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Bancroftian filariasis in the Sudan *

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Abstract

The authors present and discuss the results of a survey carried out in the Farbronga and Habeila areas and in the Nuba mountains of the Sudan to ascertain the incidence of filariasis due to Wuchereria bancrofti.

In reviewing the incidence of filariasis in the Sudan, Kirk (1) summarized the information given in the reports of Archibald (2) and Woodman & Bokhary (3).[a] One of us (M.H.S.), in the course of an intensive survey in Bahr El Gazal,[b] did not encounter any *W. bancrofti* microfilariae in routine nocturnal or diurnal blood films. In 1966, he carried out a complete randomized survey of Kadugli town, where Mohyel Din had described his cases. A 10% sample of the population, comprising 730 persons, was taken. Only one case (in a male) was found to be positive. On investigation, it was established that this patient came from the Lake Abyad area, 240 km south-east of Kadugli. Hospital records showed that cases had been reported from the Lake Abyad and Lake Keilak areas (the latter being 48 km south-west of Kadugli), but those cases were not included in the survey. Furthermore, 81 children from Catcha Intermediate School were examined. Only one boy, from the Heiban area, about 160 km due east of Kadugli, was found to harbour *W. bancrofti* microfilariae.

On hearing from Dr I. A. Hussein[c] that he had found unidentified microfilariae in a massive lymph-scrotum in Geneina town (on the Sudan–Chad border) in the 1930s, we decided to carry out a survey in that area. A reconnaissance survey was carried out in February 1968, when several cases were encountered—many with hydrocele and elephantiasis: at Farbronga, we found 25 cases of elephantiasis, 15 of which showed microfilariae in night blood smears, and at Habeila there were 5 cases, one of them with elephantiasis of the breasts and lower extremities and 2 with elephantiasis of both upper and lower extremities. Diurnal blood samples taken from these cases were all negative. However, since nocturnal samples were not obtainable and we were dealing with a strictly periodic type of *W. bancrofti*, this was to be expected.

In June of the same year, a further survey was conducted in the same areas. Exceptionally early rains that year prevented us from attaining our main objective—to carry out a complete randomized survey—and we were limited to conducting a smaller, localized survey. The results were as follows.

Habeila: Of 223 persons (115 males and 108 females) examined, 49 were positive for microfilariae of *W. bancrofti* and 29 of these had hydrocele.

Farbronga: Of the 56 persons (45 males and 11 females) examined, 15 showed microfilariae in their night blood smears and there were 25 cases of elephantiasis. Diurnal blood films were negative for microfilariae, and we were unable to obtain nocturnal samples. This area is contiguous with the Zalingi area from which one case was recently admitted to Khartoum Hospital and reported by Abdulla (5).

Although rainfall hindered the study of transmission by rendering many roads impassable, insects of medical importance were collected in both areas (Nuba mountains and south-western Darfur). The main features of this collection were the absence of *Culex fatigans* and the abundance of the malaria vectors, *Anopheles gambiae* and *A. funestus*, and of the yellow fever vector, *Aedes aegypti*. Hawking (5) stated that " the chief vectors of *W. bancrofti* in Africa seem to be *A. gambiae* and *A. funestus*. *C. fatigans* has been found to be a poor vector."

Comments

Most of these cases seem to have occurred in areas where there are many nonperennial rivers and

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[a] Data from a personal communication by M. Mohyel Din (1944) were also taken into consideration.

[b] Unpublished report to the Director, Sudan Medical Services, 1948.

[c] Personal communication, 1968.

permanent lakes (Lakes Abyad and Keilak in the Nuba mountains and Lake Magarora on the Sudan–Chad border). This further conforms to Hawking's view (5) that this is a disease of damp, hot areas near great rivers and lakes in Africa.

It is noteworthy that, in the case of the Darfur focus, the disease had not been detected previously, although there has been a hospital at Geneina for the last 60 years. When we visited Darfur, we were told by senior physicians of the province and of the hospital at Geneina that filariasis was never encountered in the area. They were thus greatly surprised when they saw our positive results. This confirms Jordan's observation (6) that local physicians may be ignorant of the existence of the disease when microfilarial periodicity is strictly nocturnal.

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