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Spiders From Tamia, Madhya Pradesh, India

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ABSTRACT

Tamia hills and Patalkot valley are situated in the Satpura ranges and are a part of the Pachmarhi Biosphere Reserve. The area is geologically important as it is a component of the Indian segments of Gondwanaland. Survey of spiders from Tamia, (MP) was carried out to know the spider diversity. 65 spider species from 16 families and 55 genera were recorded.

Keywords: Spider diversity, Tamia, Satpuda, Pachamadi, Madhya Pradesh.

INTRODUCTION

One of the hidden treasures of Madhya Pradesh, Tamia is a picturesque forest destination that offers scenic and breath-taking views of dense forests and mountains. Madhya Pradesh has a subtropical climate. It has a hot dry summer (April–June) followed by monsoon rains (July–September) and a cool and relatively dry winter.

Spiders (order Araneae) are air-breathing arthropods that have eight legs and chelicerae with fangs that inject venom. They are the largest order of arachnids and rank seventh in total species diversity among all other group of organisms. Spiders are ancient animals with a history going back over 350 million years. They are abundant and widespread in almost all ecosystems and constitute one of the most important components of global biodiversity. Spiders have a very significant role to play in ecology by being exclusively predatory and thereby maintaining ecological equilibrium.

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 (2001) conducted biodiversity studies in Hingolgarh Nature Education Sanctuary, Gujarat and described 56 species of spiders belonging to 34 genera distributed in 18 families.

He also carried out spider diversity studies in Vansda National Park during 2001-2002. Patel (2003) described 91 species belonging to 53 genera from Parabikulum Wildlife Sanctuary, Kerala. Manju Silwal et al. (2003) recorded 116 species from 66 genera and 25 families of spiders from Purna wildlife Sanctuary, Dangs, Gujarat. Majumdar (2004a) studied about the wolf spider of Sundarbans and described a new species Pardosa Koch (Majumdar, 2004b). 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. Hippargi, et al. (2011b) reported occurrence of spiders from 19, 25, 31families from Lonar, Melghat and Southern Tropical thorn forest, Solapur respectively.

The nutritive and medicinal values of fish have been recognized from immortal time. The heavy metal concentration in different tissues of fish enters into human beings through food chain (EL-Shehawi *et al.,* 2007).

Uniyal (2006) recorded a total of 19 species of spiders belonging to 10 families from Indian-Trans Himalayan region. Centre for Indian Knowledge System, Chennai has also conducted ecological studies of spiders in a cotton agro ecosystem of Guindy National Park. De (2001) listed 19 species of spider from Dudhwa Tiger Reserve in his management plan. Hore and Uniyal (2008a, 2008b) worked on the spider assemblage and the diversity and composition of spider assemblages in different vegetation types in Terai Conservation Area (TCA). Hore and Uniyal (2008) worked on spiders as indicator species for monitoring of habitat condition in TCA. Uniyal and Hore (2008) also studied on the effect of prescribed fire on spider assemblages in TCA. Biswas and Biswas (2004) contributed significantly to spider diversity by rendering comprehensive lists of new recorded spider species from Manipur and West Bengal. Siliwal, et al. (2005) prepared an updated Checklist of Indian spider and provided taxonomic re-evaluation of described species, referred 1442 species belonging to 361 genera of 59 families from the Indian Region. Of the 1442 species, 1002 were endemic to the Indian mainland. Quasin and Uniyal (2010) studied spider diversity from Kedarnath wildlife Sanctuary Recently, Vairale and Vankhede (2010) reported 517 spider species from Melghat Sanctuary. The knowledge on diversity and distribution of spiders in other sanctuaries is sparse as compared to other sanctuaries of the India listed above. Hence, it was felt to explore spider diversity in the region of Tamia

MATERIAL AND METHOD

Tamia is a dry deciduous forest in Satpuda (Madhya Pradesh, India). It represents mixed flora with dominance of tall trees and streams. It has a good herbivore population, these spiders are recorded from different selected habitats which include riparian habitat, grasslands, dry deciduous forest, mixed forest with tall trees and shrubs. Survey was also carried out for ground spiders, spiders from decaying barks of trees, debris and crevices of rocks. Well established sampling protocols for spider collection are adopted in different selected sampling plots, like Pitfall Trapping, Sweep Netting, Ground Hand Collecting, Aerial Hand Collecting, Vegetation Beating and Litter sampling.

RESULT

In the present study a first-hand record carried out in Tamia. The spider diversity is in the order of Araneidae (12 species), Lycosidae (7 species), Oxyopidae and Thomisidae (6 species each), Gnaphosidae (5 species). (Table 1)

Table 1. Spider families, genera and species recorded from Tamia (Madhya Pradesh, India) during 2017-2018.

FamilyGenus	Species	
Araneidae	6	12
Clubionidae	3	4
Gnaphosidae	4	5
Lycosidae	5	7
Nephilidae	2	1
Oxyopidae	3	6
Philodromidae	3	3

Pholcidae	3	3
Pisauridae	4	2
Salticidae	3	5
Scytodidae	2	2
Sparassidae	2	1
Tetragnathidae	4	3
Theridiidae	4	4
Thomisidae	4	6
Uloboridea	3	1
Total	**55**	**65**

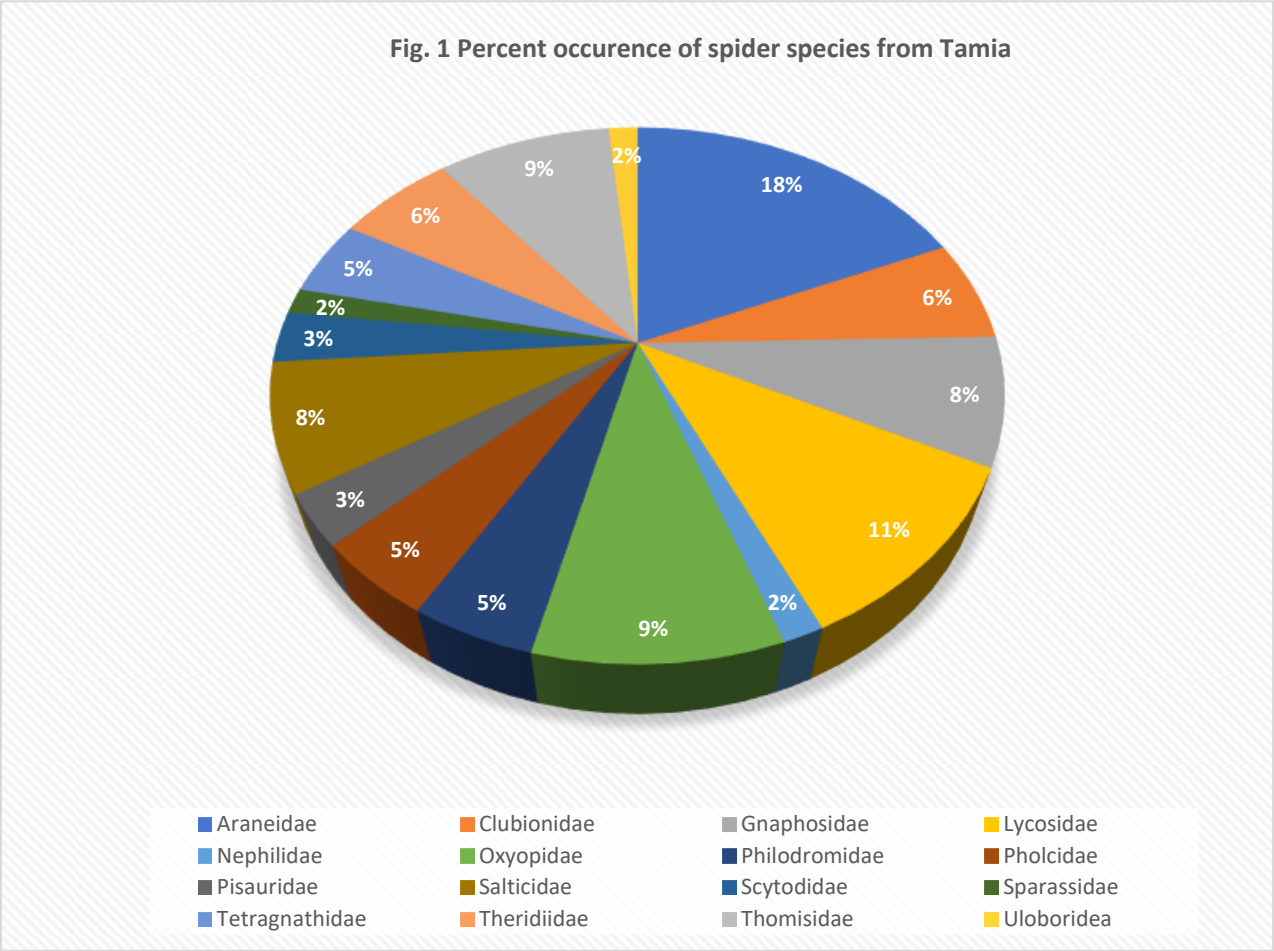

Figure 1: - Percent occurrence of spider species from Tamia (M.P.)

(I) FAMILY:- ARANEIDAE

1. *Araneus cucurbitinus* Clerck ♀.
2. *Araneus mitifica* (Simon) ♀.
3. *Chorizopes khanjanes* Tikader. ♀.
4. *Cyrtophora bidenta* Tikader ♀.
5. *Cyrtophora citricola* (Forskal) ♀.
6. *Cyrtophora moluccensis* (Doleschall) ♀.
7. *Larinia chloris* (Audouin) ♀.
8. *Neoscona bengalensis* Tikader and Bal ♀.
9. *Neoscona lugubris* (Walckenaer) ♀.
10. *Neoscona mukerjei* Tikader ♀.
11. *Neoscona nautica* (L. Koch) ♀.
12. *Zygeilla indica* Tikader and Bal ♂.

(II) FAMILY :- CLUBIONIDAE

1. *Clubiona acanthochemis* Simon ♀.
2. *Clubiona filicate* Cambridge ♀.
3. *Oedignatha microsculata* Reimoser ♀.

4. *Oedignatha poonaensis* ♀.

(III) FAMILY :- GNAPHOSIDAE

1. *Callilepis rukminiae* ♀.
2. *Drassodes sagarensis* ♀
3. *Gnaphosa poonaensis* Tikader ♀.
4. *Zelotes chandosiensis* Tikader and Gajbe ♀.
5. *Zelotes kusumae* ♀.

(IV) FAMILY :- LYCOSIDAE

1. *Hippasa agelenoides* (Simon) ♀.
2. *Hippasa lycosina* Pocock ♀.
3. *Hippasa madhuae* ♀.
4. *Lycosa poonaensis* ♀.
5. *Lycosa shillongensis* ♀.
6. *Pardosa birmanica* Simon ♀.
7. *Pardosa minutus* Tikader and Malhotra ♀.

(V) FAMILY: - NEPHILIDAE

1. *Nephila pilipes* ♀.

(VI) FAMILY :- OXYOPIDAE

1. *Oxyopes ashae* Gajbe ♀.
2. *Oxyopes chittrae* Tikader ♀.
3. *Oxyopes pankaji* Gajbe and Gajbe ♀.
4. *Oxyopes shwetae* Tikader ♀.
5. *Peucetia jabalpurensis* Gajbe and Gajbe. ♀.
6. *Peucetia viveki* Gajbe ♀.

(VII) FAMILY :- PHILODROMIDAE

1. *Philodromus betrabatai* Tikader ♀.
2. *Thanatus dhakuricus* Tikader ♀.
3. *Tibellus elongates* Tikader ♀.

(VIII) FAMILY :- PHOLCIDAE

1. *Artema atlenta* walckenaer ♀.
2. *Crossopriza lyoni* (Blackwall) ♀.
3. *Pholcus phalangioides* ♀.

(IX) FAMILY :- PISAURIDAE

1. *Pisaura gitae* ♀.
2. *Thalassius marginellus* ♂.

(X) FAMILY :- SALTICIDAE

1. *Marpissa anusuae* Tikader and Biswas ♀.
2. *Marpissa decorata* Tikader ♀.
3. *Myrmarachne orientales* Tikader ♀.
4. *Phidippus bhimrakshiti* ♀.
5. *Plexippus paykullii* ♀.

(XI) FAMILY :- SCYTODIDAE

1. *Scytodes alfredi* ♀.
2. *Scytodes thoracica* (Latreillae) ♀.

(XII) FAMILY :- SPARASSIDAE

1. *Heteropoda venatoria* ♀

(XIII) FAMILY :- TETRAGNATHIDAE

1. *Leucauge decorata* (Blackwall) ♀.
2. *Tetragnatha mandibulata* Walckenaer ♀.
3. *Guizygiella melanocrania* (Thorell) ♀.

(XIV) FAMILY :- THERIDIIDAE

1. *Argyrodes ambalikae* ♀.
2. *Argyrodes gouri* ♀.
3. *Argyrodes jamkhedes* ♀.
4. *Theridion manjithar* ♀.

(XV) FAMILY :- THOMISIDAE

1. *Misumena mridulai* Tikader ♀.
2. *Oxyptila maratha* Tikader ♂.
3. *Pistius robusta* Basu ♀.
4. *Thomisus elongates* Stoliczka ♀.
5. *Thomisus whitakeri* ♀.
6. *Xysticus kali* Tikader and Biswas.

(XVI) FAMILY :- ULOBORIDAE

1. *Uloborus danolius* Tikader ♀.

DISCUSSION

Since the study was mainly based on visual searches and beating, other sampling methods such as pitfall trapping, fogging, sweeping would certainly increase the species list. Past studies in the world have shown that different methods tend to complement one another (Coddington *et al*., 1991; Russell-Smith, 1999). Earlier no work has been carried out in Tamia for spider diversity and this is the first report. During the present spider survey, it is found that the diversity of genera is more around riparian habitats than that in grass land. Season wise, maximum number of genera is recorded from November and December, indicating their life cycle coinciding with that of insects including grasshoppers.

Thus, Tamia contains various habitats with a rich spider fauna. However, this is not an end and final conclusion regarding species richness in Tamia as number of areas and habitats are still to be explored.

Conflicts of Interest: The author declares no conflict of interest

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