

<https://doi.org/10.48047/AFJBS.6.15.2024.9550-9560>



African Journal of Biological Sciences

Journal homepage: <http://www.afjbs.com>



Research Paper

Open Access

A STUDY OF BIODIVERSITY OF SPIDER SPECIES (ARACHNIDA : ARANAE : ARANEOMORPHAE) IN KOKASARA REGION, KALAHANDI, ODISHA, INDIA

AVINASH R. NICHAT¹, HITESH KUMAR WARTE², S. A. SHAFFI³,
JASHAVANT NAYAK⁴,

¹Department of Zoology, M.V.V. Govt. P.G. College, Bhakhara, Dist. –
Dhamtari, Chhattisgarh, INDIA EMAIL— anichat@ymail.com

²Department of Zoology, Pt. ShyamShankar Mishra Govt. College, Deobhog, Gariyaband
Chhattisgarh, INDIA

³Ex. Dean of Instruction, Regional Institute of Education (NCERT) –Bhopal, INDIA

⁴Department of Zoology, Pt. ShyamShankar Mishra Govt. College, Deobhog, Gariyaband
Chhattisgarh, INDIA email – jashvantnayak415@gmail.com (Corresponding author)

Volume 6, Issue 15, Sep 2024

Received: 15 July 2024

Accepted: 25 Aug 2024

Published: 05 Sep 2024

doi: [10.48047/AFJBS.6.15.2024.9550-9560](https://doi.org/10.48047/AFJBS.6.15.2024.9550-9560)

ABSTRACT : The study were describe about the spider diversity and their distribution in Kokasara region of Dist-Kalahandi, Odisha, India. The present works aims to explore and provides the specific knowledge about the Spider species diversity in the region and their identification characters. The study explored the presence of 67 species represent 53 genera under 11 families during the study period was in the month of July – November 2023 almost 05 months. Spider species diversity as like Aranidae (20 species) and Salticidae(20 species) are predominant families among all these 11 families. Spider diversity is very high in the region due to the favourable condition and agricultural area.

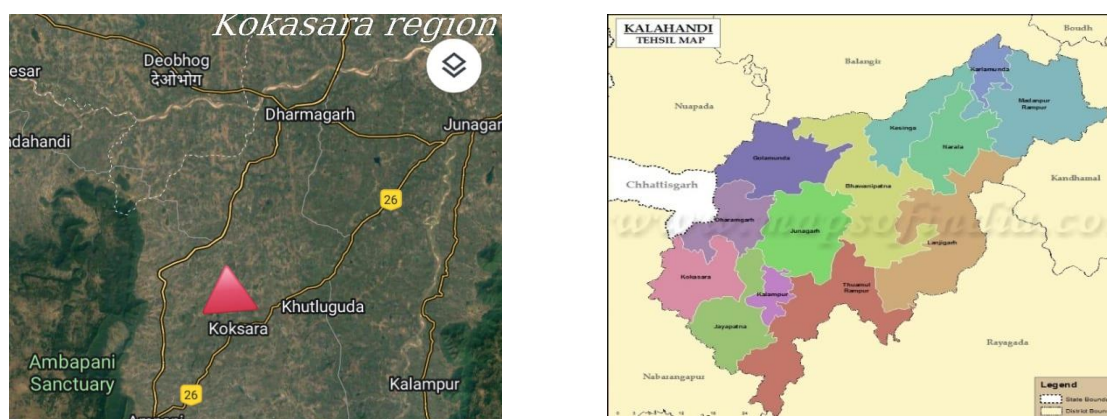
Key words – Spider, Diversity, Ecosystem, Species, Aranidae, Salticidae, Kokasara, Kalahandi, Odisha

INTRODUCTION

Spiders are small, predatory, terrestrial, cosmopolitan creatures that represent the Order Araneae of class Arachnida under the phylum Arthropoda.(Biswas & Biswas 2004) Their body are divided into two segments Cephalothorax and Abdomen. The Cephalothorax is a fused form of head and thorax. The head contains 8 compound eyes, a mouth, chelicerae and

padipalp. The abdomen is large compared to head and contains four pairs of jointed leg. Female spiders are exclusively larger than males.

There are 48,143 species under 4,131 Genera and 117 families described from the World. About 1,909 species Belonging to 488 genera and 64 different families have been reported from India of which, About 115 species in 33 genera and eight families are of mygalomorph spiders and the rest of the species are of araneomorph spiders (Chaudhary et al. (2019)). The first spider reported from Odisha was a mygalomorph spider, *diplothelewalshi* added 51 species of spiders to it, which included both araneomorphs and mygalomorphs (Gajbe (1979)). Subsequent Additions to the list of spiders were by Biswas (1987), Tikader & Malhotra (1980), Tikader (1982), Majumder & Tikader (1991), Sharma, et al. (2010), Siliwal & Molur (2008), Siliwal et al. (2009a,b, 2010), Nichat et al. (2024), Gupta et al. (2013, 2015), and Mohapatra, et al. (2014), Adding almost 100 species to Gravely's (1921, 1931) Contribution. Chaudhary (2019), Thripathi et al (2023) and Keshwani et al (2012) identified 138 species of 95 genera under 33 families. So researcher contributes and identify continuously new spider species and diversity. At present total 265 species of spider under 162 genera belong



to 42 Families are identified in Odisha State.

The present work intends to study the diversity of spider species, during in the month of July to November and information to the database of spider species on the Kokasara region of Dist-Kalahandi, Odisha, India.

figure 1:- Map of Kokasara region and Kalahandi district, Odisha, India.

MATERIALS AND METHODS

Sampling area : Majhiguda village is sampling area that is part of Kokasara block, Dist-Kalahandi, Odisha. It situated Latitude 19.84875/Longitude :83.0371 The distance of 72 km from district head quarters Bhawanipatna.

Sample from **tree** (Braches, Bark, Leaves and flowers), **Shrubs** (small annual and perineal plants) , **Grassland**(Meadows, Paddy field).

Sampling methods:- The sample is collected by methods like beating vegetation, by collecting green and dry leaves, but maximum species are captured for photography by visual search methods. All specimens are photographed by INFINIX SMART HD camera version 10 and GPS MAP camera version 1.4.22. (Tikader (1982)

Preservation :- Some specimens are preserved at 60%, 70% Alcohol for the latter identification and study morphological variations. (Siliwal & Molur (2008),

Identification :- Identification of spiders on the basis of the taxonomic keys ,morphological characters and common behaviour of Indian spiders is explained by Tikader (1982,1987), Recently published literature (2012 to 2023), Indian Biodiversity website and INATURAL-IST MOBILE APP.

OBSERVATION

Table 01 :- List of Spiders species and observed site during the study period :-

S.N.	Family	Species	Tree	Shrub	Grassland
1	Aranidae	<i>Araneusmitificus</i> (Simon,1886)	+	+	—
2		<i>Argiopeaemula</i> (Walckeneare, 1841)	+	+	—
3		<i>Argiopeanasuja</i> (Thorell, 1887)	+	+	—
4		<i>Argiopepulchella</i> (Thorell, 1881)	+	+	—
5		<i>Cyclosa bifida</i> (Doleschall , 1859)	+	+	—
6		<i>Cyclosaconfra</i> (Thorell, 1892)	+	+	—
7		<i>Cyclosahexatuberculata</i> (Tikader, 1982)	+	+	—
8		<i>Cyrtophoracitrosa</i> (Stoliczka, 1869)	+	+	—
9		<i>Cyrtophoracitricola</i> (Forskal, 1775)	+	+	—
10		<i>Eriovixiaexcelsa</i> (Simon, 1889)	+	+	—
11		<i>Eriovixialaglaizei</i> (Simon, 1877)	+	+	—
12		<i>Gasteracanthageminata</i> (Fabricius, 1798)	+	—	—
13		<i>Geaspinipes</i> C.L. Koch, 1843	—	—	+
14		<i>Hereniamultipunctata</i> (Doleschall 1859)	+	—	—
15		<i>Larinioidescornatus</i> (Clerck, 1757)	+		
16		<i>Neoscona mukerjei</i> (Tikader, 1980)	+	+	—
17		<i>Neoscona vigilans</i> (Blackwall, 1865)	+	—	—
18		<i>Neoscona thesi</i> (Walckeneare,1841)	+	+	—
19		<i>Poltysnagpurensis</i> Tikader, 1982	+	—	—
20		<i>Thelacanthabrevispina</i> (Doleschall, 1857)	+	—	—
21	Hersiliidae	<i>Hersiliasavignyi</i> (Lucas,1836)	+	—	—
22	Lycosidae	<i>Hippasagreenalliae</i> (Blackwall, 1867)	—	—	+
23		<i>Lycosabistriata</i> (Gravely,1924)	—	—	+

24		<i>Pardosapseudoannulata</i> (Bosen-berge&Strand,1906)	—	—	+
25		<i>Wadicosaquadrifera</i> (Gravely,1924)	—	—	+
26	Oxyopidae	<i>Oxyopes javanus</i> (Theroll,1887)	—	+	+
27		<i>Oxyopesmacilentus</i> (Koch,1878)	—	+	+
28		<i>Peucetiaviridona</i> (Stoliczka,1869)	—	+	+
29	Pholcidae	<i>Artema atlanta</i> (Walckeneer,1837)	—	—	—
30		<i>Crossoprizalyoni</i> (Blackwall,1867)	—	—	—
31		<i>Pholcusphalangioides</i> (Fuesslin,1757)	—	—	—
32	Salticidae	<i>Bianorangulosus</i> (Karsch, 1879)	+	+	+
33		<i>Carrhotussannio</i> (Thorell, 1877)	—	+	+
34		<i>Carrhotusviduus</i> (Koch,1846)	—	+	+
35		<i>Chrysillavolupe</i> (Karsch,1879)	+	+	+
36		<i>Cyrbaocellata</i> (Kroneberg, 1875)	+	—	—
37		<i>Harmochirusbrachiatus</i> (Thorell, 1877)	—	—	+
38		<i>Hasariusadansoni</i> (Audouin,1826)	—	+	+
39		<i>Hyllus semicupreus</i> (Simon,1885)	+	+	+
40		<i>Menemerusbivittatus</i> (Dufour,1831)	+	+	—
41		<i>Menemerusfulvus</i> (C L Koch,1878)	—	+	—
42		<i>Myrmoplataplataleoides</i> (O. Pickard-Cambridge,1869)	+	+	+
43		<i>Myrmarachnemelanocephala</i> (Mac-Leay, 1839)	+	+	—
44		<i>Phintellavittata</i> (Koch,1846)	+	+	—
45		<i>Plexippuspaykulli</i> (Audouin,1826)	+	+	+
46		<i>PlexippusPetersi</i> (Karsch,1878)	—	+	+
47		<i>Portia fimbriata</i> (Doleschall, 1859)	+	—	—
48		<i>Rhenefflavicomans</i> (Simon,1902)	+	—	—
49		<i>Siler semiglaucus</i> (Simon, 1901)	+	+	+
50		<i>Telamoniadimidiata</i> (Simon ,1899)	+	+	—
51		<i>Thyeneimperialis</i> (Rossi,(1846)	+	+	—
52	Scytodidae	<i>Scytodes lugubris</i> (Thorell,1887)	—	—	+
53	Sparassidae	<i>Heteropodavenatoria</i> (Linnaeus,1767)	—	—	+
54		<i>Oliosmilleti</i> (Pocock,1901)	+	+	—
55	Tetragnathidae	<i>Guizygielamelanocrania</i> (Thorell,1887)	+	—	—
56		<i>Leucauge decorata</i> (Blackwall,1864)	—	—	+
57		<i>Tetragnathaextensa</i> (Linnaeus,1758)	—	+	+
58		<i>Tetragnathamandibulata</i> (Walckeneer,1841)	—	+	—
59	Theridiidae	<i>Argyrodesargentatus</i> O.P.- Cambridge, 1880	+	+	—
60		<i>Meotipamultuma</i> (Murthappa et al.,2017)	—	+	—

61		<i>Nesticodesrufipes</i> (Archer,1950)	—	—	+
62		<i>Nihonhimeamundula</i> (Koch 1872)	—	+	+
63	Thomisidae	<i>Amyciaeforticeps</i> (O. Pickard, Cambridge, 1873)	+	—	—
64		<i>Indoxysticusminutus</i> (Tikader,1960)	+	+	—
65		<i>Runcinia insecta</i> (Koch, 1875)	—	—	+
66		<i>Thomisus lobosus</i> (Tikader,1965)	+	+	—
67		<i>Thomisus pugilism</i> (Stoliczka,1869)	+	+	—

Table 02 :- Different family represents different number of genera and species.

S.N	Family	Genera	Species
1	Aranidae	12	20
2	Hersilidae	01	01
3	Lycosidae	04	04
4	Oxyopidae	02	03
5	Pholcidae	03	03
6	Salticidae	17	20
7	Scytodidae	01	01
8	Sparassidae	02	02
9	Tetragnathidae	03	04
10	Theridiidae	04	04
11	Thomisidae	04	05
	Total	53	67

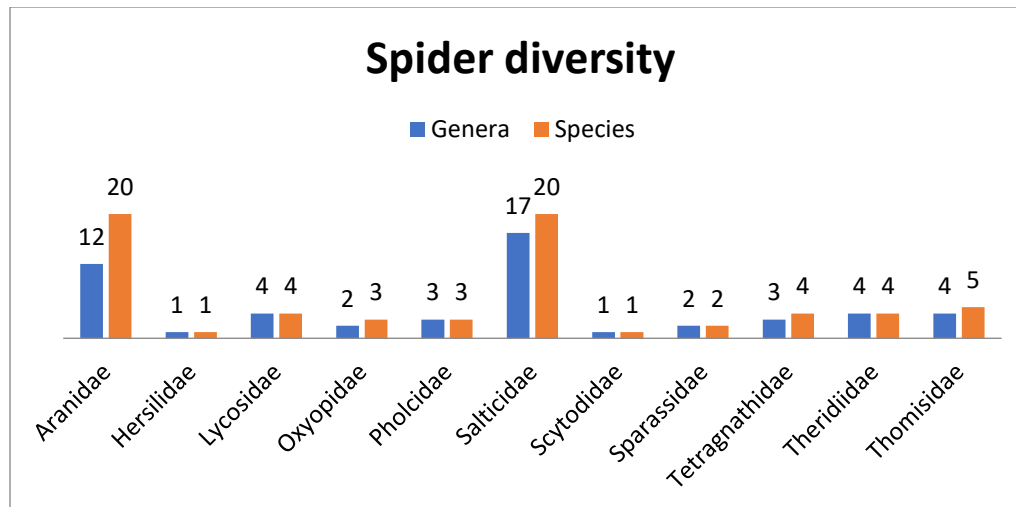


Figure 02:- Different family represents different number of genera and species.

RESULT AND DISCUSSION

The present study on the diversity of spider fauna in Kokasara region of Kalahandidistrict, Odisha, India was done during July 2023 – November 2023. There are 67 species of spider belonging to 53 Genera under the 11 families. Among all these 11 families, the predominant family is Aranidae (20 species), Salticidae (20 species), Thomisidae (05 species), Theridiidae and Lycosidae (4-4 species).



Figure 03:- View of different sampling area of Kokasara region and Kalahandi district, Odisha, India.



Figure 04:- A. *Argiopeaemula* | B. *Argiopepulchella* | C. *Eriovixialaglaizei* | D. *Myrmerachnemelanocephala* | E. *Rhene flavicomans* | F. *Carrhotusviduus* | G. *Cyrbaozellata* | H. *Harmochirusbrachiatatus* | I. *Hyllussemicupreus* | J. *Runciniainsecta* | K. *Chrysillia volupe* | L. *Hereniamultipunctata*.

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