

6 NEGLECTED ELECTRICAL TESTING IN LEPROSY

For many years we have wondered why some leprologist so located that he could enlist the cooperation of a suitably-equipped dermatologist or neurologist, or who himself might acquire the necessary equipment and skills, has not studied thoroughly the factors of blood circulation and the skin temperatures and electrical conductivity in the different forms and stages of leprosy, in connection with nerve function changes and also in connection with the unfortunate elephantiasis which is unfortunately so common. Several years ago we engaged in some correspondence on the subject with neurologists but it became evident that such studies could not be undertaken casually, or without special training.

Recently, Dr. A. Dubois, in Belgium, in association with Dr. M. A. Rademecker, a neurologist, has studied the electrical conductivity (chronaxy) with regard to muscle function in a few cases primarily in relation to diagnosis.^{1, 2} This is a matter that should be studied extensively where there are plenty of cases of ample variety, for a better knowledge of the nerve changes of leprosy and their consequences. It is but natural that the other questions referred to have occurred to other people, but we had seen nothing said of them until Dr. James A. Doull, medical director of the Leonard Wood Memorial, took it up in an intraorganization memorandum:

[About] the subject of skin temperature and electrical resistance in leprosy [which] was brought to attention. . . . inquiry has shown that there is very little known about this subject. Dr. Paul Erickson stated that several years ago some work of this type was done at Carville by Dr. Raymond R. Suskind, and in a response to an inquiry. . . . Dr. Suskind replied as follows:

"Some years ago during a visit to the Carville Leprosarium, we made a brief study of several varieties of leprosy lesions. An attempt was made to measure:

1. The eccrine response to parasympathomimetic stimuli, such as mecholyl.
2. The pilomotor response to nicotine sulfate.
3. The sensory response to mechanical stimuli.
4. The cutaneous resistance to a galvanic current in which we employed a modified Jasper type of 'neurodermometer.'

"We observed that there was a rather neat correlation between the decrease or loss of sweat function and the clear-cut measurable rise in electrical resistance. This was best demonstrated in tuberculoid lesions.

"Our entire series was rather small and consisted of nine patients of which two had tuberculoid lesions. We did not publish the observations and. . . . have not had an opportunity to return to this problem. From the initial work which we did, it would appear that quantitative electrical resistance measurements provide a rather accurate way to determine decrease or loss of peripheral nerve function in the skin and an objective way of following closely return of function during therapy."

—H. W. W.