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Filariasis on the North Nyasa Lake Shore

BY

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A small series of investigations have been performed to assess the prevalence of microfilaraemia and elephantiasis occurring on the North Nyasa lake shore. Only two areas are present in Nyasaland where filariasis is endemic, and these are the Lower Shire in the southernmost part of the country and the Songwe area at the northern end of Lake Nyasa. This latter area is on the border between Nyasaland and Tanganyika. The Tanganyikan part of the North Nyasa lake shore was investigated in 1950 by the East African Filariasis Research Unit, and they found a very high incidence of microfilaraemia and of elephantiasis. The Kyela area, as this is usually known as, is very similar to the Songwe area in Nyasaland, the main difference being that the Tanganyikan side is more easily accessible and economically the people are more advanced.

DESCRIPTION OF THE SONGWE AREA

This area is the most northern part of the Nyasa lake shore. Within Nyasaland this area is about 100 square miles and holds a population of about 15,000. The height above sea level is about 1,500 feet and it is only a few feet above the lake level. The temperature range is between 65 and 95° F., with fairly consistent mean temperatures in the middle 80's. During the rainy season the humidity is between 80 and 90 per cent. As one goes north from Karonga the rainfall increases very steeply; at Karonga the average annual rainfall is about 40 inches, whereas at the Songwe, only some 25 miles north, it is over 100 inches. The Songwe plain is flooded from February to June or July. Rice is the main crop, though cassava, maize and bananas are grown.

Walking through the area, one sees marshy rice fields, banana groves, straggling villages consisting of wattle and daub houses with grass roofs. During the latter part of the dry season a jeep track enables one to visit the Songwe, but at any other time of the year one must walk and ford the many deep rivers which intersect the land. The road at times is under several feet of water.

Two tribes live in this area: to the north and in all the Tanganyikan part live the Wanyachusa, and to the south live the Wankhonde. Leprosy is extremely common, some of the villages having over 4 per cent. of their population afflicted. Venereal diseases and yaws are also very common. Malnutrition and vitamin deficiency are not seen, as there is ample food all the year round. Cirrhosis of the liver is common and is often due to the heavy beer drinking in which the people indulge. Most of the population suffer from one or more of the following: *S. mansoni*, *S. haematobium* and *A. duodenale*. Egyptian hepatosplenomegaly is common (Manson-Bahr, 1954).

INVESTIGATIONS PERFORMED IN AN ATTEMPT TO ASSESS THE EXTENT OF THE DISEASE

It was found that in most cases the microfilariae were *Mf. bancroftii*, though on a number of occasions *Mf. perstans* was observed.

(A)

All patients coming from the area and its vicinity had night blood films taken (thick) between the hours of 10 p.m. and 12 midnight. The patients were taken from an area considerably larger than that in which the disease was known to occur. The area can be divided into three parts (see map). The conditions in the Kyela area of Tanganyika and the Songwe area (sub-chief Kilipula) are similar. In sub-chief Karonga's area the climate and conditions are different, with a very much lower rainfall. South of Karonga township no case of microfilaraemia has been observed.

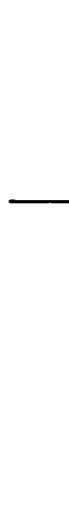
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FILARIASIS IN NORTHERN NYASALAND

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MAP OF
NORTH NYASA
LAKE SHORE

- LOW GROUND FLOODED
DURING WET SEASON
- VILLAGES



Scale of Miles

0 5 10

V.E.H.

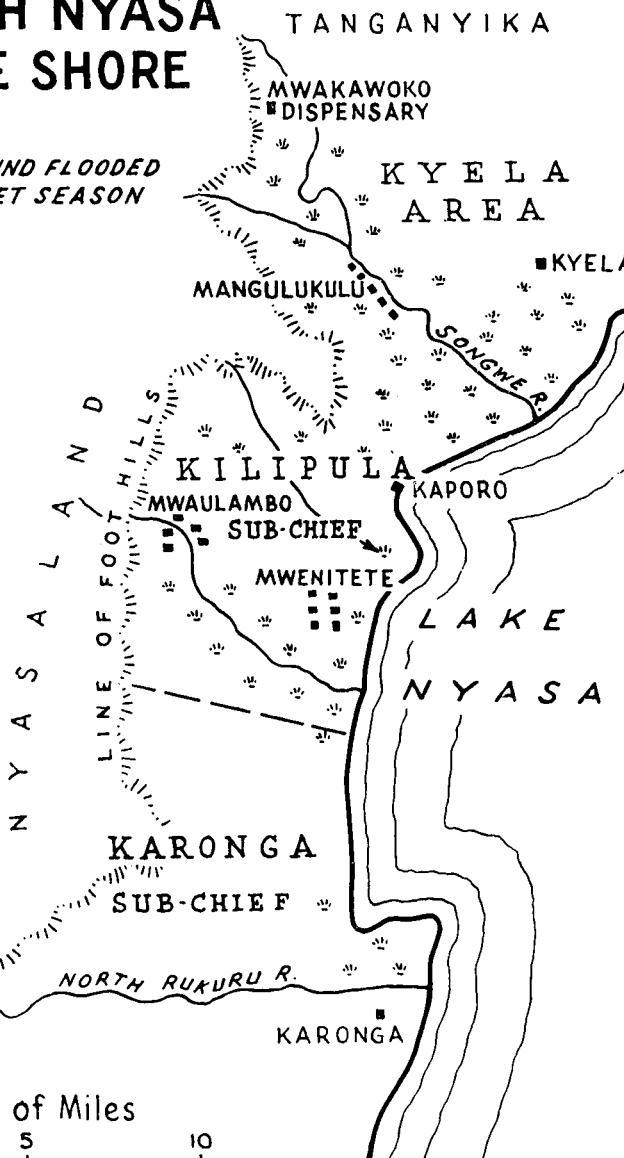


Table I

The Number of Positive Cases (Female and Male)

Total Number Examined	Night Blood Films Positive	Females Positive	Males Positive
200	32 (16 per cent.)	4 (2 per cent.)	28 (14 per cent.)

When these figures are divided up into the three areas mentioned (see map), the following figures are obtained:—

Table II

Regions Where Positive Cases Found

	Number Examined	Number Infected	Percentage
Karonga	82	6	7.3
Songwe	92	18	19.6
Kyela	26	8	30.0

These are in-patients and are not a true sample of the population, since they include many who came to the hospital with the late effects of filariasis for operation, and also many were infants. Therefore these figures are probably on the low side. It is interesting to compare the figures for Kyela obtained by the East African Filariasis Research Unit in 1950. Of 571 males, 247 were infected (43 per cent.), and of 441 females, 131 were infected (30 per cent.).

(B)

Night blood films were taken at a rural dispensary in the Songwe area (Mwakawoko: Upper Songwe).

Table III

Number of Positive Cases at Rural Dispensary, Songwe Area

Number Examined	Number Infected	Number with Filariasis
40	10 (25 per cent.)	5 (12.5 per cent.)

These patients included men and women between the ages of 10 and 70. Eight of 29 males were infected and two of the 11 females. No patients in the 10-20 age group were infected, but thereafter there was an even number of infections up to the 60-70 age group.

(C)

Three villages from the endemic area were surveyed to find how many of the inhabitants

were actually suffering from elephantiasis and allied conditions, i.e., hydrocele and hernia. This survey was carried out in conjunction with a leprosy survey and the inhabitants believed that they were being examined for leprosy. Therefore it is unlikely that many with elephantiasis hid themselves.

CLINICAL DESCRIPTION OF THE DISEASE

Of the late effects of the filariasis seen here, the most common is hydrocele, as is shown in the survey of the three Songwe villages. Sixty-three hydroceles were operated on at Karonga hospital during 1956. The local people believe that the presence of a hydrocele will render them sterile, and there is evidence to support their view (Jordan, 1955), though they fail to realise that by operating on their hydrocele there is little chance of their fertility returning.

Concerning elephantiasis of the scrotum and penis, the penis is frequently very severely affected. It is this that so often brings the patient to hospital, since he is unable to have sexual intercourse.

Elephantiasis of the legs is very common, though not often seen at the hospital, since they are not unduly worried by the disease and in most cases appreciate that there are no operations available to them.

Elephantiasis of the arms and breasts is occasionally seen, and three cosmetic partial mastectomies were performed here in 1956 for this condition. Only one case of elephantiasis of the vulva has been seen here during the last two

TABLES IV, V AND VI.—SURVEY OF ELEPHANTIASIS AND ASSOCIATED DISEASES IN THREE VILLAGES
ON THE NORTH NYASA LAKE SHORE

Table IV
Mwaulambo. Population 547

Disease	<i>Age groups:</i>	20-30	30-40	40-50	50-60	Over 60	Total
		Sex: M		1	3	1	5
Elephantiasis of legs	F						
Elephantiasis of scrotum					2		2
Hydrocele		1		4	2	1	8
Hernia							

Percentage with elephantiasis in the village: 0.914.

Percentage including associated diseases: 2.19.

Table V
Mwenitete. Population 616

Disease	<i>Age groups:</i>	20-30	30-40	40-50	50-60	Over 60	Total
		Sex: M		1	3	2	7
Elephantiasis of legs	F		2		1		3
Elephantiasis of scrotum				1	1		2
Hydrocele		1	3	4	3	1	12
Hernia			3	3	4	1	11

Percentage with elephantiasis in the village: 1.62.

Percentage including associated diseases: 4.06.

Table VI
Mwangulukulu. Population 479

Disease	<i>Age groups:</i>	20-30	30-40	40-50	50-60	Over 60	Total
		Sex: M		1	3	1	5
Elephantiasis of legs	F	1	5		2		8
Elephantiasis of scrotum					1		1
Elephantiasis of arm	F				1		1
Elephantiasis of breast	F		1				1
Hydrocele			6	11	7	1	25
Hernia			1	4	3		8

Percentage with elephantiasis in the village: 3.13.

Percentage including associated diseases: 8.56.

No cases were seen below the age of 20.



Elephantiasis of scrotum and penis. Removed under spinal anaesthetic. Weight: 28½ lb.

years, and as the patient came from an area where microfilaraemia has not been observed, it is probable that a different aetiology was present.

Elephantoid fever with lymphangitis is rarely encountered here, but that may be due to the difficulty the patients have in walking to the hospital.

A condition resembling epididymo-orchitis is very often seen. In these cases the cord is very markedly affected and these are probably cases of filarial funiculitis (Jordan, 1956). They respond poorly to antibiotics and the cord, epididymis and testis may remain painful for many weeks. A hydrocele often develops.

SUMMARY

There is a small area on the North Nyasa lake shore where Bancroftian filariasis is ex-

tremely common. A short description of the area and of the clinical disease has been given. Figures to show briefly the extent of the disease are given. There is little doubt that in this area much misery and loss of work occur owing to the disease.

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