International Journal of Researches In Biosciences, Agriculture & Technology | Feb. 2015 Special Issue- 3 | ISSN No. (Online) 2347-517X

Spider Diversity of Visvesvaraya National Institute of Technology Campus, Nagpur

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Abstract:

Spiders belong to class Arachnida which is one of the oldest habitants of this planet. Some of the Arachnidan are appropriately termed as 'The Living Fossils' as they have not changed their morphological look even today. All spiders are carnivores, predating on variety of insects. The current worldwide taxonomical tally of spiders is about 37,000 species accommodated under 108 families. In India, appropriately 1500 species are accommodated in 43 families. Vishvesaraya National Institute of Technology (VNIT) encompases a vast area of about 220 acres accommodating diverse life forms. Bless with ample vegetation the campus attract varied type of flora and fauna. The study was based on observation of spiders from January 2014 to December 2014. Spider diversity was measured by line transact method.

Keywords: Spiders, Arachnida.

Introduction:

Class Arachnida includes scorpions and spiders. Arachnids are one of the oldest habitants on this planet, 'Earth'. Million years of their existence have given them enough opportunities to acquire the most suitable habitats to lead unique and unparalleled life styles. Some of them are appropriately termed 'The Living Fossils' because they have not changed their morphological look even today. Spiders are widespread and diverse predators that are part of terrestrial Arthropod assemblages (Uetz, 1999). Spiders are fascinating creatures with a unique life style. All spiders are carnivores, predating on variety of insects. They are abundant and can be found almost anywhere from households to the crevices, in rocks and vegetation up to 22,000 ft. altitude. The current worldwide taxonomical tally of spiders is about 37,000 species accommodated under 108 families (Gavami et al., 2007). In India, approximately 1520 species are accommodated in 60 families (Sebastian and Peter, 2009), out of this about 252 are endemic to India (Wankhade et al., 2012). In this study emphasis was laid on to specify the diversity of spiders in VNIT, Nagpur.

Material and Methods:

Study area

Present study was conducted from 1st January 2014 to 31st December, 2014 Visvesvaraya National Institute of Technology (VNIT) is located in western Nagpur near Ambazari Lake, about 8 km from Nagpur Railway station and 8 km away from Dr. Babasaheb Ambedkar Airport, Nagpur. The campus of VNIT spread on 220 acres (89 hectors) and has green cover rich in natural flora and fauna.

Sampling Method

Line transects were used to search the spiders in different compartments. Transects were chosen in random with semi-quantitative sampling methods to record the spiders. Spiders were searched for maximum two hours (0900-1100 hrs) in each compartment, extending the search with different compartment sizes. The sampling methods include visual searching for the spiders as far distinct vision is possible. Ground search were done under leaf litter, fallen or dry wood. Sweep netting was done for the foliage dwelling spiders covering the herbs and shrubs. Beating trap was done with a wooden stick and an umbrella placed under the trees to catch the spiders which were unable to reach or seen hanging above. The caught spiders were placed separately on vials with 70% ethyl alcohol. The collection date, compartment name and habitat were recorded on each vial.

Identification

Spiders were identified up to the species level using the identification keys by (Tikadar, 1987; Biswas and Biswas 2004; Sebastian and Peter 2009).

Result and Discussion:

The spider fauna of India is represented by 1520 spider species belonging to 377 genera and 60 families (Sebastian and Peter 2009). Total eight species belonging to six families were reported in present study.

Table.1 -List of spiders observed in VNIT Campus

Family	Common name	Scientific name
Sparassidae	Spider	*Heteropoda venatoria*
Oxyopidae	Oxyopes Spider	*Oxyopes birmanicus*
Araneidae	Agriope Spider	*Agriope pulchella*
	Agriope Spider	*Argiope anasuja*
Miturgidae	Yellow Sac Spider	*Cheiracanthium punctorium*
Philodromidae	Running Crab Spider	*Philodromus vulgaris*
	Hippasa Spider	*Hippasa holmerae*
PholcidaeLong	Bodied Cellar Spider	*Pholcus phalangioides*

Heteropoda venatoria is 2.2 to 2.8 cm. long. *Heteropoda venatoria* is large brown spider with flattened body structure. *Oxypes birmanicus* is 7-9 mm. long with round prosoma with hexagonally arranged eyes. *Agrio pepulchella* and *Agriope anasuja* both are of same size. Opisthosoma of *A. anasuja* shows alternately arranged yellow and brown bands while in *A. pulchella* dark opisthosoma bears vertical yellow band. *Cerianthum* is 1 cm. long. Both male and female are yellowish to light brown. *Philodromus*is 1.5 cm long females are light yellow brown in colour while male may have dark brown black bodies that contrast with their light coloured legs. *Pholcus phalagioides* is long spider of 7 cm. length. These spiders have very long and thin legs and are light to medium brown in color.

The density of spider was high during the pre-monsoon season and gradually decreased during monsoon.

Heteropoda venatoria is terrestrial spider while other observed species of spiders were arboreal. *Agriope pulchella, Agriopeanasuja, Cerianthum, Philodromous, Pholcus phalangioides* spin web.

Spiders are maintaining ecological equilibrium by suppressing insect pest (Harazarika, and Chakrabarti, 1998). The study will also help to work for the conservation of the species and specify the hidden benefits in them.

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