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Observations on the Activity Cycle of *Glossina swynnertoni* Aust.

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Abstract

Study of the daily activity pattern of *G. swynnertoni* carried out in the Serengeti National Park showed that this species is active throughout the day with a maximum peak occurring from 0900 hours to noon and a smaller peak of activity from 1400 to 1600 hours.

Introduction

The activity cycle, that is relative numbers of flies collected at different times of the diel during the day or throughout the 24-hour period, has been studied for some *Glossina* species (Williams, 1943; Vanderplanck, 1941, 1948; Moggridge, 1948, 1949; Pilson & Leggate, 1962; Power, 1964; Harley, 1965). Activity cycle of *G. swynnertoni,* however, has not been reported. During a sleeping sickness survey in Musoma District of Tanzania (Moloo et al., 1971) study of the daily activity pattern of *G. swynnertoni* was also carried out in the Serengeti National Park. The results are reported and briefly discussed in the present paper.

Materials and Methods

A catching station was selected in the thorn bush area, about one mile from the road between Seronera and Banagi, where *G. swynnertoni* are abundant. A black cow was tethered to a tree by a short length of rope and two field assistants caught flies that alighted on it. Catches were made between 0600 and 1800 hours and hourly catches were recorded. In view of the danger of wild game in the area, it was not possible to study the night activity and it was very difficult to continue the use of bait cow for more than three days.

Results

Table 1 gives the numbers of males and females of *G. swynnertoni* collected at different times of the day and Figure 1 shows the activity cycles. The pattern of activity was more or less similar for both the sexes. The overall pattern comprised a low activity during the first three hours after sunrise followed by a maximum peak between 0900 hours and midday. A second smaller peak was recorded between 1400 and 1600 hours, after which the activity fell fairly rapidly and only a few flies were taken during two hours before sunset.

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Day	sex	Hours																					
		6-7		7-8		8-9		9-10		10-11		11-12		12-13		13-14		14-15		15-16		16-17		17-18	
I	♂♂	1	1	0	0	5	5	34	37	15	24	18	20	8	11	5	7	10	13	7	11	1	2	0	0
	♀♀	0		0		0		3		9		2		3		2		3		4		1		0	
II	♂♂	0	0	1	1	7	7	25	30	33	39	28	33	7	11	10	12	14	19	10	13	3	4	1	1
	♀♀	0		0		0		5		6		5		4		2		5		3		1		0	
III	♂♂	0	0	0	0	3	3	38	45	18	28	25	28	4	17	9	11	10	14	11	16	5	6	0	0
	♀♀	0		0		0		7		10		3		3		2		4		5		1		0	
Total	♂♂	1	1	1	1	15	15	97	112	66	91	71	81	19	29	24	30	34	46	28	40	9	12	1	1
	♀♀	0		0		0		15		25		10		10		6		12		12		3		0	

Table 1. Hourly catches of *G. swynnertoni* on three experimental days.

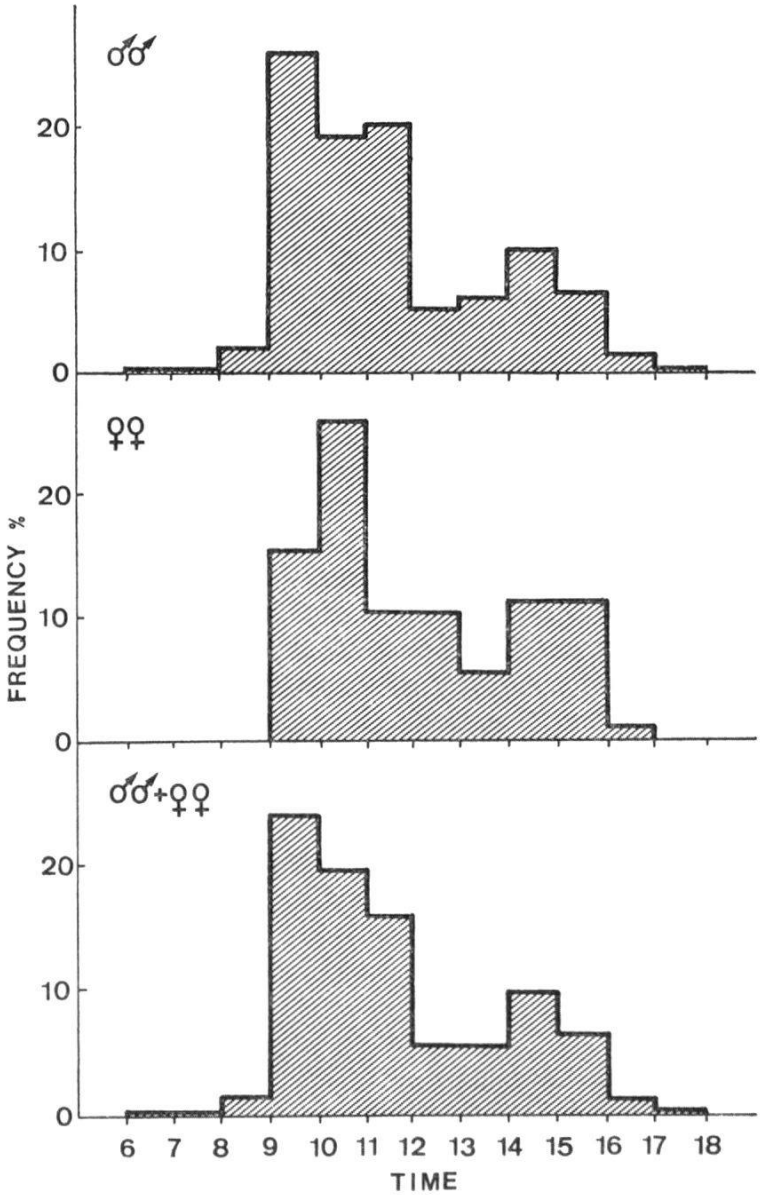

Fig. 1. Daily activity cycles of *G. swynnertoni* males and females.

Discussion

The present study shows that *G. swynnertoni* is active throughout the day with maximum activity occurring from 0900 hours to noon and a smaller peak of activity from 1400 to 1600 hours. It is possible that the pattern of day activity of this species is related to the changes in temperature and/or light intensity. A small number of flies were taken during the early part of the day and as the day heated up there was a considerable rise in activity lasting for three hours. After this maximum activity, the number caught declined between noon and 1400 hours. This could be due to either excessive temperature or light intensity. After this period, there was a smaller peak of activity followed by a fairly rapid fall. It would seem that the flies are most active when the ambient temperature and/or light intensity are at a certain level. When these are above or below this optimum, the activity is less.

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