China Morning Post*, 18.12.62); 'Prevention of Leprosy' (*The Hindu*, 18.12.62); 'Leprosy: some experimental observations' (*Medical News*, 15.2.63).

The effect of all this newspaper publicity has seemed to spread in the minds of the public, and in those in charge of the control of leprosy in many countries abroad:

1. that transmission of leprosy by the skin is unimportant or even entirely negative;
2. that transmission of leprosy by the blood is on the contrary highly important;
3. that transmission of leprosy by the stomach, contrary to what is usually thought, is of considerable importance;
4. that transmission of leprosy and development of leprosy in the nerves is unimportant.

The longest newspaper article available to us is that of *Medical News*, London, 2nd February 1963. From that the following quotations are made:

1. "An intensive and extensive search using a number of different techniques failed to reveal any *M. leprae* passing through the epidermis into the skin to invade the cutaneous nerves in young children and adults, who were, or had been, in constant daily contact with open cases of the disease."

2. "Recently we had the opportunity of examining an untreated case with a single patch on the left arm above the elbow. This proved on histological examination under the light microscope to be a reactional tuberculoid lesion, and we were unable to find any *M. leprae*."

3. "On looking through our sections systematically, however, we were at first surprised to find two evenly stained, clearly outlined, 'normal-looking' *M. leprae* in two different Schwann cells in one of the normal nerve bundles. The cells in which these organisms were residing appeared to be normal, and so were the axons related to them."

4. "From these observations it is no longer possible to hold the view that *M. leprae* in all clinical forms of the disease are not at some period disseminated via the bloodstream."

5. "Leprosy is a highly infectious disease and its target is the sensory nerve Schwann cell.

The response of the patient depends upon three factors.

(a) The magnitude of the infection, i.e. the number of organisms which invade the body within a given period of time.

(Due to the long incubation period a single massive invasion may evoke the same response as a number of separate invasions by fewer organisms. Clearly then it could be envisaged that the magnitude of the invasion and the number of times invasion occurred could vary independently in such a way as to evoke a whole variety of different responses.)

(b) The resistance of the patient to the products of metabolism of the organism—clearly another factor which may be the cause of variations in the clinical picture.

(c) The genetic constitution of the patient which may characterise the particular pattern of the response in different countries and among different races.

The evidence so far available, that the portal of entry is through the skin as the result of repeated body-to-body contact with open cases, is weak. On the other hand, there is no evidence that the portal of entry is *not* through the skin."

6. "We have found no evidence that leprosy is *less* infectious than other mycobacterial diseases. Indeed there is every reason to support the growing clinical belief that, by regarding it as a serious infection and setting about reducing the lepromatous rate by drugs dispensed via a network of rural clinics, as well as by education and enlightened public health measures, the disease could be eradicated."

7. "Personal and public hygiene, coupled with drug therapy to reduce the magnitude of the infection, are as important in leprosy as in any other infectious disease."

8. "Secondly, that it is now clear, at least to us, that leprosy can only be stamped out quickly and effectively if practising physicians and charitable organisations continue to work in harmony. They must continue their policy of inviting biologists who are primarily interested in the basic medical sciences to co-operate with them in this work, as they have indicated that they are willing and anxious to do in the future."

The above extracts have been quoted to give some idea of what Dr. Weddell is aiming at. Everywhere scientists and leprologists have undoubtedly discussed this to the best of their ability on the publicity obtainable, and we think it would help if at this stage we report that all experienced leprologists consulted, and Dr. Weddell concurs, agree that nothing has been adduced to overturn the accepted ideas about the transmission of leprosy, namely that the blood; the respiratory tract; the stomach, may play some part, but it should be kept in perspective; and that the skin is not dethroned from its important place as probably the main route of transmission of leprosy. In other words, *the present public health measures of control of leprosy are so far nowhere required to be altered*. There is no harm in renewed attention to the hygiene of food.

(The remarks in the paragraph just above have been shown to Dr. Weddell, who approves.)

We are glad to publish in this issue of *Leprosy Review* on page 57 an article from Dr. Weddell and Miss Palmer which deals with this subject. It has just become available as we go to press, and discussion of it must necessarily be deferred to the next issue. Comments and letters are invited.