



## Diversity of Spiders fauna from Ambazari Lake, Nagpur of Vidarbha Region, India

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### ABSTRACT

The paper discloses the study of Spiders found at Ambazari Lake in Nagpur and at its adjoining garden, reserved forest and grassland fields with bushes and shrubs. The survey conducted, recorded 40 Spiders which comprise 7 Families and 14 Species. Although, the spiders of different families were noticed, the most dominant family observed was Araneidae with 4 species. The vegetation and the climate present at Ambazari Lake and at its adjoining area ascertain the availability of recorded species of spiders.

**Keywords:** - Spiders, Ambazari, Saticidae, Diversity.

### INTRODUCTION

Spiders being a special group of invertebrates exploit a wide variety of niches in virtually all biomes on earth and play a significant role in sustaining the ecosystem. They have been a diverse group of animals attaining seventh number of diversity. Spiders comprise a significant portion of terrestrial arthropod diversity. The spiders belong to order Aracnida, class Araneae, phylum Arthropoda. The spiders are worldwide distributed and have an imperative position in global ecosystem. Spiders find everywhere at every time and they are abundant in both natural as well as agriculture habitat (Turnbull, 1973; Nyfeller & Benz 1987). Spiders are web producing and eight legged. Spiders are worldwide distributed except Antarctica, sea and air. Spiders can be easily found in small areas. Spiders are of different sizes, colours with different habitat. The spiders inject venom in prey to kill or paralyze it. The Jurassic and Cretaceous periods provide a large number of fossil spiders, including many modern families. Although today there are 42,473 described spider species within the diverse phylum of arthropods, in evolutionary study of spider, the first true spider, thin waisted arachnids evolved from crab-like chelicerae ancestors (Platnick, 2011).

The study area Ambazari Lake at Nagpur city of Nagpur district in Vidharbha region is located at 21.12°N 79.04°E. It is near the Southwestern border of city. The spiders are the bio indicators, indicating the richness of biodiversity. As spiders are insectivorous, helps to keep the population of insect under control, therefore can be used as natural insecticide in agro ecosystem; so from the study area we recorded the fauna of spiders.

**MORPHOLOGY**

Classification -  
 Kingdom – Animalia  
 Phylum – Arthropoda  
 Subphylum – Chelicerata  
 Class – Araneae  
 Order -Archanida

Spiders are commonly named according to web pattern, behavior of spiders and resemblance with other animals.

**Table 1: Spiders family name & common name**

Sr.No	Family Name	Common Name
1	Araneidae	Orb web spider
2	Clubionidae	Sac / leaf rolling spider
3	Gnaphosidae	Ground runners
4	Lycosidae	Wolf spider
5	Oxyopidae	Lynx spider
6	Salticidae	Jumping spider
7	Uloboridae	Hackled web spider

**MATERIALS AND METHODS**

Spiders were collected, by insect nets, pitfall trap, visual searching, beating, sweeping, and stroking sticks were used, from vegetation, on ground, under stones/crevices, near lake etc. The specimens were preserved in 70% alcohol, labelled and identified according to Barrion and Litsinger (1995), Biswas and Biswas (1992), Davies and Zabka (1989), Gajbe (1987), Tikader (1962, 1970 ,1987) Plantnick (1989, 2004).

**Table 3: Spiders fauna from study area**

Family	Species
Aranedae	Argiope aemula - male Neoscona sp – male Neoscona sp - female Zygiella sp - female
Clubinoidae	Clubiona sp. -Female
Gnaposidae	Gnaphosa paurinsis – female Zelotes chandosiensis - female
Lycocidae	Lycosa sp. - Female Hippasa sp. - Male
Oxyopidae	Oxyopus chittrae - Male Oxyopus sp. - Female
Saticidae	Plexipus paykulii - Male Plexippus sp. - Male
Uloboridae	Uloborus sp. - Female

**RESULTS**

The study area, Ambazari Lake is situated at 5 km from Zero Mile Stone, the historical landmark in Nagpur city in Vidharbha region of Maharashtra, India. It was created under the Bhonsle Dynasty in 1870 to provide water source to city. The word ‘Ambazari’ means ‘Mango Village’. Once, the area was surrounded by the trees of mangoes during the creation of the lake. Adjoining to the Ambazari Lake there is reserve dense forest which comes under the supervision of forest department and a garden known as Ambazari Garden owns by Nagpur Municipal Corporation.

Spiders were collected from ground, tree trunks, vegetation, and grasslands under stones and near water body. Emphasis was given on collection of mature male and female spiders leaving immature to their habitat. Repetition of collection was also avoided. Over all 40 mature male and female spiders were collected, belonging to 7 families, and 14 species. It has been observed that abundance of spiders was high in vegetation.

**Table 2: Total species found in study region**

Sr.no	Family	No. of species
1	Araneidae	4
2	Clubionidae	1
3	Gnaphosidae	2
4	Lycosidae	2
5	Oxyopidae	2
6	Salticidae	2
7	Uloboridae	1

## DISCUSSION

A total 14 species belonging to 7 families were recorded from study area. Of the total 14 species, Araneidae was the predominant family of total spider abundance. The density of family Araneidae and salticidae was found significantly more than the rest of the families due to greater adaptability and resource availability; it can be concluded that the study area is rich biodiversity. The result shows that the Spiders are sensitive to small changes in environment especially vegetation, topography and climate change. These parameters show effect on spider diversity.

For maintaining the spider population, it is necessary to protect the spiders from human encroachment; it will help to maintain the production of spiders and it will regulate the insect population. This rich diversity of spiders indicates the species richness related to agro ecosystem.

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