

18th February, 1963.

Article 13

TRYPANOSOMIASIS INFECTION IN PRESERVED
HEADS OF G. MORSITANS:

Collections of G.morsitans caught on bicycle patrols in various regions of the country have been submitted monthly to Salisbury for dissection. The heads of these flies are severed from the bodies and preserved in methyl alcohol before being brought in from the field. In Salisbury they are dissected and examined for the presence of trypanosome infections. The technique does not allow for the specific identification of the trypanosomes found, nor does it reveal the presence of salivary gland infections characteristic of the polymorphic group. It has however provided a rough survey for a year now, of incidence of infections in the vector of trypanosomiasis with which we are most concerned.

RESULTS:

The survey has more or less covered the Zambezi front. The records from Urungwe north and from the old Sebungwe shooting operations area (Malimasimbi E. and F and Kenyandavu A. and B.) have been continuous throughout the year. Those from Sanyati are not available for the first two months and those from Lusulu for the last three months. A few records from Mtoko have been included. These refer to flies caught on the Nyatikungu, Chamuku and Mudekabasa rivers.

To make the analysis easier and to obtain percentages of infection which are based on samples of at least 200 dissections (usually more) the figures have been grouped roughly into seasons. November and December represent the early wet season, January, February, March and April the advanced wet season, May, June and July the cool dry season and August, September and October the late hot season. The infection rates for these different seasons are shown in the table and in the graph (1) attached and the general picture of changes in incidence of infections seems to be fairly clear. On the whole the cool dry months of May, June and July seem to be the period when infections in G.morsitans are at a maximum, the rate of infection varying with the different areas. In November and December the infection rate appears to be lowest.

URUNGWE NORTH:

I have divided this area into two regions, the northern part (fly rounds 1, 2 and 3) situated in the escarpment where Brachystegia woodland is the dominant vegetation and the central part where the fly-rounds (5,6,7 and 10) associated with the lower Charara drainage are as far as I know, largely in Colophospermum mopane woodland.

The northern region (1,2 and 8) is the one sample which does not appear to fit the general picture and I am at a loss to explain this. However, if the incidence of the reservoir hosts of trypanosomes exerts some sort of influence on the infections in the vector, the hunting in the Wild Life Controlled Shooting Area between Kariba and the Nyakasanga river may be in part responsible.

The central region is interesting because it is here that the infection rate appears to reach a higher figure than in any other of the areas investigated. In the period May, June and July an average figure of 31.5% (in 416 flies dissected) was recorded. Infection rates of this order have, of course, been recorded elsewhere. A.M. Simmonds found 38.5% of 200 live G.morsitans from the Mateswa river area (South Lundi) infected in October 1961, and 32.8% of 210 live G.morsitans in the Gwave river (Gokwe) area in July and August, 1961. At Rokomitjie in August and September, 1960, 35% of 254 flies were infected and more recently on the Busi river (Lusulu Ranch) a figure of 30.5% of 554 flies was recorded, so that the result is not exceptional. However, most of the other records of high infection rate refer to quite small areas over a relatively short space of time and are derived from dissections of live flies in which the infection rate is always slightly higher than in preserved flies.

SANYATI:

In this area the general infection rate does not appear to be unduly high, 18.6% being the maximum, recorded in May, June and July. The figures are based on catches from fly rounds 4, 5, 6, 7, 8, 9, and 10. In January and February alone the infection rate was only 9.4% and dissections of live flies on the Umvumvudzi river by A.M. Simmonds in August 1961 showed 13.6% to be infected. Never having myself visited this area I am unable to discuss the possible significance of vegetation types and game populations associated with the fly rounds.

KENYANDAVU/MALIMASIMBI:

Catches on fly rounds in these areas situated in Brachystegia woodland appears to be high in comparison with Urungwe north and the infection rate higher than the other areas investigated with the exception of Urungwe central. The highest infection rate, 20.2%, was again recorded in May, June and July.

LUSULU:

Some figures from the Lusulu bicycle fly rounds have been included. Comparatively speaking the infection rate in this area is low, the maximum recorded being only 16.1%. Dissections of live flies from the Lusulu ox fly rounds RS03 have produced rates over 20%, though not over 25%. On the Busi river, however, as mentioned above, a rate of 30.5% has been recorded in live flies.

MTOKO:

The figures shown in the diagram are derived from flies caught on the Chamuku, Nyatikungu and Mudekabasa rivers which drain from the south into the Ruonya. The infection rate here is the lowest recorded. Unfortunately no dissections of live flies have been made in this area for comparison.

DISCUSSION:

I do not think that further dissections along these lines will yield any useful information. Collections made from time to time in areas of special interest e.g. Chipinda Pools could be sent in and the infection rate assessed but I would think that most of Mr. Huggett's time could be better employed on some other project, possibly the examination of blood slides for Mr. Boyt or Dr. Roth.

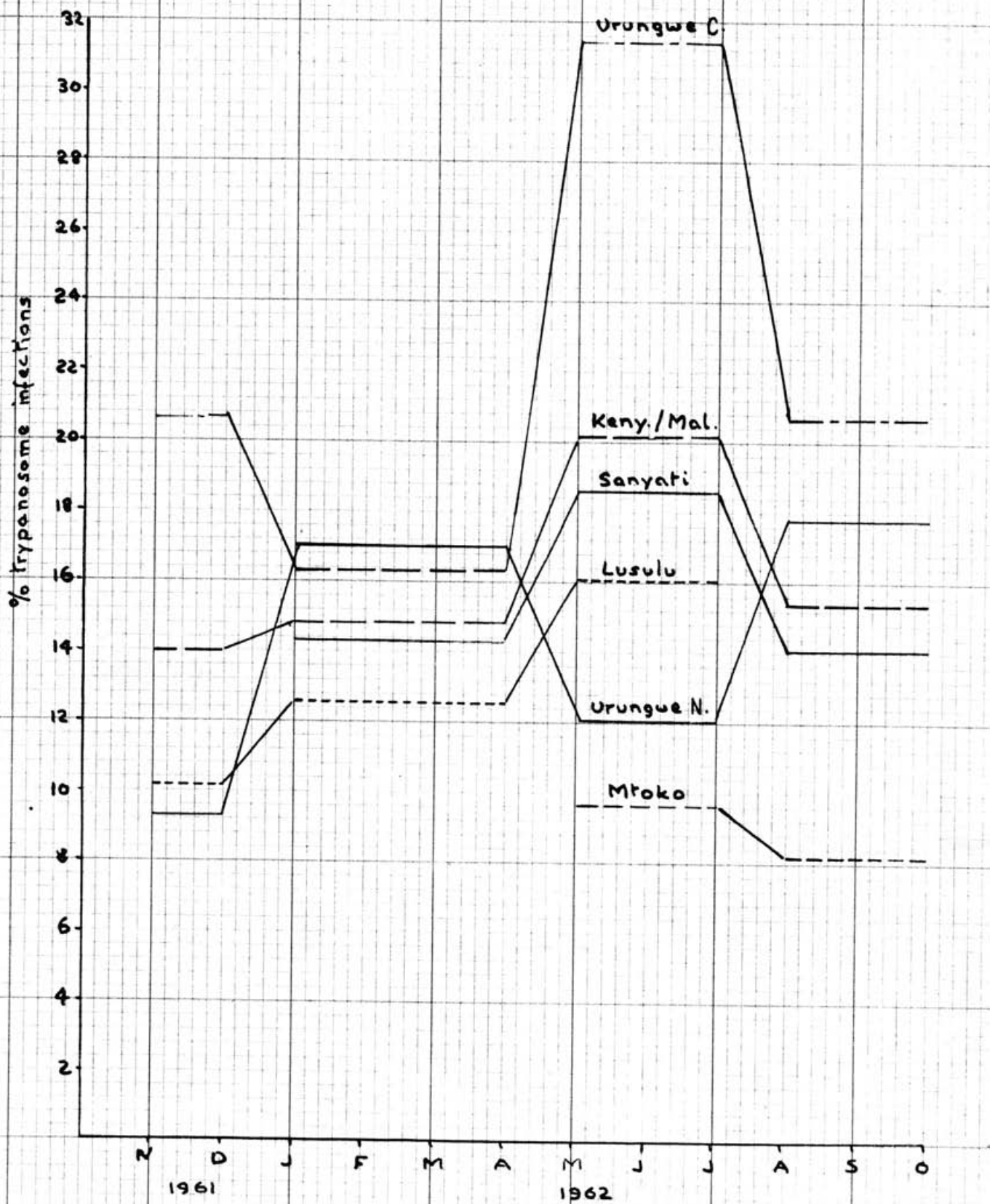
(Miss B. M. Leggate)

ENTOMOLOGIST.

November-December. no.diss. no.inf. % inf.	Jan. Feb. Mar. April. no.diss. no.inf. % inf.	May-June-July. no.diss. no.inf. % inf.	August. no.diss. no.inf. % inf.	Sept. October. no.diss. no.inf. % inf.					
<u>Urungwe North:</u> Nos.1, 2 & 8. 201 19 9.4	270	46	17.0	83	10	12.1	258	46	17.8
Nos.5,6,7 &10. 353 73 20.7	323	53	16.4	416	131	31.5	1186	246	20.7
<u>Sanyati:</u> Nos.4 - 10: ? ? ?	494	71	14.4	807	150	18.6	877	124	14.1
<u>Iusulu:</u> LB 1 & 2. 294 30 10.2	696	88	12.6	192	31	16.1	?		?
<u>Kenyandavu - Malimasimbi:</u> ⁺ A, B, E & F. 415 58 14.0	1428	212	14.9	326	66	20.2	148	23	15.5
<u>Mtoko:</u> ? ? ?	?	?	?	257	25	9.7	168	20	8.2

⁺ The working of fly rounds B and F was discontinued in May.

TABLE 1.



Trypanosome infection rates
in preserved G. morsitans