

## SOME DIFFERENCES IN THE LEPROSY OF THE GAMBIA AND NIGERIA

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A medical survey was carried out in the Gambia in the period from March to May, 1947. The survey was arranged by Dr. MacKay, the Senior Medical Officer of the Gambia, with the advice of B.E.L.R.A. The party consisted of Dr. and Mrs. Ross, Nigeria Leprosy Service, Dr. Foster, Gambia Medical Department, Mr. J. Roscoe, B.E.L.R.A. and a competent staff of Microscopists and Dispensers of the Medical Department, Gambia. One of the primary aims of the survey was the estimation of the incidence of leprosy in the Colony.

Three areas were selected with about 5,000 people in each area: in all more than 17,000 were examined. The inhabitants were of several tribes; the Mandingo tribe, native to the whole of the Gambia, the Jolof tribe, native to Bathurst district, the Jollah tribe, which is found on the North and South banks of the river, and which extends into French territory, and the Fullah tribe, which comes from the great Fulani tribe of Central Africa. Several Serahuli villages were examined in the upper river districts, and a sprinkling of Moors in the trading centres. The three areas were: one adjacent to and on the South bank of the Gambia, the second about 200 miles up the river at Georgetown, and the third a further 70 miles along the river with Basse as centre and on both banks of the river.

The survey was done at the end of the dry season. There is a decided difference in the temperature and humidity of the areas. In the upper river areas a temperature of about 109 deg. in the shade was experienced with a very low degree of humidity, whereas at the river mouth the temperature was much lower and the humidity much higher. There is a considerable seasonal variation in these conditions in the upper river areas. During the several months of the wet season when the Gambia overflows and the rice fields are swamped, the temperature is much lower than in the dry season, and the humidity is high. There is not so much variation at the mouth of the river where the sea seems to keep climatic conditions more constant.

Social conditions and diet are poor. This is especially so in the areas around Georgetown and Basse. The main diet is rice, kuse (a variety of millet), ground nuts and, rarely, palm oil. Meat is eaten, but it is too costly to be a constant article of diet. Fish is eaten where the population is centred round the mouth of the river. Citrus fruits are rare or absent in the upper river areas. In the

area at the mouth of the river all children shewed signs of food deficiency but these signs were not commonly found among the adults, who were well developed and had healthy skins. In the upper river areas all shewed food deficiency in the characteristic skin lesions caused by diet deficient in the Vitamin B and Riboflavine group. Rickets was seen in children and eye lesions were common. A higher incidence of tropical diseases was found in the upper river districts and also of leprosy. Schistosomiasis was common in the villages of the upper river areas.

The Survey was an intensive one. The whole population under survey was examined for leprosy and the tropical diseases common to the country, each individual being examined in his own compound yard. Each case suspected of leprosy was examined bacteriologically, tested for tactile anæsthesia, thermal discrimination, and nerve enlargement. Notes were taken of each case. In microscopic examination the slides were stained and examined immediately or within a few hours, about 40 fields being examined if necessary. No histological work was possible.

The Percentage of the different types of the cases found were:

Lepromatous	...	...	...	13.5%
Tuberculoid	...	...	...	71.0%
Unclassified	...	...	...	15.5%

The characteristic lesions of the cases of each group were most interesting, and at times difficult to understand as compared with the same types as found in the Owerri Province, Nigeria. The main differences can be grouped under three natural headings.

1. The general appearance of the skin lesions was remarkable. In lepromatous cases the lesions were more marked, the nodules were greater, they were present on the mucous membrane, and in several instances they had invaded the hard and soft palate to an extent not usually seen in Owerri; leontiasis was more common and heavier in appearance. In tuberculoid cases a greater proportion of erythematous, reacting, and plaque-like macules were seen, also irregularly shaped macules with erythematous, streaming, and papulate edges. A young female was found with a series of small tuberculoid macules half encircling her body and resembling the distribution of a herpes zoster. The colour of uncharacteristic lesions was often puzzling.

2. The number of bacilli found in the examination of slides was relatively more numerous in each of the three types than would have been found in analogous cases in Nigeria. Lepromatous cases yielded several times as many bacilli in each field; globi and broken cells swarming with bacilli were more common. The percentage of scantily positive slides in the tuberculoid cases was astounding

after the constantly negative tuberculoid cases of the Owerri Province. This percentage was found to vary in the different areas of the Gambia. In the area adjacent to Bathurst and beside the sea about 19% cases were positive, in Georgetown area about 25% of the cases were positive, (tuberculoid) and in the upper river area around Basse where there was the highest incidence of leprosy the rate in certain towns approached 40% scantily positive. This positivity depended upon the type of macule. In the Basse area a high proportion of major tuberculoid and reacting erythematous macules were found and these were usually positive, also macules or the single macule of an early tuberculoid case were generally positive. The proportion of unclassified cases found positive was 85%.

3. Nerve involvement was more frequent and widespread. This was an outstanding feature of the survey. The diagnosis of many otherwise doubtful cases was established by thickened cutaneous nerves and nerve trunks, some of which were thickened and painful to an extent which seemed greatly out of proportion to the leprosy invasion as manifested by the skin lesions.

The differential diagnosis of leprosy was made difficult by the food deficiency lesions in the keratitis and atrophied skin caused by lack of vitamins. Perhaps this vitamin deficiency has something to do with the high incidence of positive tuberculoid cases. This may be upheld by the variation in the percentage of positive cases in the different areas of the Gambia. A higher incidence is found in the upper river area where vitamin deficiency is everywhere, and the lowest proportion of positive cases found in the area at the mouth of the river where diet and social conditions are better. In the Owerri Province, Nigeria the tuberculoid macule is constantly negative and in this province there is an abundance of palm oil and citrus fruits.