SPIDERS OF HINGOLGADH NATURE EDUCATION SANCTUARY, GUJARAT, INDIA

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Right from the beginning studies on Indian arachnofauna by European arachnologists like Stoliczka (1869), Pocock (1899, 1900, 1901), Sherriffs (1919, 1927, 1928, 1929, 1951) and Gravely (1921, 1924, 1935) and later by Indian arachnologists like Narayan (1915), Sinha (1951, 1952), Tikader (1966, 1977, 1980, 1982), Patel (1979), Patel and Reddy (1989, 1990), Majumder and Tikader (1991) and Reddy and Patel (1992, 1993), area-specific studies.

A total of 16,902.38 sq.km of Gujarat State is declared under National Parks, Sanctuaries and Reserve Forest areas. Considering the importance of inventorying biodiversity of different protected areas, a preliminary survey of the spider fauna of Hingolgadh Nature Education Sanctuary (HNES) was undertaken. This study forms a part of the biodiversity studies of HNES by Gujarat Ecological Education and Research Foundation, Gandhinagar, Gujarat.

The HNES is located at Hingolgadh Village in Jasdan Taluk of Rajkot District in Saurashtra Peninsula, Gujarat State ($22^0$7'-$22^0$10' N, $70^0$21' E). HNES covers an area of 654ha and is demarcated by a wall of loosely placed boulders. The Sanctuary is historically known as *Motisari Vidi*, which was managed as grassland in the past by ex-princely state of Jasdan. It was declared as HNES in the year 1976 by State Forest Department and is currently managed by the Gujarat Ecological Education and Research (GEER) Foundation, Gandhinagar. The Sanctuary is divided into appropximately two equal halves by a state highway, passing through the central part in a north-western to northern direction. Six villages surround the Sanctuary.

As per the classification of Champion and Seth (1968) the HNES is a typical thorn forest, characterised by dry deciduous shrubs. The dominant plant species are *Acacia senagal*, *A. nilotica*, *Maytenus emarginata*, *Euphorbia nivulia*, *Balanites aegyptica*, *Rhus mysurensis* and *Zizyphus* sp., which are adapted to xeric condition. Though grass patches are fairly good, *Aristida adscensionis* is the dominant one.

The climate of the Sanctuary is arid to semi-arid, characterised by a hot summer and dryness in non-rainy season. Average rainfall is 425mm, which is erratic and lasts for a short period. Temperature varies from average minimum of 10^0C to average maximum of 40^0C. The area falls in drought-prone region, and water does not last even up to the month of February in any stream or check dams.

An exhaustive collection of spiders were made from all the possible habitats during August to November 1998 for 20 days.

The method varied according to the purpose of collection. General collection to determine the composition and faunastic studies of the spiders included visual search during the day and night hours. Hand picking with small glass tubes (5.25 x 2.5cm size) with screw caps, beating the branches of trees and bushes with a stick, shifting leaf litter and boulders and searching from grass roots were the methods used to collect spiders. All the collected specimens were preserved in 70% ethyl alcohol. The specimen bottles were labelled with date, locality and any specific note of importance. Later the specimens were examined under the stereozoom microscope and identified with the help of literature.

A total of 56 species of spiders belonging to 34 genera distributed in 18 families were recorded (Table 1). The family Lycosidae (16 species) was the largest group followed by Araneidae (9 species). It was due to the scrub forest with xeric conditions that the araneid spiders were very few in number as well as in species as compared to their normal occurence in other habitats. The araneids represented were found near mainly small water bodies. These were followed by Theridiidae and Tetragnathidae with four species each and Pholcidae, Gnaphosidae and Salticidae

Out of these collections we came across two new species of spiders provisionally placed under genera *Lycosa* Simon and *Pardosa* Koch belonging to family Lycosidae, which are going to be described separately. Finding two new species of spiders indicates that the spider diversity is likely to be higher. If more studies are conducted round the year, we are sure that some more new records and new species can be determined.

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Table 1. List of spider fauna of Hingolgadh Nature Education Sanctuary, Gujarat, India.

Species	Species
I Filistatidae	XI Hersiliidae
1. *Pritha napadensis*	28. *Hersilia savignyi*
II Oecobiidae	XII Pisauridae
2. *Oecobius putus*	29. *Pisaura* sp.
III Eresidae	XIII Lycosidae
3. *Stegodyphus socialis*	30. *Lycosa prolifica*
4. *Stegodyphus pacificus*	31. *Lycosa geotubalis*
	32. *Lycosa iranii*
IV Uloboridae	33. *Lycosa poonaensis*
5. *Uloborus donolius*	34. *Lycosa* sp. 1
	35. *Lycosa* sp. 2
V Dictyna sp.	36. *Lycosa chaperi*
6. *Dictyna* sp.	37. *Lycosa pictula*
	38. *Lycosa goliathus*
VI Dictyna sp.	39. *Pardosa biramanica*
7. *Loxoscelus kinsukus*	40. *Pardosa sumatrana*
	41. *Pardosa annandalei*
VII Pholcidae	42. *Pardosa* sp.
8. *Pholcus phalangioides*	43. *Hippasa pisaurina*
9. *Artema atlanta*	44. *Evippa banarensis*
10. *Crossopriza layoni*	45. *Evippa rubiginosa*
VIII Theridiidae	XIV Oxyopidae
11. *Theridion tikaderi*	46. *Oxyopes wroughtoni*
12. *Theridion* sp.	
13. *Latrodactus hasseltii*	XV Gnaphosidae
14. *Cyllognatha surajbae*	47. *Drassodes parvidens*
	48. *Phaeocedus poonaensis*
IX Araneidae	49. *Gnaphosa* sp.
15. *Argeope anasuja*	
16. *Neoscona mukerjei*	XVI Clubionidae
17. *Neoscona theis*	50. *Chirachanthium saraswatii*
18. *Neoscona excelsus*	51. *Chirachanthium sadanai*
19. *Araneus bilunifer*	
20. *Cyclosa moonduensis*	XVII Heteropodidae
21. *Cyclosa confrega*	52. *Heteropoda bhaikakai*
22. *Cyrtophora citricola*	53. *Olios* sp.
23. *Leucauge decorata*	
	XVIII Salticidae
X Tetragnathidae	54. *Plexyppus payakullii*
24. *Tetragnath mandibulata*	55. *Phidippus* sp.
25. *Tetragnath sutherlandi*	56. *Marpissa decorata*
26. *Tetragnath fletcheri*	
27. *Tetragnath listeri*	