ARANEIDAE (ORB WEAVERS) FROM SALBARDI FOREST DIST. AMRAVATI, (MS), INDIA.

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ABSTRACT
Salbardi Forest, District Amravati, (MS) was explored to study diversity and abundance orb viewer spiders in their natural habitat. Salbardi Forest, a part of Satpura ranges, is dry deciduous with great diversity of flora and fauna. Orb weaver, family Araneidae, spiders dominated amongst other spiders and represented 31 species from 08 genera. Genus Araneus represented 5 species, Argiope 2 species, Chorizopes 4 species, Cyrtophora 3 species, Cyclosa 4 species, Neoscona 12 species, Telacantha and Zygiella 1 species each. Abundance of genus Neoscona was dominantly and abundantly observed in surveyed area.
Keywords: Spiders, Arneidae, Salbardi Forest.

Introduction:

Spiders are cosmopolitan Arthropods, found in almost all environmental conditions. The current world list of spiders includes 45,776 species under 3974 genera distributed over 114 families (WSC, 2016). In India they are represented by 1686 species belonging to 438 genera of 61 families (WSC, 2015; Keswani *et al*., 2012). Aranidae family is cosmopolitan and is the third biggest family amongst spiders, world comprising more than 3122 species in 172 genera worldwide. (WSC 2017). 28 genera and 163 species are recorded from India. Araneid webs are constructed in a stereotyped fashion. A framework of nonsticky silk is built up before the spider adds a final spiral of silk covered in sticky droplets. The web model remains useful for identification of species. Their status as an icon of all spiders is reflected in the name Araneidae is based on the type genus Araneus Clerck, 1757, which is thus the (basionym) original name on which a new name is based on both the family (Araneidae) and the order (Araneae). Orb-webs are also produced by members of other spider families. The long-jawed orb weavers (Tetragnathidae) were formerly included in the Araneidae; the cribellate or hackled orb-weavers (Uloboridae) also construct the orb webs.

Many workers prefer to use the name of the family as Argiopidae but according to the law of priority the family name Araneidae is retained. Almost all of species spin snares in the form of an orb, while some construct a retreat at a distance from the snare and others remain at the centre of the orb-web in upside down position and wait quietly for their prey. Spiders play a significant predatory role in nature. Insects are the largest part of the spider diet, but they also feed on other arthropods, such as sow bugs, millipedes and other spiders.

Family Araneidae was studied in India mainly by Stoliczka (1869), Simon (1884, 1889, 1892), Thorell (1895) and Pocock (1900) who were the pioneer workers on this group of spiders. They described many species from India, Burma and Sri Lanka. Afterwards Gravely (1922) recorded some species of Araneid spiders. Salbardi forest is having a rich biodiversity therefore an attempt was made to study abundance and richness of Araneids from this area.

Material and Methods:

Study Area:

Present study was carried out to explore the diversity and abundance of spiders from Salbardi Forest (The Latitude and Longitude of salbardi is 21.4183 and 78.0113 respectively). Salbardi is about 8 km. (5 miles) North of Morshi, District Amravati, on the border lying partly in the Betul District of Madhya Pradesh

on Madu River. Salbardi is named from its abundance of *Sal* trees and the stony character of its soil.

Methods:

The spiders were collected and preserved according to Tikader (1963). Immature spiders were left to its habitat; repetition of collection was avoided. Spiders were collected in the dry containers, photographed and then preserve in 70% alcohol.

Active Visual Searching and Hand Picking:

Spiders were actively searched under rocks, wood, grounds debris, and loose dead barks of trees and on the ground surface. As the spiders from family Araneidae built orb webs, it make easy to observe the webs and then spiders.

Results & Discussion:-

Present study was carried out consecutively for two years to investigate the spiders fauna (Family Araneidae) from Salbardi Forest, Dist. Amravati. Total 31 species were recorded from 8 genera. Females were found abundantly as compared to males, only 6 male species were observed amongst 31 species.

1. Genus *Araneus* Clerck, 1757:

Five species were recorded from this genus, most of them were observed on plants on webs. Spiders are colourful and mimic with the environment. In case of genus Araneus carapace is somewhat rounded with no horny outgrowths; in female thoracic groove transverse but in male it is with lateral prolongations Eye position forming a trapezium, not much longer but wide enough and median eye is asymmetrical in size while lateral is close and situated on main tubercles. Males having hook on coxa I and groove on femur II, similarly on lateral side of tibia II spines are present.

2. Genus *Argiope* Audouin, 1826:

Two species were recorded from this genus, commonly known as signature spiders. Females were abundantly observed resting at the centre of web during September and October. Carapace is extremely flat, covered with thick layer of white pubescence. Visual region produces trapezium, which is longer and wide as well posterior row of eyes are strongly procurved, anterior lateral side eyes are comparatively smaller than posterior laterals.

3. Genus *Chorizopes* O.P. Cambridge, 1870:

Four species were collected during survey. Small sized spiders mostly mimicking with the environment. Carapace anterior and broader with highly convex and roundish cephalic region, thoracic region downward sharply at the back and lowers down visual region produces trapezium which is slightly wider behind than front. Labium triangular in shape with short maxillae and converge towards insight broadly.

4. Cyrtophora Simon:

Three species were recorded from this genus. They do not build orb webs but build tent-like, highly complex non-sticky web. These spiders were often observed in colonies. Carapace of the spiders is nearly flat with long cephalic region. Ocular quad is slightly longer than wide, lateral eyes equal and slightly apart from each other. Abdomen is very high anteriorly and provided with paired tubercles.

5. Genus *Cyclosa*, Megne, 1866:

This genus was represented by four species. Though it views orb web but at centre it is having some peculiar pattern thickly viewed where females mostly observed for pray capture. Cephalic region is anterior with narrow Carapace cephalic region is distinctly separated from thoracic region by U Shaped groove which is oblique in manner. Visual region is trapezium like and much narrower from behind than in front; anterior median eye is larger than posterior both rows of eyes are recurved.

6. Genus *Neoscona*, Simon, 1864:

This genus dominated all other Araneides, representing 12 species. Most of the Neosconas start constructing their webs in the evening and distract it in the morning, remain hide during day time. In female presence of longitudinal thoracic groove separates *Neoscona* from other members of genus *Araneus*. Epigyne is simple with tongue like scape and fused completely to the base with two or three pairs of lateral lobes, epigynal notch presence below to the scape.

7. Telacantha:

This genus is represented with only one described species. Prominently white coloured pubescences on dark coloured abdomen make the spider attractive. Carapace of this genus is with cephalic region much elevated at the middle and sloping interiorly and posteriorly. Ocular quad wider behind than in front, median eyes usually equal in size. Abdomen large, sub-quadrate, transversely oblong or narrowed laterally, integument horny, impressed with

large sigilla, provided with an anterior, a median and posterior spines on abdomen.

8. Genus *Zygeilla* F.O.P. Cambridge, 1902:

Single species was found during survey. Body is covered with white and gray pubescence appeared leaf-like mark on abdomen. Carapace of this genus is with cephalic region usually darker in colour than thoracic region and with very few hairs. Anterior median eye is larger than posterior and lateral median. Visual region is as long as broad in front and somewhat narrower at the back than in front.

In present study Family Araneidae was surveyed for two years and it was reported that Genus *Neoscona* found dominant with 12 individuals (38.70 %) out of the total 31 spiders over other genus which was followed by genus *Araneus* 5 species (16.12%). Genus *Argiope* 2 species (6.45%), *Clorizopes* 4 species (12.90 %), *Cyrtophora* 3 species (9.67%), *Cyclosa 4 species* (12.90 %), *Telacantha* (3.22 %) and *Zygeilla* 1 species (3.22 %) represented respectively. (Table no.1) It was observed that during the survey winter was the most diverse season, in which all 31 species and 8 genera were recorded which was followed by monsoon with 18 species while 5 species were recorded in the summer.

Table 1: List of spiders from family Araneidae.

Araneidae	1. *Araneus anantanagensis* Female
	2. *Araneus mitificus* Female
	3. *Araneus nympha* Female
	4. *Araneus phalgaonensis* Female &Male
	5. *Argiope aemula* Female & Male
	6. *Argiope anasuja* (Thorell) Female
	7. *Chorizopes calciope* Female
	9. *Chorizopes khanjanes* Female
	10. *Chorizopes tikaderi* Female
	11.*Cyrtophora cicatrosa* Female
	12. *Cyrtophora citricola* Female
	13. *Cyrtophora jabalpurensis* Female
	14. *Cyclosa hexatuberculata* Female
	15. *Cyclosa insulana* Female
	16. *Cyclosa moondensis* Female
	17. *Cyclosa simony* Female
	18. *Neoscona achine* Female
	19. *Neoscona bengalensis* Female
	20. *Neoscona chrysunthusi* Female & Male
	21. *Neoscona crucifera* Female & Male
	22. *Neoscona dyali* Female
	23. *Neoscona mukharji* Female
	24. *Neoscona nautica* Female
	25. *Neoscona pavida* Female
	26. *Neoscona pratensis* Female
	27. *Neoscona shilongensis* Female
	28. *Neoscona sinhagadensis* Female
	29. *Neoscona theis* Female & Male
	30. *Thelacantha brevispina* Female
	31. *Zygiella indica* Female & Male

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Eriophora

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