

THE DISTRIBUTION AND TRYPANOSOME INFECTION RATES OF TSE-TSE IN SOUTHERN DARFUR

O.M. Osman M.M. Musa

Veterinary Research Administration Soba

Introduction :

The area under review lies in the south Western corner of Southern Darfur Province between lat $9^{\circ}.16''$ — $9^{\circ}.50''$ N long 24° — 24.45 E. It is drained by two main tributaries of the river Bahr El Arab, known as Wadi Umbalasha and Wadi Adda. They run from the central African Empire across two ecological zones of open Savannah; The Terminalia-Sclerocaria- Anogeisus Prosopes (RF. 600—900mm) and the Anogeisus Khayaisoberlina — Decidious woodland. The area is inhabited by shifting cultivators honey collectors, game hunters and fishermen who keep goats donkeys and dogs., The nomadic Baggara herds enter the area, obliged by the scarcity of pasture in the dry season.

The game animals include the Baboons, Bafaloes, Roon antilopes, Tiang, Reed buck, Ducker, Giraffe, Warthog and the Bush pig.

The tse tse presence in the area was first reported by Lewis 1949 and subsequently several infested areas were reported by Yagi and, Abdulrazig 1968.

Cattle passing through the area are exposed to infection and according to Abdulrazig et al 1975, *Trypanosoma congolense*, *Trypanosoma vivax* and *Trypanosoma brucei* were present in their blood.

The Purpose of this survey was to gather further information of the distribution of tse tse flies in the area and also on their trypanosome infection rates.

Material and Methods :

This work was conducted during April and May 1978 in localities on Wadi Adda and Wadi Umbalasha. The fly rounds as described by Yagi and Abdulrazig 1978 were applied for fly density survey

and six rounds during three days were conducted in each locality.

After counting and sexing the flies, the teneral were discarded and the rest of the flies were examined for trypanosomes using the method described by Jordan 1964.

Results :

Fig. (1) shows that both Wadi Adda and Wadi Umbalasha were infested with tse tse flies. All caught and examined tse tse were *Glossina morsitans* species. The fly density was higher on Wadi Adda than on Wadi Umbalasha. In Goz Shalali and Sungu on Wadi Umbalasha the fly density was very low, but relatively a higher density was observed in Dahal Dalaib and Ummashtur. In Wadi Adda a higher fly density was observed in all examined localities.

Among 1364 tse tse flies examined for trypanosomes 184 flies were found infected. The average infection rate in the whole area was 13.5 %. On Wadi Adda the infection rates were relatively higher than on Wadi Umbalasha. The highest infection rate was found in Kafia Kengi (25.8 %) on Wadi Adda and no trypanosomes in the few caught and examined flies in sungu and Goz Shalali on Umbalasha river.

Results were shown in Table 1 a and b.

Discussion :

The high *G. morsitans* density reported on Wadi Adda can be attributed to the highly favourable ecological conditions. In the surrounding of Wadi Adda there were highly suitable vegetation belts for fly breeding which were undisturbed by human activities. On the other hand bush clearance, burning shifting cultivation and settlement activities in the surrounding of Wadi Umbalasha, besides the low cattle and game density in the area, rendered the situation less favourable for the fly. On Wadi Adda there were higher densities of cattle and game animal-but cattle are apparently the most available host for the fly.

Yagi and Abdulrazig 1972 and Abdulrazig et al 1975 attributed the northward spread of tse tse on

Wadi Umbalasha to influx of game animals. But on Wadi Adda tse tse may spread from the main belt by cattle and game movements. Tse tse flies may be carried by cattle and game animals moving along the stock routes which are adjacent to the Wadi. This situation might have created linear fly advances similar to that described by Baldry 1969 in Northern Nigeria.

In this survey the tse tse infection rates varied from 0—3.3% on Wadi Umbalasha and 14.6—25.8% on Wadi Adda (Table I a and b). The infection rate was remarkably low on Wadi Umbalasha in spite of the fact that there were two areas out of four with high tse tse infestation.

It may be assumed that the infection rate may be a function of the cattle density. High infection rates on Wadi Adda may be due to more flies feeding on cattle.

Assessment of fly infection rates is a very important epidemiological parameter. Further investigations may include analysis of trypanosome species and determination of blood meals.

Summary

Tse-tse infection rate in relation to their distribution on Bahr Elarab river tributaries (Wadi and Wadi Umbalasha) were discussed. Wadi Adda was more infested with tse tse than Wadi Umbalasha. The trypanosoma infection rate was higher in tse tse of Wadi Adda. The high tse tse infection rate on Wadi Adda was attributed to the relatively less disturbed ecological situation. The high trypanosome infection rate on Wadi Adda may also be attributed to high density of infected cattle that may furnish the fly infection.

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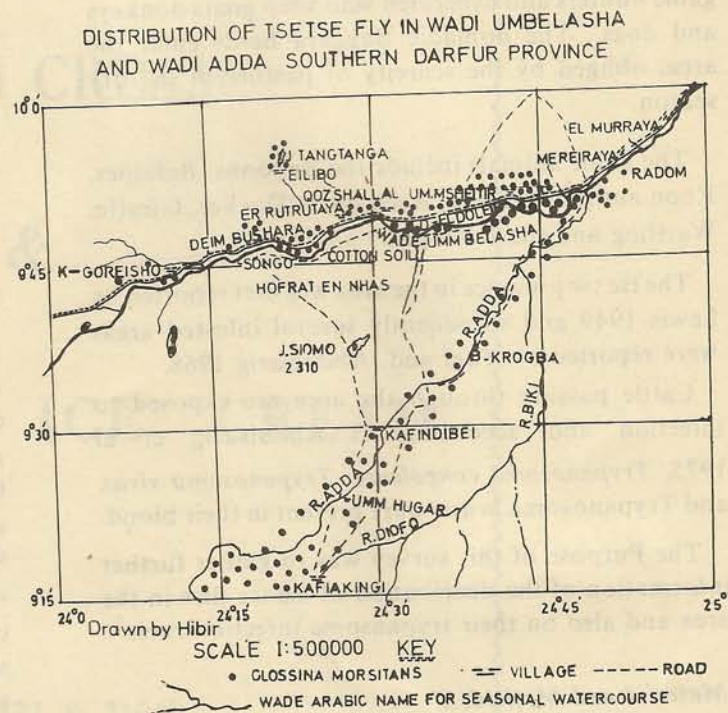


Table 1a : Number of tse-tese and their infection rate on Wadi Adda.

Area	Male	Female	Total G. morsitan examined	Positives G. morsitans	% Infection
Kurguba	162	32	194	48	24.6
Kafia kingi	180	48	328	85	25.8
Kafan Debii	243	23	266	38	14.6
Total	585	103	788	171	Average infection rate 21.6%

Number of tse-tse and their infection rate on Wadi Umbalasha.

Area	Male	Female	Total G. morsitans examined	Positive G. morsitans	% infection
Dahal Dalaib	284	18	302	10	3.3
Goz Shalali	20	—	20	—	—
Sungo	9	—	9	—	—
Ummashter	230	15	245	3	1.2
Total	593	33	576	13	2.3% Average infection rate