

## MALARIA AT KENDU BAY, SOUTH NYANZA

Kendu Bay is a fishing port and steamer landing point on Kavirondo gulf. The area comprises a swamp zone on the lake plains at about 3,700 feet, an escarpment, and a plateau zone above at 3,850 feet. There is more swamp in the west where the river Oluoch meanders over a flat plain. The east is generally higher and the rivers are shorter, faster and without meanders. Rainfall at Karachuonyo Camp, Kendu Bay, over an eighteen year period averaged 44 inches as the yearly total with the following number of inches per month:—

J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
1.41	2.62	4.14	8.15	7.03	3.43	3.38	4.01	2.89	2.02	2.08	2.85

Mosquitoes breed in the rivers Awach and Oluoch in the west and increase in number in the rainy seasons, but the number of malarial cases is higher in the so-called short rains (August to October), than in the months of highest rainfall (March, April and May) at the end of the so-called long rains. This is because during the long rains more of the larvae get washed away. In the swampy areas malaria is endemic and occurs throughout the year.

The only hospital in the vicinity is a missionary one, and because of the need to pay for treatment only really serious cases are reported. About a twentieth of all hospital admissions are for cerebral malaria, and the majority of these cases are of children under one year of age who get cerebral malaria on their first malaria infection. Cerebral malaria was the most frequent cause of death amongst patients admitted and in most of these the illness was well-advanced on admission. Most of the malaria patients come from the west. Generally there are few adult patients as immunity is usually acquired; but adult women in particular suffer from anaemia as a result of malarial infections. The following table of malaria cases reporting to Gendá hospital in 1965 gives an indication of the seasonality of the disease:—

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.
in-patients	200	240	250	190	180	260	280	380	370	370	370	200
out-patients	700	580	700	600	550	600	680	800	680	660	640	680

From a survey of the school-children in the Kendu area roughly two-thirds of the households know anything about anti-malarial drugs, and those who were anxious to prevent the disease commonly took the wrong drugs, designed for head-aches, back-aches and such-like pains. The general medical view is that a naturally acquired immunity is more desirable than fruitless attempts at suppressing malaria. Only a small proportion of the people use mosquito nets, though some burn a Farutox coil, and a few traditionally burn a local plant, "makinga".

The incidence of malaria is commonly fairly high when most work is necessary in the fields. Land preparation begins in December and continues until early March; planting of millet and maize begins at the end of February and lasts until the end of March; and weeding continues until early May. During most of the period the mosquitoes are fairly active. Harvesting begins at the end of June and continues until the beginning of August in the succession, maize, millets and groundnuts. Cotton, the second cash-crop after maize is planted from August to October and is ready for picking from January. Most of the cotton is grown in the plains. Because many of the men have left to work in towns it is the women who do most of the work on the land and consequently are more prone to malaria. Because women who work the land have to nurse the children, the sickness of the children may therefore also affect the amount of time the women can devote to cultivating and time spent attending hospital is time lost to cultivat-

ing. Likewise the high amount of anaemia amongst the women reduces their efficiency as an agricultural labour force.

Fishing is another activity which leads to contact with the mosquitoes for the main fishing months when fish are most abundant are also those when most malaria is about. The men-folk fish in the lake, but women commonly fish the rivers where most mosquitoes are; and they also carry the fish to market. Some of the best fishing places are the pools of stagnant water left behind after the flooding of the mouths of the Awach and Oluoch; but these are also mosquito breeding sites.

There is less malaria on the plateau than below the escarpment; but here the land is less fertile, and there are fewer settlements, especially in the higher east. Most of the settlements in the east are of administrative or missionary establishments and there is little agriculture. Most of the agricultural settlement is in the malarial west; but even here the really swampy areas of the Oluoch and Awach are avoided. The greater amount of settlement in the malarial plains is solely the result of the greater fertility of this area. Some plateau dwellers have plots on the 'Pap' (or lowland); but for the most part people prefer to live on the lowlands with their good quality agricultural land in spite of the presence of malaria.

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## EXPANSION OF FACILITIES AT EAST AFRICAN SEAPORTS

Port capacity, in as far as it determines a country's ability to engage in external trade, is often an indicator of the country's prosperity. This is particularly true of the new states of Africa, the bulk of whose trade is with overseas areas. In East Africa there exists a very wide variation in terms of capacity between the five ocean terminals of Mombasa, Tanga, Zanzibar, Dar es Salaam and Mtwara. Mombasa is by far the best equipped of the group, and the extent of facilities at Dar es Salaam is much less (Table 1). Tanga and Zanzibar are equipped only as lighterage ports; and although Mtwara has an excellent natural harbour and a deep-water quay, the level of traffic handled there is very low.

At the two larger seaports of Mombasa and Dar es Salaam the level of facilities is not adequate to deal with present-day traffic movements without involving considerable delays, and at the smaller ports some congestion occurs at certain seasons. Problems of congestion at East African seaports arise mainly from the handling of import cargo, and are caused by shortages of railway wagons on feeder lines as well as by lack of berthing space. Except at peak periods the physical and administrative problems of handling export cargoes are much less, since although quantities are large the range of commodities involved is smaller. Serious congestion has occurred at intervals throughout the development of Mombasa and Dar es Salaam. At Mombasa delays became increasingly serious in the 1950's, particularly in 1955 and were only temporarily relieved by the opening of the first phase of the Kipevu extensions in 1961. In the second quarter of 1961 congestion again reached a critical stage, involving some ships in delays of up to ten days before working. Although partly due to the simultaneous arrival of an unusually large number of ships with heavy import cargoes, this difficult period showed clearly that the margin of spare capacity available above that needed for average working conditions at Mombasa is very small. At Dar es Salaam a marked improvement in shipping turnaround followed the opening of the first deep-water berths there in 1956, but ten years later congestion is building up again and extensions to the facilities are badly needed. Pressure on facilities