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# STATISTICAL EVIDENCE INDICATING THE PREDOMINANCE OF ABORTIVE OR STATIONARY LEPROSY IN BASUTOLAND

BY P. D. STRACHAN, O.B.E., M.A., M.D.  
Fort Hare, Cape Province, South Africa

During recent years workers on leprosy have been recognizing in increasing measure the existence of relatively large numbers of abortive cases of the disease. The stationary case has also received some attention. A stationary case may be defined as one in which for a long time the visible lesions, which are usually slight, remain unchanged for the better or for the worse. Ultimately such a case may either abort or, the patient's resistance having broken down, progress unfavorably.

Early in 1933 I analyzed the case records of 1,436 patients who had been in the Basutoland Leper Asylum at some time during the ten-year period from 1921 to 1930. For some years before 1930 treatment by deep injections of chaulmoogra products had become so unpopular that the majority of the patients either refused to accept them at all or discontinued after having received less than ten weekly injections. It was not until near the end of 1932 that intradermal injections were begun. Of the early neural cases in which the injection treatment accepted was either less than ten injections or nil, 61 percent underwent arrest (1).

In November and December, 1936, Dr. R. C. Germond did a fine piece of survey work in a part of the southeastern region of Basutoland (2), where we had evidence that leprosy was more severely endemic than anywhere else in the territory. Having secured the good will of the local chiefs, Germond, with two native inspectors, examined the whole visible population—not, as had hitherto been the practice of the inspectors, merely contacts, suspects and discharged patients. To his kindness I am indebted for the following figures:

Number of people examined.....	13,187
Cases found	
C1 (Light cutaneous).....	3
C1-N1 (Light mixed).....	1
N1 (Light neural).....	38
TOTAL.....	42
	497

All of these cases were "early" ones. "Of the neurals, 52.6 percent were clinically almost negligible. Some were apparently incipient, while others were in the process of spontaneous arrest," Germond states. Having seen some of these patients who were brought to the asylum for a very short course of treatment before I left Basutoland, I am convinced that this appraisal of their condition is correct.

The patients in the asylum, in all stages of the disease, who had come previously from the area surveyed were 37 in number. Considering the thoroughness of Germond's survey we may fairly conclude that 37 plus 42, or 79, does not fall far short of the total number of patients from that area still surviving at the time of the survey.

Now, owing to the work done by the native inspectors since 1929, it seems certain that at no time during the past twenty years was leprosy less severely endemic in Basutoland than it is to-day. Consequently, if the cases found by Germond were all early ones of not more than one year's duration, we should expect that a number of new cases of at least the same order (about 42) would have cropped up every year during the past twenty years. To calculate the number of present survivors from these successive crops, assuming that there are no abortive or stationary cases, I have assigned a more generous death-rate than we usually find in leprosy, 20 per 1,000 in the first year of the attack, increasing in geometrical series up to 200 per 1,000 in the twentieth year. The survivors from 42 entrants per annum would on these assumptions amount in twenty years to 529, and there would be in addition a few survivors from an earlier period. The calculated number of survivors, 529, is between six and seven times as great as the actual number, 79.

How is this enormous difference to be explained? First hypothesis: That leprosy is a rapidly fatal disease. Second hypothesis: That most of the cases found by Germond are either ones that will abort in a few years, or ones that have been stationary for many years and may or may not abort in the course of time. Probably some belong to one of these categories and some to the other.

The first hypothesis is ruled out by all experience; the second one seems to be the only one that is tenable. If there were no abortive or stationary cases the number of annual entrants required to give 79 survivors at the end of twenty years would be only 6.26, and the proportion of so-called early cases among the survivors would be very much less than it actually is.

In order to test the validity of the hypothetical death-rate assigned, I have made a gross comparison between the assigned death-rate and that actually experienced at the leper asylum over the whole twenty-year period from 1917 to 1936 inclusive. At the beginning of 1917 there were 369 inmates and the number of patients admitted during the twenty-year period was 2,160, making a total of 2,529. The number of deaths in the same period was 1,238, a percentage of 48.9. An addition of 42 early cases every year for twenty years would amount to 840. With the same gross death-rate as that experienced at the asylum, the number of survivors would be 429 instead of 529 as calculated. Even the former number is between five and six times as great as the actual number of survivors. Furthermore, the majority of the patients admitted into the asylum up to 1931 were in grossly advanced stages of the disease, the inspectorate system not having been instituted before 1929; and the death-rate at the asylum could not fail to be much higher than it would be among patients first coming under observation in a clinically slight ("negligible") condition.

*Summary.*—During ten years, 61 percent of the untreated N1 cases of leprosy at the asylum appeared to undergo spontaneous arrest. In a thorough survey of a certain area made by Germond at the end of 1936 only extremely light cases were found, and these actually exceeded in number the total number of cases from the same area in the asylum, in all stages of the disease. If these light cases were all such as become progressively worse in the absence of treatment, we should expect the total number of surviving sufferers today to be from five to seven times as great as it actually is.

*Conclusion.*—The majority of early neural cases of leprosy either remain stationary or become spontaneously arrested. This fact is revealed by a thorough survey of the whole population in an endemic area and is marked in institutions in which all patients receive treatment.

I have to thank Dr. R. C. Germond for his excellent survey and for permission to make use of his figures; also Professor J. P. Dalton of Johannesburg for valuable hints and assistance in connection with the computations involved in this note.

#### REFERENCES

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