https://doi.org/10.33307/entomon.v47i3.770
Entomon 47(2): 331-334 (2022)
Short communication No. ent. 47315

Spider fauna (Araneae: Arachnida) in different localities of Kannur District, Kerala, India

S. Swapna[1*] and K. Babitha[2]

[1]Department of Zoology, SreeNarayana College, Chempazhanthy, Thiruvananthapuram-695587, Kerala, India
[2]SreeNarayana College, Kannur 670007, Kerala, India
Email: drsswapna@gmail.com; kbabithaaug27@gmail.com

ABSTRACT: A survey conducted to reveal on the spider diversity in different areas in Kannur District, Kerala, indicated a total of 31 species belonging to 15 families. The families Salticidae and Araneidae showed maximum species diversity. The study revealed that the selected study areas have favorable microhabitats for the spider fauna. © 2022 Association for Advancement of Entomology

KEYWORDS: Salticidae, Araneidae, diversity, microhabitats

Spiders are ubiquitous group belonging Arachnidea play an important role in controlling population of smaller invertebrates in an ecosystem (Riechert, 1974). Spiders can be used as bioindicators in environmental assessment programmes like heavy metal pollution (Maelfait and Frederik, 1998), urbanization (Mansouri *et al.,* 2019) forest fragmentation (Malvido *et al.,* 2020). One of the relevant issues in global conservation is the protection of biodiversity. Meaningful conservation cannot be possible without the knowledge on species involved. Spider fauna in India comprises 1905 species belonging to 61 families (Caleb and Sankaran, 2022). In Kerala region, very limited work has been carried on the faunal studies of spider (Sudhikumar *et al*., 2005; Sruthi *et al*., 2019; Shabnam *et al*., 2021).

The study areas are I- Kuppam,II-Trichambaram, III -Morazha, IV -Karimbam and V -Koovode in Kannur District, Kerala. Study sites were rich in vegetation including pepper plantations, grass land and home gardens. Investigation was carried from January to April. Spiders were collected at weekly intervals. For a systematic collection, specimens were collected from 4 quadrates (1m×1m) placed at four corners of 10m×10m area by visual search method between 9.30-11.30 h. A sufficient core area was left to avoid edge effect. All 4 quadrates were searched for a total of one hour. Collection was made mainly by hand picking method. Arial sampling of spiders was done by searching leaves, branches, bushes, tree trunks.Specimens were collected from knee height up to maximum overhead arm's reach and transferring them into collection bottles. Ground dwelling spiders were searched exploring leaf litter, under surface of logs, rocks, plant surface below knee. Specimens from each quadrate were preserved in alcohol (75%) and identified up to species level using literature

* Author for correspondence

Table 1. Spider species collected from different localities in Kannur District, Kerala

Family	Sl.No.	Scientific name	Study areas				
			I	II	III	IV	V
Salticidae	1	*Hyllus semicupreus* (Simon, 1885)	+				
	2	*Plexippus paykulli* (Audouin, 1826)		+	+		
	3	*P. petersi* (Karsch, 1878)	+				
	4	*Bavia kairali* (Samson & Sebastian, 2002)				+	
	5	*Telamonia dimidiata* (Simon, 1899)	+			+	
Ctenidae	6	*Ctenus cochinensis* (Gravely, 1931)					+
Miturgidae	7	*Cheiracanthium danieli* (Tikader, 1975)		+	+		
	8	*C. melanostomum* (Thorell, 1895)			+		
Araneidae	9	*Argiope anasuja* (Thorell, 1887)				+	
	10	*A. pulchella* (Thorell, 1881)	+				
	11	*Cyrtophora citricola* (Forsskal, 1775)		+			+
	12	*Gasteracantha geminata* (Fabricius, 1798)				+	
	13	*Cyclosa confraga* (Thorell, 1892)	+				
Corinnidae	14	*Castianeira zetes* (Simon, 1897)			+		
Thomisidae	15	*Thomisus pugilis* (Stoliczka, 1869)			+		
Tetragnathidae	16	*Opadometa fastigata* (Simon, 1877)				+	
	17	*Leucauge pondae* (Tikader, 1970)		+			
Theridiidae	18	*Theridion tikaderi* (Patel, 1973)				+	
	19	*Argyrodes gazedes* (Tikader, 1970)		+			
Pholcidae	20	*Crossopriza lyoni* (Blackwall, 1867)		+			
	21	*Pholcus kapuri* (Tikader, 1977)	+				
Sparassidae	22	*Heteropoda venatoria* (Linnaeus, 1767)				+	
Pisauridae	23	*Pisaura gitae* (Tikader, 1970)					+
Psecheridae	24	*Psechrus torvus* (O.Pickard-Cambridge, 1869)			+		
Hersiliidae	25	*Hersilia savignyi* (Lucas, 1836)				+	
Lycosidae	26	*Pardosa atropos* (L.Koch, 1878)					+
	27	*Hippasa agelenoides* (Simon, 1884)	+				
	28	*Trochosa punctipes* (Gravely, 1924)	+				
Oxyopidae	29	*Oxyopes birmanicus* (Thorell, 1847)				+	
	30	*O. javanus* (Thorell, 1887)				+	
	31	*Peucetia viridans* (Hentz, 1832)				+	

(Tikader, 1987; Barrion and Litsinger, 1995) and with the help of taxonomic experts.

Survey revealed that the population comprised of 31spider species belonging to Salticidae, Ctenidae, Miturgidae, Araneidae, Corinnidae, Thomisidae, Tetragnathidae, Theridiidae, Pholcidae, Sparassidae, Pisauridae, Psecheridae, Hersiliidae, Lycosidae and Oxyopidae (15 families). Maximum density of spider species was recorded in II and IV (25%) followed by III (19.64%), I (17.86%) and minimum at V (12.50%). Salticidae was the most dominant family with five species comprising of jumping spiders. Second dominant family was Araneidae (5 species) followed by Oxyopidae and Lycosidae (3 species each), Miturgidae, Tetragnathidae, Theridiidae and Pholcidae (2 species each). Ctenidae, Corinnidae, Thomisidae, Sparassidae, Pisauridae, Psecheridae and Hersilidae comprised one each (Table 1). Out of the spider species identified, 32.12 per cent is under Salticidae and 21.42 per cent under Aranaeidae. This is in accordance with the similar studies in different parts of Kerala (Marina and Tom, 2018; Asima *et al*., 2021). Salticidae in India comprises 181 species in 62 genera (Siliwal *et al*., 2005). Sudhikumar (2013) reported 27 species of predatory spiders from Nelliyampathy hill ranges in Kerala while Shabnam *et al*. (2021) reported 20 species from Wayanad region, Kerala. In the present study, *Plexippus paykulli* (Audouin, 1826), *Hyllus semicupreus* (Simon,1885) and *Telamonia dimidiata* (Simon, 1899) are observed in maximum density. *P. paykulli* is a cosmopolitan in distribution and reported to suppress the pests of agricultural crops (Rao *et al*., 1981; Tahir *et al*., 2014). Araneidae comprises of orb- weavers construct orb-web in the foliage upon trees, herbs, shrubs or grass (Gajbe, 2005) and in the present study, five species were recorded. *Cyrtophora citricola* was seen in maximum density. Abundance of orb- web species in the study sites might be attributed to the abundance of vegetation.

ACKNOWLEDGEMENTS

The authors are grateful to Dr. A.V. Sudhikumar, Centre for Animal Taxonomy and Ecology, Christ College, Kerala for the guidance in the identification of spider fauna.

REFERENCES

Asima A., Prasad G. and Sudhikumar A.V. (2020) Spider diversity of Kerala University Campus, Thiruvananthapuram, Kerala, India. ENTOMON 45(3): 209-218.

Barrion A.T and Litsinger J.A. (1995) Riceland spiders of south and Southeast Asia, CAB International, Cambridge, UK. pp 1-700.

Caleb J.T.D and Sankaran P.M. (2022) Araneae of India.Version 2022, online at http://www.indiaspiders.in (Accessed on 22/6/2022).

Gajbe U.A. (2005) Studies on some spiders of the family Araneidae (Araneae: Arachnida) from Madhya Pradesh, India. Record of Zoological Survey of India 105 (1-2): 45-60.

Maelfait J and Frederik H. (1998) Proceedings of the 17th European Colloquium of Arachnology, Edinburg (ed. P.A Selden). 293-300 pp.

Malvido J.B., Falcon A.M and Barron C.G.D. (2020) Diversity metrics of spider communities associated with an under storey plant in tropical rain forest fragment. Journal of Tropical Ecology 36(2): 47-55.

Mansouri H., Sonia O.R., Ourida K.A., Abdelhalim O.R and Lynda B. (2019) Effect of anthropogenic factors on spider communities (Arthropoda: Araneae) in Chrea National Park (Blida, Algeria). African Journal of Ecology 58(3): 409-421.

Marina R.J and Tom H.A (2018) Preliminary study on the spider diversity of a rice ecosystem in Kumarakom. Journal of Entomology and Zoology Studies 6(5): 827-829.

Rao P.R., Kankaka M.A., Rao R.V.R.A and Rao B.H.K.M. (1981) Note on new record of spider predators of *Amrasca biguttula*, a serious pest on mesta from Andhra Pradesh, India. Indian Journal of agricultural Science 51: 203-204.

Riechert S.E. (1974) Thoughts on the ecological significance of spiders. BioScience 24(6) : 352-356.

Shabnam F.P., Smija M.K., Rajeevan S., Prasadan P.K. and Sudhikumar A.V. (2021) Spider diversity (Arachnida;Araneae) in different plantations of western ghats, Wayanad Region, India. European journal of Ecology 7(1): 80-94.

Siliwal M., Molur S. and Biswas B.K. (2005) Indian spiders (Arachnida: Araneae): Updated checklist. Zoos' Print Journal 20(10): 1999-2049.

Sruthi R., Smija M. K., Tresiamma V. and Prasadan P.K. (2019) Spider Diversity (Arachnida: Araneae) in Different Ecosystems of the Western Ghats, Wayanad Region, India. South Asian Journal of Life Sciences 7(2): 29-39.

Sudhikumar A.V. (2013) Distribution Pattern of Spiders along an Elevational Gradient in Nelliyampathy Hill Ranges of the Western Ghats, Kerala, India. International Journal of Science and Research 4(7): 170-173.

Sudhikumar A.V., Mathew M.J., Sunish E., Murugesan S. and Sebastian P.A. (2005) Preliminary studies on the spider fauna in Mannavan Shola forest, Kerala, India (Araneae). European Arachnology Supplement 1: 319-327.

Tahir H.M., Bano M., Noor T., Orfan M., Nawaz S., Khan S.Y. and Mukhtar M.K. (2014) Effect of Thiodan on Survival, Behaviour and Predatory Performance of a Spider, *Plexippus paykulli* (Savigny et Audouin, 1827). Pakistan Journal of Zoology 46(3): 593-600.

Tikader B.K. (1987) Handbook Indian Spiders (Anon. Ed.). Zoological Survey of India, Calcutta. pp 251.

(Received July 08, 2022; revised ms accepted August 15, 2022; published September 30, 2022)