

SPIDER DIVERSITY INSAWANTWADI TEHSIL, DISTRICT SINDHUDURG (MS).

Arati Bharmal & G.B.Raje

P.G Department of Zoology

D.B.J. College, Chiplun, Dist. Ratnagiri (MS)- 415605

Corresponding Author: aratibharmal7825@gmail.com

Abstract:

A study on spider diversity in Sawantwadi and adjoining areas in Sindhurg district was conducted at selective locations from October 2021 to September 2022. The study was focused on the agricultural area, grassland area and riparian habitats in Sawantwadi tehsil. A total 45 species belonging to 33 genera and 14 families were recorded. The study showed that the family Araneidae was dominated followed by Saltisidae.

Keywords: *Diversity, Sawantwadi, Spider, Fauna, Habitats.*

Introduction:

Spiders are the mega diverse group of arthropods come under the class Arachnida. They are the most diverse invertebrates with over 49,356 current described species with 4,213 genera and 129 families (World Spider Catalogue, version 22.0 of 2021). Keswani *et al.*, [1] reported 1,685 spider species belonging to 438 genera and 60 families in India. Spiders found at varied locations and their distribution is ubiquitous except for a few, such as Arctic and Antarctica. Order Araneae ranks 7th in the total spider species diversity among all other groups of organisms [2]. The body of spider divided into two parts; cephalothorax and abdomen where cephalothorax have 4 pairs of segmented legs and on other side abdomen bears appendages that have been modified into spinnerets, which is used for silk production. They considered as a biological control agents as they help in maintaining ecological balance and also a good indicator of environment [2]. Spiders are indirectly benefited to humans by consuming agricultural pests. Besides that being one of the most diverse groups of organisms, spiders have been largely ignored species. They have great importance in our ecosystems and most of the time we don't even notice. Siliwal *et al.* [3] published an updated checklist of Indian spiders after the checklist of Tikader [4]. The first native araneologist who contributed important position in Indian spider literature [5], after him Tikader [4] is one who studied spiders extensively.

By considering ecological importance of spiders and their role in controlling pest species in Sindhurg district this study will be helpful in evaluating present spider diversity status and need of their conservation from the view point of agriculture and health.

Material and Methods:

Study Region

Sawantwadi Taluka comes under Sindhudurg district in Maharashtra State of India. It is located at 16° N 73.75° E to Sindhudurg. Average elevation from sea level is of 22 meters which is approximately 72ft. It has a tropical climate with average temperature ranging from 27°C to 37°C. Humidity is high from May to July. The region is having high rainfall because of Arabian Sea, receives about 90% of its total annual rainfall within a 5 to 6 months from May to October. The region holds a dense forest system because of that spider varies from species to species.

Methods:

The few important collecting techniques used to capture spiders at selected locations were visual search, hand collection, ground hand collecting techniques, aerial hand collecting method involved the collection of spiders from knee level to arm level, litter sampling, sweep netting, and vegetation beating [2]. Collected spiders were photographed using a skyvik macro lenses and Samsung Galaxy A30 mobile phone. The specimens were preserved in 70% alcohol and in live condition identified [2] and then released them safely to their natural habitat.

Results and Discussion:

Spider diversity was focused mostly on dam area, grassland area and riparian area in Sawantwadi and adjoining areas was indicated in Table 1. A total 45 species belonging to 33 genera and 14 families were recorded. 45 species were reported from families like Araneidae (12 sp.), Sparassidae (02 sp.), Cheiracanthiidae (01 sp.) and showed in Plate A. Lycosidae (03 sp.), Oxyopidae (03 sp.), Pholcidae (01 sp.), Salticidae (10 sp.) showed in Plate B. Scytodidae (01 sp.), Tetragnathidae (06 sp.), Theridiidae (02 sp.), Uloboridae (02 sp.), Genaphosidae (01 sp.), Linyphiidae (01 sp.) showed in Plate C. It indicated that Araneidae was dominated during the study region followed by Salticidae.

Studies on spiders can be traced back from the published work by Blackwall [6], Stoliczka [7], Thorell [8], Cambridge [9], Simon [10], Pocock [11]. Subrahmanyam [12] is one who extensively studied Indian spider especially South Indian spiders.

Diversity of spiders is directly proportional to amount of vegetation, seasonal variations, water bodies and environmental parameters as they were very sensitive to changes in the climate and habitat arrangements. This study was intended to provide a checklist of spiders from Sawantwadi and adjoining areas. Spider diversity near Dam, Grassland area and Riparian area are incredibly sustainable; because of good climate, good water quality etc. Agricultural extension, habitat loss, degradation, and infrastructural projects have resulted in loss of spider diversity. Due to deforestation and settlements there is more deprivation seen in natural habitat of spider [13].

Conclusion:

The present attempt was to enlist spiders from Sawantwadi and adjoining areas. This research provided the basic information on spider fauna in the study region. Rich diversity of Araneidae indicated that the environmental conditions, food sources and seasonal variations are suitable to them. Spiders are very sensitive to changes in the habitat arrangements and also have largely been ignored by the conservationists. Therefore, it is very essential to protect and conserve this ecosystem to multiply these macro-organisms.

Table 1: Spider species recorded in Sawantwadi Tehsil of Sindhudurg district from October 2021 to September 2022.

Sr. No.	Family	Scientific Name	Common Name
01	Araneidae	<i>Argiopeaemula</i>	Oval cross spider
03		<i>Argiopepulchella</i>	Garden cross spider
04		<i>Gasteracanthakuhli</i>	Spiny orb-weaver spider
05		<i>Neosconapunctigera</i>	Monkey orb-weaver spider
06		<i>Neosconamukarjei</i>	Common garden spider
07		<i>Nephilakuhlii</i>	Black wood spider
08		<i>Nephilapilipes</i>	Giant golden orb-weaver spider
09		<i>Cyclosa sp.</i>	Trashlineorbweaver
10		<i>Eriovixia sp.</i>	Unknown
11		<i>Eriovixialaglaizei</i>	Unknown
12		<i>Anepsionmaritatum</i>	Unknown
13		Sparassidae	<i>Heteropodavenatoria</i>
14	<i>Spariolenustigris</i> <i>Simon, 1880.</i>		Asian huntsman spider
15	Cheiracanthiidae	<i>Cheiracanthiumdanieli</i>	Yellow sac spider
16	Lycosidae	<i>Hippasaagelenoides</i>	Common funnel web spider
17		<i>Hippasagreenalliae</i>	Grass funnel web spider
18		<i>Paradosapseudoannulata</i>	Pond wolf spider
19	Oxyopidae	<i>Oxyopesshweta</i>	White lynx spider
20		<i>OxyopesBirmanicus</i>	Crossed lynx spider
21		<i>Oxyopesjavanus</i>	Striped lynx spider
22	Pholcidae	<i>Crossoprizalyoni</i>	Tailed cellar spider
23	Salticidae	<i>Asemoneatenuipes</i>	Tailed jumper
24		<i>Harmochirusbrachiatus</i>	Armed jumper
25		<i>Phintellavittata</i>	Banded phintella
26		<i>Plexippuspaykulli</i>	Common zebra jumper
27		<i>Plexippuspetersi</i>	Small zebra jumper.

28		<i>Telamonia dimidiata</i>	Two-striped jumper
29		<i>Myrmarachneplataleoides</i>	Red ant-mimic
30		<i>Myrmarachneorientales</i>	Brown ant- mimic
31		<i>Epocillaaurantiaca</i>	Unknown
32		<i>Hasariusadansoni</i>	Adanson's house jumper
33	Scytodidae	<i>Scytodesfusca</i>	Black spitting spider
34	Tetragnathidae	<i>Leucaugefastigata</i>	Humped silver spider
35		<i>Leucauge decorate</i>	Pond leucauge spider
36		<i>Tetragnathamaxilliosa</i>	Brown tetragnathid spider.
37		<i>Tyloridastriata</i>	Striated tylorida spider
38		<i>Tetragnathamandibulata</i>	Dark tetragnathid spider
39		<i>Leucaugevenusta</i>	Orchard spider
40	Theridiidae	<i>Nesticodesrufipes</i>	Red house spider
41		<i>Argyrodesargentatus</i>	Quick- silver spider
42	Uloboridae	<i>Uloborusplumipes</i>	Feather-legged lace weaver
43		<i>Zosis geniculate</i>	Grey house spider
44	Gnaphosidae	<i>Scotophaeusblackwalli</i>	Mouse spider
45	Linyphiidae	<i>Nerienesundaica</i>	Black dwarf spider

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Plate A

Family: Araneidae



Gaster acanthakuhli

Argio pepulchella

Neoscona mukerjei

Cyclosa sp

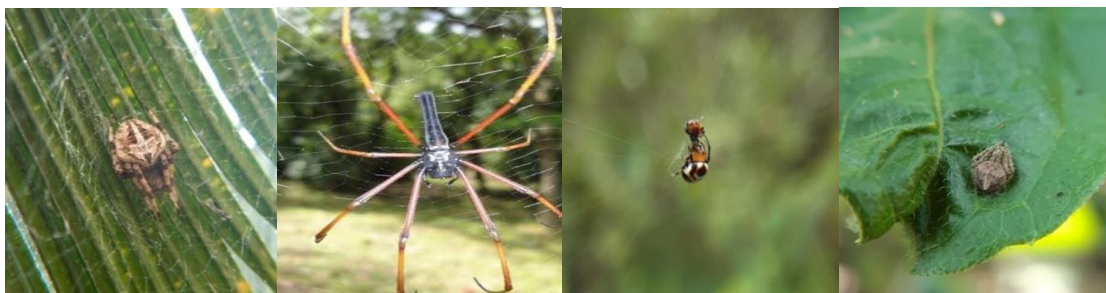


Eriovixia sp.

Neoscona punctigera

Argio peaemula

Nephila pilipes



Araneus sp.

Nephila kuhlii

Anepsion maritatum

Eriovixia laglaizel

Family: Sparassidae

Family: Cheiracanthiidae



Spariol enustigris

Heteropoda venatoria



Cheiracanthium danieli

Plate B

Family: Lycosidae



Hippasa greenalliae *Hippasa sp.* *Hippasa agelenoides* *Lycosidae sp.*

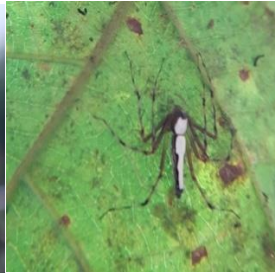
Family :Oxyopidae



Oxyopibir manicus



Oxyopes javanus



Oxyopes shweta



Crossopriz alyoni

Family: Pholcidae

Family: Salticidae



Asemone atenuipes



Myrmarachne plataleoides



Myrmara chneorientales



Phintella vittata



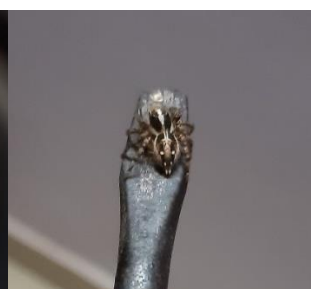
Telamonia dimidiata



Harmochirus brachiatus



Epocilla aurantiaca



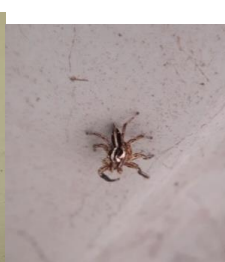
Plexip puspaykulli



Telamonia sp.



Hasarius adansoni



Plexippus sp.

Plate C

Family :Tetragnathidae



Leucauge decorate

Leucauge fastigata

Tylorida ventralis



Tylorida striata

Tetragnatham axillosa

Tetragnatham andibulata

Family: Theridiidae

Family: Scytodidae



Argyrodes argentatus

Nestico desrufipes

Scyto desfusca

Family :Uloboridae

Family : Gnaphosidae Family : Linyphiidae



Uloborus plumipes

Zosis geniculate

Scotophaeus blackwalli

Neriene sundaica