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**OBSERVATIONS ON NOCTURNAL  
ACTIVITY IN A SPECIES OF  
MANTISPIDAE (NEUROPTERA)**

By

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OBSERVATIONS ON NOCTURNAL ACTIVITY IN A SPECIES OF MANTISPIDAE (NEUROPTERA)

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During the study of the flight activity of certain species of Ephemeroptera at Jinja, Uganda in 1956-8, records were kept of specimens of a species of Mantispidae caught by a Robinson mercury vapour light trap from 14th September 1956 till 6th September 1957. During this time the trap was run every seventh night. During each sampling night the trap was emptied every tenth minute from sunset to sunrise. Each sampling night thus yielded seventy two ten-minute samples.

Working with ten-minute samples, it is imperative that the time lost in emptying the trap is reduced to a minimum. The set-up used by CORBET & TJØNNELAND (1955) was therefore adopted, whereby the insects on entering the trap drop into a deep beaker of alcohol which fits below the entry cone. The trap is emptied by changing beakers.

The trap was kept in the same position and locality, approximately 150 metres from the northern shore of the Napoleon Gulf of Lake Victoria, for the whole time during which the insects were collected. Details of the site, as well as of the climatic conditions, can be found in TJØNNELAND (1960).

The fifty-two sampling nights mentioned yielded a total catch of ninety specimens of Necyla sp. nov. TJEDER (in press), of which seventy-two were males. The collection has been given to the University of Lund, Lund, Sweden and I want to thank Dr. TJEDER, Falun for having studied the collection of Mantispidae and for describing the species. Catches were recorded throughout the whole year as seen from Table 1 below:

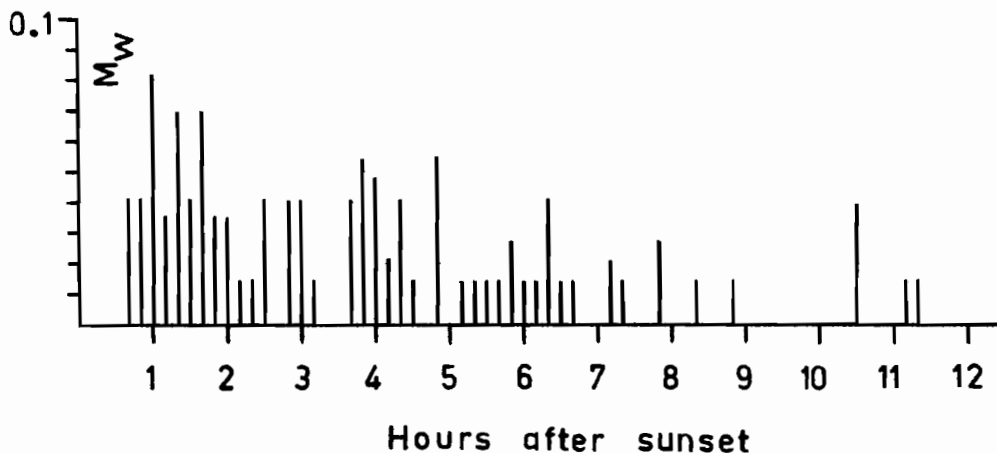
Table 1. The number of specimens of Necyla sp. nov. TJEDEK (in press) caught by a mercury vapour light trap at Jinja, Uganda in 1956-7. The number of sampling nights was fifty-two.

	1956											1957	
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	
No. of sampling nights	3	4	5	4	4	4	5	4	5	4	4	5	
No. of specimens caught	4	3	19	1	1	4	10	11	10	6	4	17	
Average catch per sampling night	1.33	0.75	3.8	0.25	0.25	1	2	2.75	2	1.5	1	3.4	

\* No specimen caught in the one sampling night of September 1957.

Though the average catches per sampling night show maxima for the months of November 1956, March-May 1957 and August 1957, these maxima could well be accidental. One should remember that the sampling nights were few and that the total number of Mantispidae was small.

Fig. 1 gives the average catches of this species of Necyla for each of the ten-minute sampling periods throughout the night. The catches have been expressed in terms of Williams' mean ( $M_w$  - cf. HADDOW, 1960).



It is clear from Fig. 1 that the flight activity of this species is partly crepuscular since catches have occurred within the period of twilight both in the evening and in the morning. It is equally clear that the flight activity is by no means predominantly crepuscular, since most of the insects have been caught in the period between the end of the astronomical twilight in the evening and the onset of the astronomical twilight in the morning. The heaviest catches (cf.  $M_w$  - values) occurred early in the night. After the maximum was reached, the catches decreased, but so slowly, that catches were recorded for nearly all hours of the night.

Unfortunately it is not possible, as yet, to interpret fully the flight activity data. The biology of the adult Mantispidae is largely unknown. They are, however, feeble fliers (SKAIFE, 1953) and it should be pointed out that the wind strength at Jinja is generally much lower during the night than it is during the day (cf. TJØNNELAND, 1960).

We must assume (SKAIFE, 1953) that the Mantispidae use their front legs to catch their prey in the same way as do the Mantidae. We do not know which Arthropods the Mantispidae feed on, but it is obvious that the small

Mantispidae cannot feed on the larger Arthropods.

Mantidae were also caught by the trap, and they were some times observed feeding near the trap well after dark. Though the trap attracted a fair number of Mantispidae, no observations that could give a clue to the biological meaning of the flight activity could be made, since none were observed alive. One question that remains unanswered is whether the species dealt with would feed after dark. At the lake shore there is, at this time, certainly no lack of smaller Arthropods upon which they could feed.

The fact that most of the specimens caught were males has already been mentioned, the catch sex ratio being 2.67 males to each female. The catch sex ratio cannot be taken as representing the true sex ratio since too many uncertain factors are involved. We do not know to what extent these insects are attracted to light, nor do we know if the two sexes are equally attracted. And since, in addition, we know nothing about the proportions of the male and the female population flying at night, it is evident that we are not justified in deducing anything from the catch sex ratio.

The adult Mantispidae are small insects and they are difficult to find in nature. A study of their biology is therefore apt to be difficult and time-consuming. Yet such a study is badly needed and should give fascinating results.

### S u m m a r y

The catches of a species of Mantispidae in a mercury vapour light trap were recorded at Jinja, Uganda in 1956-7. Catches were recorded throughout the year and it is evident from the catches that the species flies throughout most of the night, including the periods of twilight in the evening and in the morning. The heaviest catches were experienced between one to two hours after sunset. The males dominated the catches.

R e f e r e n c e s

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