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Diversity of Spider Fauna of Kharun River at Khutaghat Dam, District - Bilaspur, Chhattisgarh, India

Aman Kumar Toppo[1], K.R. Sahu[2] and Hemlata Nishad[3]

[1]Department of Zoology S.S.G.R. Govt. College, Sargaon, Dist.-Mungeli (C.G) India
[2]Head, Dept. of Zoology Govt. Pt. M. R. Saprey College, Pendra Road Dist.-Gaurela-Pendra-Marwahi (C.G.) India
[3] Department of Microbiology Dr. C.V Raman University, Kota, Dist.-Bilaspur (C.G.) India
amankumartoppo1003@gmail.com

Abstract - Within the Indian fauna, spiders are among the most varied families of organisms. In the class Arachnidae, spiders in the order Araneae are the largest (ranked 5–6). Between June 10 and July 10, 2022, researchers in the state of Chhattisgarh researched the diversity of spiders in hilly, non-crop, and river valley areas as well as in the forest near the Khutagat Dam on the Kharun River in Bilaspur District. 64 species were gathered from various areas of the Khutaghat Dam during this time frame. There were 45 species discovered, belonging to the following 09 Families, Aranidae, Lycosidae, Gnaphosidae, Saltisidae, Oxyopidae, Nephelidae, Agelenidae, Sparassidae, and Tetrangnathidae.

Key words - Spider, Diversity, Khutaghat Dam.

I. Introduction

Among all the invertebrate animals in the world, spiders represent one of the most numerous and fascinating groups of terrestrial predators. Spiders are Arthropods called Arachnids. Of all the arachnid groups, spiders are the largest, with over 50356 species spread throughout 132 families globally. 3.6 percent of the world's spider species are found in India, where there are 1686 species spread among 60 families and 438 genera.

Due to the presence of a sufficient number of diverse organisms, the study of biodiversity in valleys and hilly areas along riverbanks is regarded as excellent. The Khutahgat dam was built as part of a multi-use irrigation project. The dam was built on the Kharun River, which rises from Palma Hill on the side of Tahsil Ratanpur in the Bilaspur district of Chhattisgarh. The British government started work on the dam in 1923–24, but it wasn't finished until 1961. This dam covers an area of 43000 acres. This dam can hold 196 million cubic meters of water. There are numerous tiny

preserves surrounding this dam, home to a variety of flora and fauna. This area exhibits biological richness. Currently named as Sanjay Gandhi Dam, this reservoir has an extremely picturesque outlook. In this location, activity on spider collection and photography was conducted from June 10 to July 10, 2022. A total of 45 Spider species have been identified and classified into 9 families.

II. Material and Methods

Collection: The spiders had been collected from plantations, woodland areas, river valleys, and fields of crops. In order to obtain a clear image of the eye location, eye pattern, abdominal and cephalothorax shades, hair pattern, and spine pattern, among other details, photographs were also shot from various angles. Spiders living in trees were caught by insect trapping net. The spider was preserved in 70% alcohol under a specimen jar after a photo was taken from a different angle.

Identification: Identification was carried out using the morphometric characteristics of various body parts. All spider samples were identified using the Tikader (1987), Planknick (1989), Biswas and Biswas (1992), and Gajbe (2003) keys and catalog.

Table – 1 Diversity of spider species recorded across the Khutaghat dam (District - Bilaspur)

S. N.	Family	Species
1.	Araneidae (11 sp)	*Araneus mitificus* *Araneus nympha* *Agriope minuta* *Agriope pulchella* *Agriope catenulate* *Agriope aemula* *Araneas Mitificus* *Araneas nympha* *Cyclosa spirifera* *Cyclosa hexatuberculata* *Cytrophora citriocola*

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2.	Lycosidae (7 sp)	*Lycosa bistriata* *Lycosa mackenziei* *Hippasa agelenoides* *Hippasa hansae* *Pardosa jabalpurensis* *Pardosa mukundi* *Arctosa indicus*
3.	Gnaphosidae (7 sp)	*Callilepsis chakanensis* *Callilepsis lambai* *Drassodes himalayensis* *Drassodes oppenheimeri* *Drassodes sagarensis* *Gnophosa pauriensis* *Sergiolus singhi*
4.	Saltisidae (5 sp)	*Thalassius albocinetus* *Hyllus semicupreus* *Mehemeras bivittatus* *Plexippus paykulli* *Hasarius adansoni*
5.	Oxyopidae (5 sp)	*Oxyopes salticus* *Oxyopes birmanicus* *Peucetia lucasi* *Peucetia ashae* *Peucetia pawani*
6.	Nephelidae (4 sp)	*Nephila pilipes* *Nephila kuhli* *Nephila maculata* *Trichonephila clavipes*
7.	Agelenidae (3 sp)	*Agelenainda* *Agelena gautami* *Tegenaria comstocki*
8.	Sparassidae (2 sp)	*Olios millet* *Hetropoda venatoria*
9.	Tetragnathidae	*Leucage decorata*

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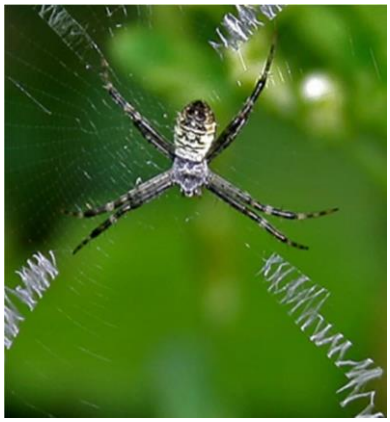
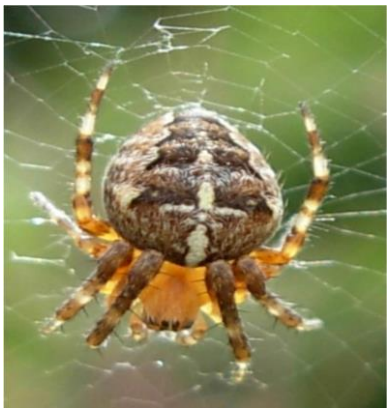
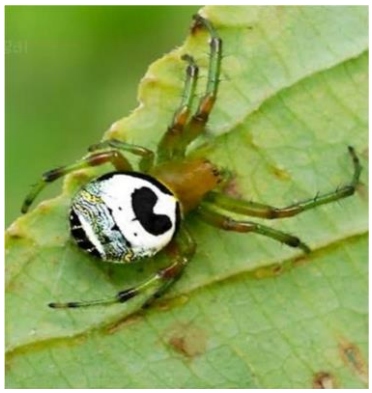
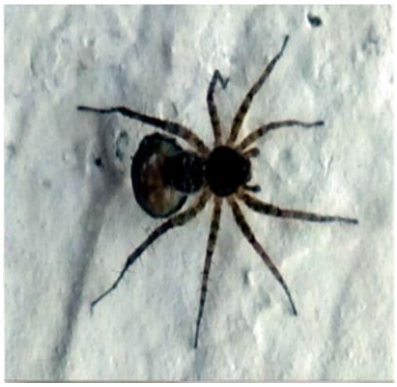
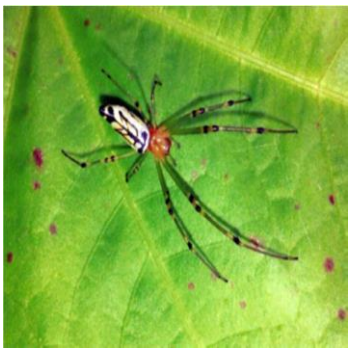
Table 2 - Some photograph collection of Spiders Around Khutaghat Dam (District- Bilaspur)

 ***Agriope catenulate*** ***Family - Araneidae***	 ***Araneas nympha*** ***Family – Araneidae***
 ***Araneas mitificus*** ***Family – Araneidae***	 ***Lycosa species*** ***Family – Lycocidae***
 ***Leucauge Decorata*** ***Family -Tetragnathidea***	 ***Thalassivs albocinetus*** ***Family – Salticidae***

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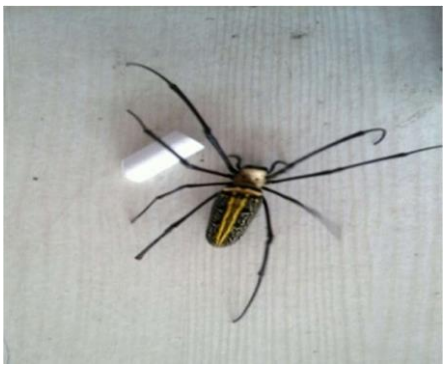
Agelenainda
Family- Agelenidea



Nephila Pilipes
Family – Nephelidae

Oliosmilleti
Family – Sparassidae

Argiope aemula
Family - Araneidae

Argiope aetherea
Family – Araneidae

III. Result

There are 1686 species of spiders in India (Checklist of Indian Spider, 2012). These species are divided into 438 genera and 114 families. There are 186 species of spiders in the state of Chhattisgarh, representing 69 genera and 24 families. June through July

was the heaviest month for spider species density. 64 specimens were gathered from the Khutaghat dam in Bilaspur District, Chhattisgarh, India, for the current study (Gajbe, 2003).

Maximum Diversity of spider species.

1. Aranidae (11 sp.)
2. Lycosidae (7 sp.)
3. Gnaphosidae (7 sp.)
4. Saltisidae (5 sp.)
5. Oxyopidae (5 sp.)
6. Nephelidae (4 sp.)
7. Agelenidae (3 sp.)
8. Sparassidae (2 sp.)
9. Tentragnathidae (1 sp.)

IV. Discussion

Spider diversity is abundant in the vicinity of Khudia Dam, which is located near the Maniyari River in the Mungeli district of Chhattisgarh. A good number of spiders and a notable diversity of spider guilds can be found in the Mungeli district. In this area, the study of spiders is not well established. This area lacks knowledge regarding the taxonomy and biology of spiders.

For further research on spiders in this ecosystem, the study provides a baseline. To confer, a thorough examination of their morphometrics, physiological behavior, and habitat is needed. Since this study was limited to one month, more research is required to fully understand the seasonal variations in the diversity and abundance of the spider fauna.

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