A REPORT ON SPIDERS OF MANNAMPANDAL AREA OF NAGAPATTINAM DISTRICT, TAMIL NADU WITH A NOTE ON ITS WEB PATTERN

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Introduction

Spiders are a group of animals that are often neglected due to ignorance and fear and above all on aversion towards them. The widespread conception that spiders are highly poisonous, noxious and ugly is purely prejudice as scientists have proved that but for a few exceptions, spiders are generally harmless to man. Some spiders are social and some others cannibalistic. They are skillful hunters (Lycosids), jumpers (Salticids) excellent architects and specialized swimmers. Among the wonders of natural history few things are more remarkable than these small, many legged animals often beautiful in structure, striking habits, and complex life histories, yet seldom obstruding themselves upon our notice. Many species of spiders in the country still remain unnamed. Earlier account on spiders of India includes that of Pocock (1900), Gravely (1921), Dayal (1935), Stoliczka (1969), Tikader and Bal (1981), Tikader and Biswas (1981). Recently spiders are thought of playing a significant role in the control of agricultural insect pests. Thus, the Integrated Pest Management (IPM) strategies often include spiders as an important component. This paper provides a checklist of spiders and its web pattern in Mannampandal area.

Methods

The study was conducted in Mannampandal area of Nagapattinam district, Tamil Nadu from December 1995 to February 1996. A thorough search was made in agricultural lands, gardens and buildings. Spiders were collected and preserved in 70 percent Alcohol. The collected specimens were identified with the aid of standard systematic key references used in the identification of spiders (Pocock, 1900; Tikader & Bal, 1981; Tikader & Biswas, 1981).

Results

A total of 12 species of spiders were collected from the study area during the study period. They belong to six families, nine species of spider were identified up to species level (Table 1) and the rest of the species were identified at family level *viz.* Salticidae and Araenidae.

Types of spider webs:

Three types of spider webs were recorded during the study period. They are as follows:

Orb web

Orb web is perhaps the most familiar one and has a central hub with strong radial fibres extending to the outer frame. A more or less circular spiral of silk spun across the radii. The composition of the radial fibres is different from that of the circumferential fibres. Some fibres are coated with an oily layer to prevent them from becoming brittle. Generally large orb weavers produce thicker threads. Within one species of spider, the diameter of the thread also changes with age. The thread thickness of a large orb-web is 0.01mm to 0.012mm. The thread produced by *Nephila* is the strongest among spider threads. The strong web of *Nephila*, matted and twisted, are used by South sea Islanders for various kinds of bags and fish net (Kullmann, 1975). As a spider walks around, it usually emits a double or even quadruple thread called "dragline".

Scant web

Spiders of family Hersilidae build scant web of irregular threads on walls and tree barks.

Irregular mesh web

These are small sedendary spiders that build irregular sticky webs in shrubs and herbs, or more rarely on ground debris or stones and walls. These webs are either sheet-like or irregular with the spider handing in an inverted position beneath the web. The female carry the egg sac in jaws. Spider of the families of Pholicidae, Dictynidae, Psechridae, Theridiidae are a few of the irregular web weavers.

The orb webs were characteristic of *Argiope arcuata*, *Gasteracantha geminata* and *Tetranatha* sp. The webs of *Argiope arcuata* with viscal spirals. Sheet webs were found the spider family of salticidae. The scant web found the spider *Hersilia savigyni*. The webs irrregular mesh webs were found the spider *Artema crossopriza* and *Artema atlanta*.

Received 9 April 1999; *Accepted 17 May 1999*

Discussion

The result of the present study showed the great variety of spiders exist in the study area, as 12 species could be collected within a short period of 3 months covering a single season of an year. Majority of the specimens was collected from the agricultural lands. The *Heteropoda venatoria* were recorded only in the buildings and it predates cockroaches in the houses. Eventhough lots of previous work on spiders were concentrated on the taxonomy, web patterns, reproduction etc. (Pocock, 1900; Tikader & Bal, 1981; Tikader & Biswas, 1981), the biology of spiders including their web construction, food and feeding, physiology, reproduction and life history are yet to be known. A comprehensive account of any single spider species (which is a potential biocontrol) has not been available so far. So it is suggested that studies on the biology of individual spider species should be undertaken in future.

Table 1. List of spiders collected from Mannampandal area

Family / Species	Web type
Spiders collected from buildings	
Pholcidae	
Crossopriza lyoni (Blackwall)	Irregular mesh
Artema atlanta Walckenaer	Irregular mesh
Heteropodidae	
Heteropoda venatoria (Linn.)	—
Salticidae	
Plexippus sp.	—
Spider collected from trees	
Hersiliidae	
Hersilia savigyni Lucas	Scant
Spiders collected from cultivated lands	
Araneidae	
Argiope arcuata Simon	Orb
Gasteracantha geminata (Fabricius)	Orb
Neoscone sp.	Orb
Tetragnathidae	
Tetragnatha sp.	Orb

Acknowledgement

We are grateful to the staff members of Research Department Wildlife Biology and Zoology, A.V.C. College, for encouragement. We are also thankful to Dr. K. Vijayalakshmi, Central for knowledge system, Madras, for identifying the spiders.

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