

Diversity of Spiders from Zolambi Region of Chandoli National Park

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Abstract: Diversity of spiders from Zolambi region of Chandoli National Park in Western Ghats is studied for the first time. A total of 90 species belonging to 55 genera and 19 families are recorded from the study area during 2011-2013 with a dominance of Araneid, Salticid and Lycosid spiders.

Key words: Spider diversity, Western Ghats

I. Introduction

Spiders comprise one of the largest orders of animals. The spider fauna of India has never been studied in its entirety despite of contributions by many arachnologists since Stoliczka (1869). The pioneering contribution on the taxonomy of Indian spiders is that of European arachnologist Stoliczka (1869). Review of available literature reveals that the earliest contribution by Blackwall (1867); Karsch (1873); Simon (1887); Thorell (1895) and Pocock (1900) were the pioneer workers of Indian spiders. They described many species from India. Tikader (1980, 1982), Tikader, described spiders from India. Tikader (1980) compiled a book on Thomisidae spiders of India, comprising two subfamilies, 25 genera and 115 species. Pocock (1900) and Tikader (1980, 1987) made major contributions to the Indian Arachnology, have high lightened spider studies to the notice of other researcher. Tikader (1987) also published the first comprehensive list of Indian spiders, which included 1067 species belonging to 249 genera in 43 families. From the last three decades, contribution of Gajbe (1995-2003) to the field of spiders is noteworthy. He described 147 new spider species from different habitats of India. He published 69 papers on Araneid, Gnaphosid, Lycosid, Thomisid and Oxyopid spiders and also State Fauna series (2007, 2008a, 2009).

The updated spider checklist given by Keswani et al. (2012) of SGB Amravati University Arachnology laboratory shows 1686 species from 438 genera and 60 families. According to world spider catalogue there are Spiders of protected areas in India, are studied by Gajbe (1995a) in Indravati Tiger Reserve and recorded 13 species. Rane and Singh (1977) recorded five species and Gajbe (1995b) 14 species from Kanha Tiger Reserve, Madhya Pradesh. Gajbe (2003) prepared a checklist of 186 species of spiders in 69 genera under 24 families distributed in Madhya Pradesh and Chhattisgarh. Patel (2003) described 91 species belonging to 53 genera from Parabikulam Wildlife Sanctuary, Kerala. Manju Silwal et al. (2003) recorded 116 species from 66 genera and 25 families of spiders from Puma wildlife Sanctuary, Dangs, Gujarat. Sivaperuman et al., (2004) studied the spiders in Desert National Park, Rajasthan. Bastawade (2004) described arachnid fauna of orders Araneae, Scorpionida and Solifugi from Melghat Tiger Reserve, Amravati, Maharashtra State.

So far nobody has worked out or studied the spider fauna of Zolambi region of Chandoli National and hence we have decided to explore the spider diversity from this area. Recently Western Ghats is declared as world heritage site. The present study is restricted to Zolambi region of Chandoli National Park which forms the northern end of Western Ghats. The main geological formation of the area is the Deccan trap. Chandoli Wildlife Sanctuary is spread 308.97 sq. km. Most of the area is dense semi-evergreen forest with a wide range of flora. The area prevails humid and moderate climate, heavy rainfall.

II. Materials and Methods

Spider collection were adopted in different selected sampling plots. The collection techniques used were hand collection, litter sampling and sweep netting. The collections were made during early morning hours (6 hours to 9 hours) and day time (16 hours to 18 hours), from different parts of the microhabitats, like, rolled or folded leaves, plant branches, leaf litter, tree trunks, rock surface, grass blades, etc. The Lycosids and Gnaphosids were collected from the soil surface and also from the river beds.

Each spider was identified mainly on the basis of morphological characteristics, epigyne and or palp structure after carrying out the necessary dissections and by using the literature (Kaston, 1978; Barrion and Litsinger, 1995; Tikader, 1987 and Mujumdar, 2007). The details of body parts of specimens were examined in 70% ethanol under a good quality stereo zoom microscope. The identification of species was carried out by the comparison of morphological features with the help of published literature, standard books and field guides.

III. Observations and Results

A total of 90 species (Table-1) belonging to 55 genera and 19 families were recorded from the study area during 2011-2013. Among all these 19 families, high diversity was observed in the families Araneidae (20 species) > Salticidae (17 species) > Lycosidae (13 species) > Thomisidae (7 species).

Table : 1 Diversity of spiders in Zolambi region of Chandoli National Park

1. Araneidae – Orb Web Spiders

1. *Araneus mitifica* (simon) Female
2. *Arachnura angora* (Tikadar) 1970
3. *Araneus himalayaensis* (Tikadar) 1975
4. *Argiope aemula* (Walckenaer) Female
5. *Argiope aemula* (Thorell) Male
6. *Argiope anasuja* Female
7. *Cyclosa bifida* (Doleschall) Female
8. *Cyclosa hexatuberculata* (Tikadar) Female
9. *Cyclosa confraga* (Thorell) 1892
10. *Cyclosa insulans* (Costa), 1934.
11. *Gasteracantha geminata* (Fabricius) 1798, Female
12. *Gasteracantha kuhli* (C L. Koch) Female
13. *Gasteracantha remifera* (Butler) 1873
14. *Telecantha brevispina* (Doleschall) Female
15. *Larinia chloris* (Audouin), 1826
16. *Larinia emertoni* (Gajbe and Gajbe) 2004
17. *Neoscona mukerjei* (Tikadar) Female
18. *Poltys illepidus* (C. L. Koch) 1843
19. *Poltys nagpurensis* (Tikadar) 1982.
20. *Neoscona bengalensis* (Tikadar and Bal,) 1981

2. Clubionidae - Sac Spiders

21. *Clubiona bengalensis* (Biswas), 1984

3. Corinnidae – Ant Mimicking Sac Spiders

22. *Castianeira zetes* (Simon) 1897 Female
23. *Castianeira himalayensis* (Gravely) 1931

4. Eresidae – Social Spiders

24. *Stegodyphus sarasinorum* (Karsch,) 1891 Female

5. Gnaphosidae – Ground Spiders/Mouse Spiders

25. *Gnaphosa poonaensis* (Tikadar) 1973
26. *Scotophaesis bhataratae* (Gajbe) 1989
27. *Poecilochroa harmani* (Tikadar) 1982

6. Hersiliidae – Two Tailed Spiders/Bark Spiders

28. *Hersilia Savignyi* (Lucas) 1836 Female

7. Lycosidae – Wolf Spiders

29. *Lycosa balaranai* (Patel and Reddy) 1993
30. *Lycosa thoracica* (Patel and Reddy) 1993
31. *Archtosia indica* (Tikadar and Malhotra) 1980
32. *Evippa mandlaensis* (Gajbe) 2004
33. *Pardosa pseudoannulata* Female
34. *Hippasa greenalliae* (Blackwell) 1867.
35. *Hippasa hansae* (Gajbe and Gajbe) 1999
36. *Hippasa holmerae* (Thorell) 1895
37. *Hippasa madhuae* (Tikadar and Malhotra) 1980
38. *Pardosa birmanica* (Simon) 1884
39. *Pardosa leucopalpis* (Gravely) 1924
40. *Pardosa partita* (Simon) 1885.

41. *Pardosa ranjani* Gajbe 2004

8. Miturgidae – Dark Sac Spiders

42. *Cheiracanthium danieli* (Tikader) 1975 Female

9. Oxyopidae – Lynx Spiders

43. *Oxyopes chittrae* (Tikader) Female
44. *Oxyopes pankaj*(Gajbe and Gajbe) 2001
45. *Oxyopes shweta* (Tikadar)1970
46. *Oxyopes sameeri* Female
47. *Oxyopes tikaderi* (Biswas and Majumdar) 1995
48. *Peucetia elegans* (Blackwell,) 1864
49. *Peucetia viridian* (Stoliczka)1869.

10. Philodromidae – Running Crab Spiders/Elongated Crab Spiders

50. *Philodromus pali* (Gajbe) 2000
51. *Tibulus poonaensis* (Tikadar) 1962

11. Pholcidae – Daddy Long Leg Spiders

52. *Pholcus phalangioides* (Fuesslin)1775

12. Pisauridae – Nursery Web Spiders

53. *Pisaura gitae* Tikadar 1970 Female
54. *Nilus marginatus* Simon 1888
55. *Thalassius albocinctus* (Doleschall) 1859

13. Salticidae – Jumping Spiders

56. *Epeus albus* Proszynski 1992
57. *Menemerus bivittatus* (Dufour)1831
58. *Hyllus semicupreus* (Simon)1885
59. *Marpissa tigrina* T(ikadar)1965
60. *Marpissa singhi* Monga ,(Singh and Sadana)1989
61. *Myrmarachne incerta* (Narayan)1915
62. *Myrmarachne jajpurensis* (Proszynski) 1992
63. *Myrmarachne* (Maratha Tikadar) 1973
64. *Myrmarachne satorensis* (Narayan) 1915
65. *Myrmarachne uniseriata* (Narayan) 1915
66. *Phintella vittata* C. L.(Koch)1846
67. *Plexippus petersi* Female
68. *Portia fimbriata* (Doleschall,)1859
69. *Rhene decorate* (Tikadar) 1977
70. *Telamonia dimidiata* (simon 1899) Female
71. *Telamonia peckhami* (Thorell) 1891
72. *Thiania bhamoensis* Female

14. Scytodidae – Spitting Spiders

73. *Scytodes fusca*, (Walckenaer ,)1837

15. Sparassidae – Giant Crab Spiders

74. *Heteropoda venatoria* ,(Linnaeus,) 1767
75. *Olios millet* (Pocock,) 1901

16. Tetragnathidae

76. *Leucauge decorate* (Blackwall), 1864 Female
77. *Tetragnatha mandibulata* (Walckenaer) (Male and Female)
78. *Tetragnatha javanus*,(Thorell,) 1890.

17. Theridiidae – Comb Footed Spiders/Cob Web Spiders

79. *Latrodectus hasselti* 9Thorell) 1870

80. *Propostira quadraangulata*, (Simon) 1894
81. *Rhomphaea projiciens* (O. P. Cambridge). 1896
82. *Theridion spinosissimum* , (Caporiacco) 1934

18. Thomisidae – Crab Spiders/Flower Spiders

83. *Thomisus pathaki* (Gajbe) 2004
84. *Thomisus pooneus* (Tikadar) 1965
85. *Tmarus kotigeharus* (Tikadar), 1963
86. *Xysticus bhadatae* (Gajbe and Gajbe)1999
87. *Xysticus breviceps* (O. P. Cambridge)1885
88. *Xysticus khasiensis* (Tikadar) 1980
89. *Xysticus tikaderi* (Bhandari and Gajbe) 2001

19. Uloboridae

90. *Uloborus khasiensis* (Tikadar) 1969

IV. Discussion

Thus the results indicate the dominance of ground dwelling spiders like Salticids , Gnaphosids and Lycosides in the Zolambi region of Chandoli National Park. The forest is semi evergreen and rich in shrubs as undestroyed habitats resulting into ground dwelling spiders A total of 90 species (Table-1) belonging to 55 genera and 19 families were recorded from the study area during 2011-2013.

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