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PREDATORY BEHAVIOUR OF THE PHOLCID SPIDER *CROSSOPRIZA LYONI* (BLACKWALL) ON MOSQUITOES (*AEDES SP.*)

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ABSTRACT

Predatory behaviour of the pholcid spider, *Crossopriza lyoni* (Blackwall), on mosquitoes (*Aedes* sp.) displays fascinating style of wrapping of the prey with silk. The spider takes about two hrs to complete the preying-feeding action for each mosquito and may "consume" 12-20, on an average 15 mosquitoes (*Aedes* sp.), in a 24 hrs period. The predator also disposes off the prey-residues after feeding, perhaps, to keep the web clean.

INTRODUCTION

During the course of investigations on the behavioural biology and biological control potentials of some spiders, the authors observed the predatory behaviour of *Crossopriza lyoni* (Blackwall) on a variety of insects at Kakdwip, 24-Parganas, West Bengal. These spiders displayed fascinating ethology of predation on various insect preys, of which predation on mosquitoes (*Aedes* sp.) is, herein, communicated.

MATERIALS AND METHODS

Crossopriza lyoni (Blackwall) is a house dwelling pholcid spider which prepares irregular snares at the very inside of houses. They have been observed on several occassions since June 1980 in a room of an electrified, single storeyed, residential building where *C. lyoni* were allowed to live "undisturbed" for study. The time required for handling a prey has been recorded from time to time. The methods of prey-capture, duration and frequency of feeding, etc., were noted accordingly. The predatory potential is estimated by supplying freshly killed mosquitoes.

OBSERVATION

C. lyoni construct irregular snares in all four corners, ceiling and other suitable sites, preferably nearer to the source of light.

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residue after feeding and tries to keep the preferred site for feeding and / or resting free from prey-waste-residue. However, prey-residue may be sometimes seen hanging on the underside of the snare constructed at corner.

Discussion

Great differences exist among spiders as regards the manner in which they obtain their prey (Bristowe, 1958 ; Tikader, 1980). The spiders are, accordingly, categorised as weavers, those who trap their prey by preparing webs, and non-weavers, those who hunt their prey by chasing or by stalking. The pholcid spider, *Crossopriza lyoni*, belongs to the former group. Individuals of this species spin an extremely fine but irregular cobweb, from which they lie suspended upside down. This type of orientation is unlike that of the most of the aerial web-weaving spiders as they orient themselves in a face-down position while resting in their webs (Eberhard, 1967).

Informations are available on the predatory behaviour of lycosid spiders (Cragg, 1961 ; Edgar, 1969 ; Rovner and Knost, 1974 ; Greenquist and Rovner, 1976), diguetid spiders (Eberhard, 1967), linyphiid spiders (Turnball, 1960 ; Eberhard, 1967), dictynid spiders (Jackson, 1979a, b) and araneid spiders (Kajek, 1965). However, very little is known on the prey-capturing mechanisms of pholcid spiders (Bristowe, 1958).

In the pholcid spider, *C. lyoni*, prey-wrapping is a prerequisite to feeding as known to be associated with those spiders that construct trapping webs. This prevents prey from falling out of the web from the spider's elevated sites during feeding, grooming, or subsequent capture attempts (Eberhard, 1967). Rovner and Knost (1974) also suggested that wrapping by lycosids might serve to free the spider from subsequent attacks on additional prey, as occurring in web-weavers.

The preys are normally wrapped after the prey has been subdued by biting in the diguetid and linyphiid web-weavers (Eberhard, 1967). However, this sort of post-immobilization wrapping has not been observed in the present species. This might be due to the fact that the preys were held in a tightly wrapped package and that wrapping began after the prey had ceased most of its vigorous struggling movements. Our findings in this regard supported Rovner and Knost's (1974) hypothesis that the absence of vigorous movements by the prey is a necessary part of the stimulus situation for the onset of wrapping.

Duration and frequency of feeding along with waste disposal of prey residue have been studied in the present species. Our data on the frequency of feeding in *C. lyoni* as observed by supplying freshly killed mosquitoes may lend support to their biological control potentials, as a single individual may devour as many as 20 mosquitoea in a 24 hrs period.

Since the preys of this spider-species are widely incriminated as vectors of various diseases of man and domestic animals, the present study will supply certain useful informations to the biological control programme of mosquitoes.

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