



Diversity of Spiders from P.D.V.P College Campus Tasgaon

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INTRODUCTION

Spiders are air-breathing arthropods that have eight legs and chelicerae with fangs that inject venom. They are the largest order of arachnids and rank seventh in total species diversity among all other groups of organisms. Spiders are ancient animals with a history going back over 350 million years. They are abundant and widespread in almost all ecosystems and constitute one of the most important components of global biodiversity. Spiders have a very significant role to play in ecology by being exclusively predatory and thereby maintaining ecological equilibrium. The current global list of spider fauna is approximately 42,055 belonging to 3821 genera and 110 families (Platnick, 2011). The spider fauna of India is represented by 1520 spider species belonging to 377 genera and 60 families (Sebastian and Peter, 2009). There still exist major gaps in our knowledge of biodiversity of spiders in many areas within varied ecosystems of India.

All spiders are carnivorous and most eat small insects, but many will eat other spiders, sometimes even ones of their own species. Some larger species of tarantula will eat vertebrates on occasion. Instead of chewing, spiders use another technique to swallow prey. Their mouths are designed to ingest only liquid food, so they use venom to liquefy the tissue of their prey, which they can then swallow. Spiders live in a huge variety of habitats: in thick shrubbery, high up in trees, in pastures, beneath stones and fallen trees, in burrows beneath the soil, and even in rock and coral crevices on coastlines. Because of their increasing contact with humans, many spiders now live in the corners of buildings and other man-made structures.

Spiders are found almost everywhere in enormous numbers, the natural enemies of insects, keep hard of agricultural pest as well as destructive and disease-carrying insects, under positive control on account of their vast numbers and they destroy a far greater number of insects than do birds or other insectivores. All spiders have venom which is secreted by a poison gland and injected through a fang. However, this

venom is mainly used to kill the large number of insects and mites on which they feed daily. The venom of only three species from South Africa is potentially dangerous to man. Only the female is able to bite through the skin but in most cases a full dose of venom is not injected. The venom is of a neurotoxic nature and causes symptoms and localized pain. Spider venoms are being studied for possible uses in medicine and pest control. Only two types of spiders in Texas are medically significant. House spiders, sac spiders can produce a noticeable bite.

Spiders play an important role in stabilizing or regulating insect populations, spiders are an important food source for birds, lizards, wasps and other animals all spiders produce silk, a thin, strong protein strand extruded by the spider from six spinnerets most commonly found at the end of the abdomen. Many species use it to trap insects in webs, although there are also many species that hunt freely. Silk can be used to aid in climbing, form smooth walls for burrows, and build egg sacs, wrap prey, and temporarily hold sperm, among other applications. The most characteristic feature of the spider's life is the use of its silk, the spider has hit upon the device of turning its food into silk and using it as a net to catch more food. There are several glands to produce the silken thread. Spider silk is a biopolymer fiber. Out of 20 amino acids, only glycine and alanine serve as a primary constituent of silk. Spider silk used to make nets for the transportation of arrow points, tobacco and dried poison for the arrow points.

Spiders are an important but generally poorly studied group of arthropods that play a significant role in the regulation of insect pests and other invertebrate populations in most ecosystems. Despite their abundance, ecological importance and ubiquitous occurrences, spiders are seldom included among organisms surveyed for extensive studies and conservation (Cole, 1994). Long term and meaningful conservation requires the complete knowledge of the species in various ecosystems. In view of this it is imperative to undertake studies concerning the spider diversity of PDVP College campus, Tasgaon. Some recent workers on Indian spiders include

Majumdar And Tikader (1991), Reddy And Patel (1992), Biswas and Biswas (1992),

Biswas and Majumdar (1995), Biswas *Et Al.* (1996), Biswas and Majumdar (2000), Patel and Vyas (2001), Patel (2003), Biswas and Biswas (2003).

MATERIALS AND METHODS

The present study was conducted from August 2014 to December 2014 at different study sites at PDVP College Campus, Tasgaon.

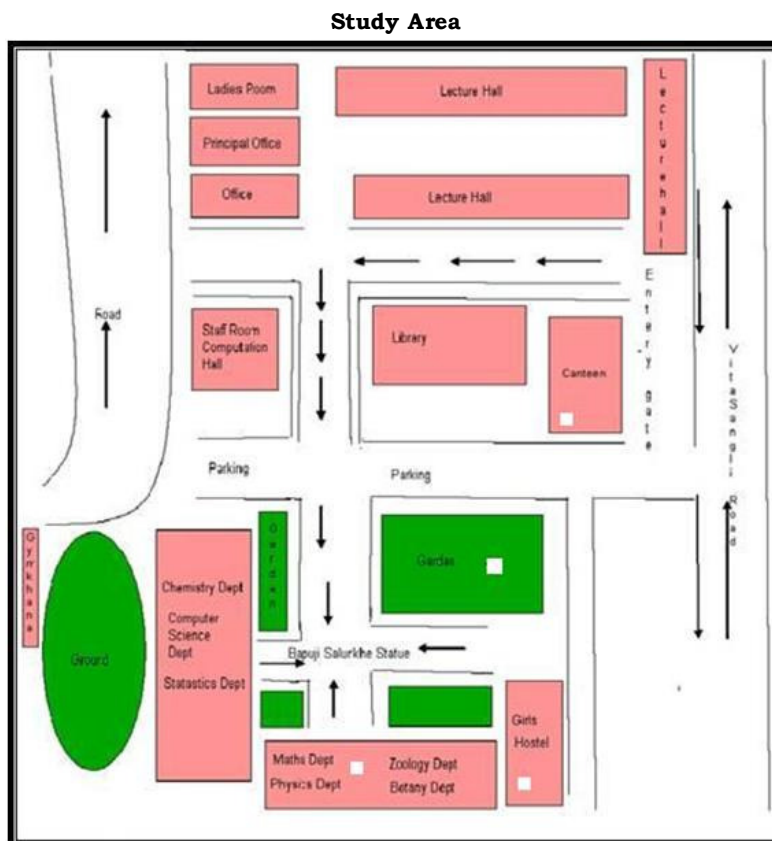


Fig- Map showing study area of PDVP College Campus, Tasgaon.

Sampling Methods

The present study was conducted from August 2014 to January 2015 at different study sites at PDVP College Campus, Tasgaon. Spiders were collected by adopting standard sampling techniques such as sweep netting, active searching and hand picking and umbrella collection. All surveys were conducted in the morning hours between 7:00 am to 10:00 am. Collected spiders were photographed in live condition identified and then released to their natural habitat. Few spiders were observed under microscope for identification and study of some morphological peculiarity.

Identification

Spiders were observed using stereo zoom microscopes for studying identification keys. All specimens were identified using the taxonomic keys for Indian spiders given by Tikader (1987). Reddy and Patel (1992), Biswas and Biswas

(2003) Majumdar (1995) and Sabbastian and Peter (2009).

Preservation:

Collected spiders were photographed in life and later preserved in 70% ethyl alcohol.

RESULTS AND DISCUSSION

Total 12 spiders (Table 1) were recorded during the 6 month survey at college campus, Tasgaon. This area is moderate in floral diversity. In our observation araneidae is the most represented family with 12 spiders. Present study was done to observe the diversity of spider in college campus.

Since the study was mainly based on visual searches and beating, other sampling methods such as pitfall trapping, fogging, sweeping would certainly increase the species list. Earlier no work has been carried out in P.D.V.P. College campus for spider diversity and this is the first report. During the present spider survey maximum number of genera is recorded from

November and December. However, this is not an end and final conclusion regarding species richness in College campus as number of areas and habitats are still to be explored.

Table :-Showing Diversity Of Spiders From P.D.V.P College Campus Tasgaon.

Sr.No	Common name of the spider
1	a)Pantropical Jumping Spider
2	b)Long Bodied Cellar Spidar
3	c) Jumping Spider
4	d)Home Spider
5	e)Hobo Spider
6	f) Friendly Tree Spider
7	h)Brown Recluse Spider
8	i)Wolf Spider
9	j)Widow Spider
10	k)Tree Trunk Spider
11	m) Three Banded Crab Spider
12	n) Small House Spider

Spiders are among the highest ranked predators in food chains and community structures are closely affected by disturbance and vegetation structures compared with species inhabiting undisturbed temperate areas. Lower spider abundance and species diversity are characteristics of areas subjected to high levels of disturbance, such as grazing, agricultural practices, forestry, and burning. Spiders are suggested to be good indicators of the effect of environmental impact on biodiversity.

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FIG:-Showing Diversity Of Spiders From P.D.V.P College Campus, Tasgaon.

a)Pantropical Jumping Spider b)Long Bodied Cellar Spider c) Jumping Spider d) Home Spider
 e)Hobo Spider f) Friendly Tree Spider g)Brown Recluse Spider h)Wolf Spider i)Widow Spider
 j)Tree Trunk Spider j)Tree Spider k) Three Banded Crab Spider l) Small House Spider