

Review Article

Faunal Diversity of Linyphiidae (Araneomorphae: Araneae: Arachnida) in India

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ABSTRACT

The present article deals with the faunal diversity of the spiders belonging to the family Linyphiidae. In India, the Linyphiidae is represented by 94 species in 39 genera in 19 states and 3 union territories and 48 species are endemic. In India, *Oedothorax* Bertkau, 1883 is the largest genus consisting 17 species. Maximum 32 species of these spiders were recorded in Jammu & Kashmir followed by 18 species each in Kerala, Uttarakhand and West Bengal. In northeast part of India, 12 linyphiid species are recorded in Meghalaya while no species is reported yet from Arunchal Pradesh, Nagaland and Tripura. Interestingly, larger states in central India like Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan, and Telangana are very poorly represented by these spiders and need extensive survey for these spiders. None of the linyphiid spiders of India are recorded as endangered or vulnerable species in IUCN Red List of threatened Taxa. Therefore, conservation efforts are immediately needed for their conservation practices.

Key words: Faunal distribution, India, Sheet Weaver, Money spider, Linyphiidae

INTRODUCTION

Spiders are chelicerate arthropods belonging to the order Araneae of class Arachnida and are highly diverse and abundant terrestrial predators and their presence is frequently associated with the structural quality of the ecosystems, due to their effect of biocontrol over soil animals, particularly arthropods. Despite knowing this fact, little is known about the spider fauna in agricultural areas. The order Araneae ranks seventh in global diversity (49,006 species) after the five largest insect orders (Coleoptera – ca. 4,00,000 species, Lepidoptera – ca. 1,80,000 species, Hymenoptera – ca. 1,50,000 species, Diptera – ca. 1,25,000 species, Hemiptera – ca. 50,000 species) and one arachnid order (Acari – over 50,000 species) in terms of species diversity. Out of them, only 1,852 species belonging to 478 genera in 62 families are reported in India (Caleb & Sankaran, 2020). However, there are several species in wild and museum collections that await description and classification. It is estimated that only one third to one fifth of existing species have been described. Spiders play a very significant role in the ecology by being almost exclusively predatory and thereby regulate mostly insect populations. All spiders are venomous but venom of only few species is harmful to humans, though its venom is useful in study of neuromuscular and cardiac pharmacology (Langenegger *et al.*, 2019). Despite the applied values, the spiders have received very little attention as far as their conservation is concerned. Only few tarantulas in India are listed in IUCN Red List

(Molur *et al.*, 2008) and Siliwal *et al.* (2011) recommended immediate action to conserve them to prevent their extinction. In spite of current researches on diversity and distribution of spiders in India, their number is meager as compared to other regions of the world. Out of 49,006 described species under 4,194 genera and 128 families in the world (WSC, 2020), only 1,852 species belonging to 478 genera in 62 families are known in India (Caleb & Sankaran, 2020).

Linyphiidae is the second largest family of spiders after Salticidae encompassing 4,672 described species in 619 genera worldwide (WSC, 2020). The spiders in this family are commonly known as sheet weavers, or money spiders and are usually very small (1–10 mm long) with 8-eyes, three claws and no cribellum. The eyes are arranged in 2 rows of 4, usually heterogeneous in size with the anterior medians smaller than the rest. They are distinguishable from other families by having a point of weakness in the joint between the patella and tibia of the legs that allows the spider to break the leg from that point, if necessary. Mostly they are distributed in the temperate regions, but several species are also found in the tropics. Indeed, Linyphiidae is perhaps the most widely distributed spider family. Linyphiid spiders construct a sheet web sometimes dome shaped at ground level but they may inhabit a very wide array of habitats. Their webs do not have retreat and the spider always hang inverted below the sheet. Sometimes, the larger species put in irregular vertical snares that perform both as sheet suspension strands and as barrage balloon wires holding the flying

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insects. Several species of Linyphiidae disperse by air, the phenomenon is known as ballooning or kiting particularly when their very dense populations, particularly of spiderlings, try to balloon at the same time. Ballooning occurs usually in late summer (Weyman, 1995). The density of linyphiid spiders may reach up to 29,000 individuals per cubic meter in some habitat (Duffey & Green, 1975).

In India, Pickard–Cambridge (1885) was the first to describe a linyphiid spider, *Linyphia perampla*, syn. of *Lepthyphantes peramplus* and also recorded one species, *Erigone dentipalpis* (Wider, 1834), both from Jammu & Kashmir. Later on, Simon (1894) described one species, *Emenista bisinuosa* Simon, 1894 from Tamil Nadu. Thereafter, several species were described and recorded by Caporiacco (1935a) from Jammu & Kashmir and one species, *Bathyphantes leucophthalma* syn. of *Cresmatoneta leucophthalma* by Fage (1946) from Uttarakhand. Among the Indian author, Tikader (1970, 1981) was first to describe few species of linyphiid spiders from Sikkim and Himachal Pradesh and henceforth several species of these spiders were either described or recorded from many states in India. At present, a moderate amount of knowledge of Linyphiidae is available in India but the literature are all scattered and so far no consolidated account is available regarding their distribution pattern across the country. Therefore, this present work was taken up to provide up-to-date information of this family in the light of modern taxonomic concept.

MATERIALS AND METHODS

This checklist is prepared on the basis of published literature in surveys, books, journals, theses and World Spider Catalogue up to 30 October, 2020. In the present checklist, attempts have been made to correct such errors in the scientific names of the spiders. Only those synonymies were referred that were reported in India. For other synonymies, WSC (2020) may be consulted. Also, those spiders not identified up to specific level, were omitted if some species of that genus were recorded under that genus in that state. The record of linyphiid spiders is also presented species-wise as well as state and union territories wise for their easy access. Seemingly erroneous records are marked with (†). If the spider species is not endemic, its elsewhere distribution is also provided.

RESULTS AND DISCUSSION

In India, the Linyphiidae is represented by 94 species in 39 genera in 19 states and 3 union territories (Delhi, Ladakh and Jammu & Kashmir) and about half of the species (48 species) are endemic. However, this record is only 2% of the world linyphiid fauna and most of species are described or reported during the last two decades. Actually, linyphiids are most diverse in the north temperate regions than other regions. In spite of extensive surveys conducted by several arachanologists in India, these spiders were very poorly recorded in most of the states, most of the species were not recovered after their description.

The predatory behaviour of spiders is of great relevance for natural control in agroecosystems. The spiders play an important role in most terrestrial food-webs and may be very abundant in several habitats. Moreover, despite the ecological significance of spiders in terrestrial ecosystems, they have received very little

attention as far as their conservation is concerned, particularly for linyphiid spiders (Borges & Wunderlich, 2008; Borges *et al.*, 2016). Among the linyphiid spiders, only 3 species are listed as critically endangered in IUCN Red List of Threatened Animals: *Centromerus anoculus* Wunderlich, 1995 (Cardoso *et al.*, 2018a) and *C. sexoculatus* Wunderlich, 1992 (Cardoso *et al.*, 2018b) found only in Madeira (an autonomous region of Portugal) and *Nothophantes horridus* Merrett & Stevens, 1995 found in an area of less than one square kilometer in England (Cardoso & Hilton-Taylor, 2015); and 3 species are listed as vulnerable such as *Troglohyphantes gracilis* Fage, 1919 (World Conservation Monitoring Centre, 1996), *T. similis* Fage, 1919 (World Conservation Monitoring Centre, 1996b) and *T. spinipes* Fage, 1919 (World Conservation Monitoring Centre, 1996c) all found only in Slovenia. Longback, Bell *et al.* (2002) attempted to manipulate the abundance of a linyphiid spider, *Lepthyphantes tenuis* (Blackwall, 1852) in field population by management of field margins.

Endemism in linyphiid spiders in India is high at the species level (48 species out of 94 species recorded), and these species are threatened with the loss and fragmentation of habitats. Though, none of the species of linyphiid spiders are listed in IUCN Red List of Threatened Animals as endangered or vulnerable in India, still like others they are also threatened due to habitat loss and fragmentation and other anthropogenic activities hampering ecosystem. Therefore, conservation efforts are immediately needed for their conservation practices. Results demonstrated that most of the surveys conducted in India have remained restricted to a few states and union territories particularly, in the Western Ghats, Eastern Ghats and north and northeast India, and most areas in the country still remain virgin. Hence, a systematic survey is essential for the entire country to find an overall representation of linyphiid spiders in the country.

In India, *Oedothorax* Bertkau, 1883 is the largest genus consisting 17 species, out of which 15 species are very recently described by Tanasevitch (2015, 2016, 2017, 2020a, b). Maximum 32 species of these spiders were recorded in Jammu & Kashmir followed by 18 species each in Kerala, Uttarakhand and West Bengal. In northeast part of India, 11 linyphiid species are recorded in Meghalaya while no species is reported yet from Arunchal Pradesh, Nagaland and Tripura. Strangely, larger states in central India like Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan, and Telangana are very poorly represented by these spiders and need extensive survey for these spiders (Figure 1). Six species, mentioned below marked with (†) seem to be misidentified and the record from India is doubtful and require re-examination. Few species of the family reported by Caporiacco (1935a) from Jammu & Kashmir remained unnoticed by Caleb & Sankaran (2020) who mentioned only 61 species under 27 genera from India. The detail list of these spiders distributed in Indian states and union territories and elsewhere are listed in Table 1.

Distribution of Linyphiidae Spiders in Different States of India

- 1. Andhra Pradesh:** *Coleosoma floridanum*
- 2. Assam:** *Lepthyphantes* sp., *Linyphia* sp.
- 3. Gujarat:** *Coleosoma floridanum*, *Erigone* sp., *Lepthyphantes* sp., *Linyphia sikkimensis*, *Nerienne sundaica*, *Stemonyphantes* sp.

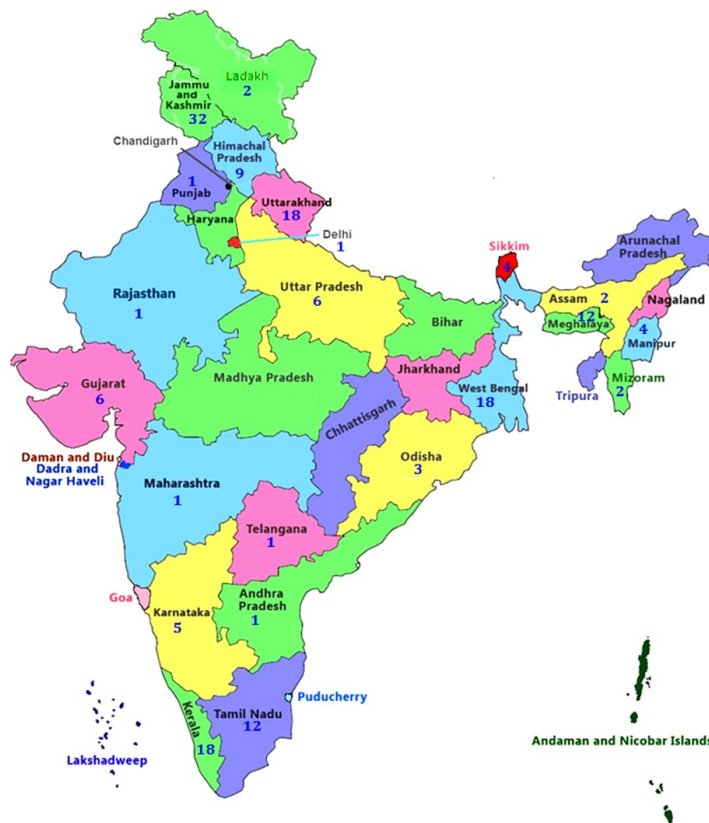


Figure 1. Number of Species of Spiders Belonging to the Family Linyphiidae in Indian States and Union Territories.

4. Himachal Pradesh: *Caviphantes pseudosaxetorum*, *Erigone rohtangensis*, *Gongylidiellum confusum*, *Gongylidioides pectinatus*, *Indophantes digitulus*, *Oedothorax paralegrandi*, *Pelecopsis Indus*, *Scotargus pilosus*, *Tiso incisus*

5. Karnataka: *Linyphia hortensis*, *L. triangularis*, *Neriene birmanica*, *N. emphana*, *N. macella*, *N. sundaica*

6. Kerala: *Atypena adelinae*, *A. thailandica*, *Caviphantes pseudosaxetorum*, *Erigone bifurca*, *Gongylidioides keralaensis*, *Lepthyphantes lingsoka*, *L. peramplus*, *L. rudrai*, *L. stramineus*, *Linyphia sp.*, *Nasoona crucifera*, *Neriene hammeni*, *N. sundaica*, *Oedothorax cunur*, *O. kodaikanal*, *O. stylus*, *Paracymboides aduncus*, *P. tibialis*

7. Maharashtra: *Neriene sundaica*

8. Manipur: *Atypena sp.*, *Erigone bifurca*, *Labulla sp.*, *Neriene sundaica*

9. Meghalaya: *Atypena cirrifrons*, *Caviphantes pseudosaxetorum*, *Indophantes bengalensis*, *Nasoona asocialis*, *Neriene sundaica*, *Oedothorax khasi*, *O. Meghalaya*, *O. sohra*, *O. unciger*, *O. uncus*, *Ummeliata insecticeps*, *Walckenaeria saetigera*

10. Mizoram: *Atypena adelinae*

11. Odisha: *Atypena cirrifrons*, *Erigone bifurca*, *Nasoona orissa*

12. Punjab: *Neriene macella*

13. Rajasthan: *Linyphia sp.*

14. Sikkim: *Lepthyphantes bhudbari*, *L. lingsoka*, *L. rudrai*, *Linyphia sikkimensis*

15. Tamil Nadu: *Caviphantes pseudosaxetorum*, *Emenista bisinuosa*, *Indophantes pallidus*, *Linyphia sp.*, *Oedothorax cunur*, *O. kodaikanal*, *O. paracymbialis*, *O. rusticus*, *O. stylus*, *Paracymboides aduncus*, *P. tibialis*, *Paragongylidiellum caliginosum*

16. Telangana: *Callitrichia formosana*

17. Uttar Pradesh: *Erigone rohtangensis*, *Lepthyphantes peramplus*, *L. stramineus*, *Linyphia sikkimensis*, *Microbathyphantes palmarius*, *Oedothorax globiceps*

18. Uttarakhand: *Agyneta sp.*, *Anguliphantes nepalensis*, *Atypena adelinae*, *Bathyphantes sp.*, *Caviphantes pseudosaxetorum*, *Cresmatoneta leucophthalma*, *Gongylidiellum confusum*, *Gongylidioides pectinatus*, *Lepthyphantes rudrai*, *Linyphia sikkimensis*, *Microlinyphia sp.*, *Neriene birmanica*, *N. macella*, *N. sundaica*, *Pelecopsis Indus*, *Pityohyphantes sp.*, *Scotargus pilosus*, *Tiso incisus*

19. West Bengal: *Anguliphantes nepalensis*, *A. nepalensoides*, *Callitrichia formosana*, *Gongylidiellum nepalense*, *Indophantes bengalensis*, *I. tonglu*, *Lepthyphantes bhudbari*, *L. lingsoka*, *L. rudrai*, *Nasoona indiana*, *Oedothorax cornutus*, *O. falciferoides*, *O. lopchu*, *O. villosus*, *Oia sororia*, *Tapinocyboides bengalensis*, *Tiso indianus*, *Walckenaeria martensi*

Distribution of Linyphiidae Spiders in Different Union Territories of India

1. Delhi: *Microbathyphantes palmarius*

2. Jammu & Kashmir: *Araeoncus duriusculus*, *Atypena sp.*, *Collinsia crassipalpis*, *Erigone dentipalpis*, *E. pseudovagans*, *E. rohtangensis*, *Gongylidiellum confusum*, *G. nigrolimbatum*, *Gongylidium baltoroii*, *Heterolinyphia tarakotensis*, *Indophantes digitulus*, *Lepthyphantes allegrii*, *L. annulipes*, *L. bhudbari*, *L. deosaiicola*, *L. incertissimus*, *L. leprosus*, *L. nigridorsus*, *L. peramplus*, *L. stramineus*, *L. trivittatus*, *Linyphia albipunctata*, *L. consanguinea*, *L. triangularis*, *Microlinyphia pusilla*, *Minicia vittata*, *Neriene birmanica*, *Oedothorax caporiaccoi*, *O. globiceps*, *Piniphantes himalayensis*, *Tiso megalops*, *Troxochrota kashmirica*

3. Ladakh: *Erigone jammu*, *Linyphia sp.*

Table 1. Distribution of Different Species of Linyphiidae Spiders in India

Spider species	Distribution	References	Elsewhere distribution
1. <i>Agyneta</i> sp.	Uttarakhand	Uniyal <i>et al.</i> , 2011	
2. <i>Anguliphantes nepalensis</i> Tanasevitch, 2011	Uttarakhand West Bengal	Tanasevitch, 2011d	Pakistan, Sri Lanka
3. <i>Anguliphantes nepalensoides</i> Tanasevitch, 2011	West Bengal	Tanasevitch, 2011d	Endemic
4. <i>Araeoncus duriusculus</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935b	Endemic
5. <i>Atypena adelinae</i> Barrion & Litsinger, 1995	Kerala	Sudhikumar <i>et al.</i> , 2005a; Mathew <i>et al.</i> , 2014; Abhilaash & Kumar, 2018	Philippines
	Mizoram	Chowdhury <i>et al.</i> , 2017	
	Uttarakhand	Uniyal <i>et al.</i> , 2011	
6. <i>Atypena cirrifrons</i> (Heimer, 1984)	Meghalaya	Tanasevitch, 2019	China, Laos, Thailand, Vietnam
	Odisha	Tanasevitch, 2017a	
7. <i>Atypena thailandica</i> Barrion & Litsinger, 1995	Kerala	Sudhikumar, 2007	Thailand
8. <i>Atypena</i> sp.	Jammu & Kashmir	Khan, 2009	-
	Kerala	Sudhikumar, 2007; Jose <i>et al.</i> , 2018	
	Manipur	Kananbala <i>et al.</i> , 2018	
	Mizoram	Chowdhury <i>et al.</i> , 2017	
9. <i>Bathyphantes</i> sp.	Uttarakhand	Uniyal <i>et al.</i> , 2011	-
10. <i>Callitrichia formosana</i> Oi, 1977 <i>syn. Atypena formosana</i> (Qi, 1977)	Telangana	Anitha & Vijay, 2016	Bangladesh, China, Japan, Philippines, Taiwan
	West Bengal	Chakraborty <i>et al.</i> , 2016	
11. <i>Caviphantes pseudosaxetorum</i> Wunderlich, 1979	Himachal Pradesh	Tanasevitch, 2011, 2019	China, Indonesia, Japan, Lebanon, Nepal, Pakistan, Russia (Kurile Is.), Sri Lanka
	Kerala	Tanasevitch, 2011	
	Meghalaya	Tanasevitch, 2011	
	Tamil Nadu	Tanasevitch, 2011, 2019	
	Uttarakhand	Tanasevitch, 2011	
12. <i>Coleosoma floridanum</i> Banks, 1900	Andhra Pradesh	Srinivasulu <i>et al.</i> , 2013	Europe, North, Central and South America, Macaronesia, Pacific Is., Seychelles, West Africa
	Gujarat	Thumar, 2019	
13. <i>Collinsia crassipalpis</i> (Caporiacco, 1935), <i>syn. Gongylidium crassipalpe</i> (Caporiacco, 1935), <i>syn. Milleriana crassipalpis</i>	Jammu & Kashmir	Caporiacco, 1935a; Thaler, 1987	Endemic
14. <i>Cresmatoneta leucophthalma</i> (Fage, 1946), <i>syn. Bathyphantes leucophthalma</i> Fage, 1946	Uttarakhand	Fage, 1946	Endemic
15. <i>Emenista bisinuosa</i> Simon, 1894	Tamil Nadu	Simon, 1894	Endemic
16. <i>Erigone bifurca</i> Locket, 1982	Kerala	Sudhikumar <i>et al.</i> , 2005a; Mathew <i>et al.</i> , 2014	Indonesia, Malaysia, Philippines
	Manipur	Kananbala <i>et al.</i> , 2018	
	Odisha	Tanasevitch, 2017a	
17. <i>Erigone dentipalpis</i> (Wider, 1834)	Jammu & Kashmir (Sind Valley)	Pickard–Cambridge, 1885	Caucasus, Central Asia, China, Europe, Iran, Kazakhstan, North Africa, Russia, Turkey
18. <i>Erigone jammu</i> Tanasevitch, 2018*	Ladakh	Tanasevitch, 2018b	Endemic
19. <i>Erigone pseudovagans</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
20. <i>Erigone rohtangensis</i> Tikader, 1981	Himachal Pradesh	Tikader, 1981	Endemic
	Jammu & Kashmir	Khan, 2011b; Khan & Rather, 2012	
	Uttar Pradesh	Hore & Uniyal, 2008	

Table 1 contd.

21. <i>Erigone</i> sp.	Gujarat	Yadav <i>et al.</i> , 2017	-
	Kerala	Sebastian <i>et al.</i> , 2005a	
22. <i>Gongylidiellum confusum</i> Thaler, 1987	Himachal Pradesh	Tanasevitch, 2011	Endemic
	Jammu & Kashmir	Thaler, 1987; Tanasevitch, 2011	
	Uttarakhand	Tanasevitch, 2011	
23. <i>Gongylidiellum nepalense</i> Wunderlich, 1983	West Bengal	Tanasevitch, 2011	Nepal
24. <i>Gongylidiellum nigrolimbatum</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
25. <i>Gongylidioides keralaensis</i> Tanasevitch, 2011	Kerala	Tanasevitch, 2011	Endemic
26. <i>Gongylidioides pectinatus</i> Tanasevitch, 2011	Himachal Pradesh Uttarakhand	Tanasevitch, 2011	Malaysia
27. <i>Gongylidium baltoro</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
28. <i>Heterolinyphia tarakotensis</i> Wunderlich, 1973	Jammu & Kashmir	Thaler, 1987	Nepal
29. <i>Indophantes bengalensis</i> Saaristo & Tanasevitch, 2003	Meghalaya	Saaristo & Tanasevitch, 2003	Endemic
	West Bengal		
30. <i>Indophantes digitulus</i> (Thaler, 1987), syn. <i>Lepthyphantes digitulus</i> Thaler, 1987	Himachal Pradesh	Tanasevitch, 2011	Nepal, Pakistan
	Jammu & Kashmir	Thaler, 1987; Saaristo & Tanasevitch, 2003	
31. <i>Indophantes pallidus</i> Saaristo & Tanasevitch, 2003	Tamil Nadu	Saaristo & Tanasevitch, 2003	Endemic
32. <i>Indophantes tonglu</i> Tanasevitch, 2011	West Bengal	Tanasevitch, 2011	Endemic
33. <i>Labulla</i> sp.	Jammu & Kashmir	Caporiacco, 1935a	-
34. <i>Lepthyphantes allegrii</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Pakistan
35. <i>Lepthyphantes annulipes</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
36. <i>Lepthyphantes bhudbari</i> Tikader, 1970	Jammu & Kashmir	Khan, 2011a	Endemic
	Sikkim	Tikader, 1970	
	West Bengal	Majumder & Talukdar, 2013	
37. <i>Lepthyphantes deosaicola</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
38. <i>Lepthyphantes incertissimus</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
39. <i>Lepthyphantes leprosus</i> (Ohlert, 1865)†	Jammu & Kashmir	Punjoo & Bhat, 2015	Caucasus, Europe, Kazakhstan, North America, Russia, Turkey
40. <i>Lepthyphantes lingsoka</i> Tikader, 1970	Sikkim	Tikader, 1970	Endemic
	Kerala	Asalatha <i>et al.</i> , 2017	
	West Bengal	Majumder & Talukdar, 2013	
41. <i>Lepthyphantes nigridorsus</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
42. <i>Lepthyphantes peramplus</i> (Pickard–Cambridge, 1885), syn. <i>Linyphia perampla</i> Pickard–Cambridge, 1885	Jammu & Kashmir	Pickard–Cambridge, 1885; Caporiacco, 1935a	Endemic
	Kerala	Adarsh & Nameer, 2016; Joseph <i>et al.</i> , 2017	
	Uttar Pradesh	Uniyal & Hore, 2009	
	Kerala	Dhali <i>et al.</i> , 2019	
43. <i>Lepthyphantes rudrai</i> Tikader, 1970*	Sikkim	Tikader, 1970; Saha <i>et al.</i> , 2016	Endemic
	Uttarakhand	Biswas & Biswas, 2010	
	West Bengal	Raychaudhuri <i>et al.</i> , 2016; Saha <i>et al.</i> , 2016	

Table 1 contd.

44. <i>Lepthyphantes stramineus</i> (Pickard–Cambridge, 1885), syn. <i>Linyphia straminea</i> Pickard–Cambridge, 1885	Jammu & Kashmir	Caporiacco, 1935b	Endemic
	Kerala	Joseph <i>et al.</i> , 2017	
	Uttar Pradesh	Uniyal & Hore, 2009	
45. <i>Lepthyphantes trivittatus</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
46. <i>Lepthyphantes</i> sp.	Assam	Singh <i>et al.</i> , 2012	Endemic
	Gujarat	Yadav, 2019	
	Jammu & Kashmir	Khan, 2011b	
	Kerala	Sunil Jose <i>et al.</i> , 2008	
	West Bengal	Saha <i>et al.</i> , 2017	
47. <i>Linyphia albipunctata</i> Pickard–Cambridge, 1885, syn. <i>Lepthyphantes albipunctatus</i> (Pickard–Cambridge, 1885, misnamed by Caporiacco, 1935a)	Jammu & Kashmir	Caporiacco, 1935a	China
48. <i>Linyphia consanguinea</i> O. Pickard–Cambridge, 1885	Jammu & Kashmir	Caporiacco, 1935a	China
49. <i>Linyphia hortensis</i> Sundevall, 1830†	Karnataka	Prashanthakumara & Venkateswarlu, 2017	Caucasus, Central Asia, Europe, Iran, Kazakhstan, Russia, Turkey
50. <i>Linyphia sikkimensis</i> Tikader, 1970	Gujarat	Siliwal <i>et al.</i> , 2003; Yadav <i>et al.</i> , 2017	Endemic
	Sikkim	Tikader, 1970	
	Uttar Pradesh	Uniyal & Hore, 2009	
	Uttarakhand	Biswas & Biswas, 2010	
51. <i>Linyphia triangularis</i> (Clerck, 1757) †	Jammu & Kashmir	Punjoo & Bhat, 2015	Caucasus, China, Europe, Iran, Kazakhstan, Russia, Turkey, USA
	Karnataka	Tabasum <i>et al.</i> , 2018; Nijagal <i>et al.</i> , 2020	
52. <i>Linyphia</i> sp.	Assam	Chetia & Kalita, 2012]	-
	Gujarat	Parmar, 2018]	
	Jammu & Kashmir	Khan, 2011a, b; Punjoo & Bhat, 2015]	
	Kerala	Sebastian <i>et al.</i> , 2005b; Sunil Jose <i>et al.</i> , 2008; Dhali <i>et al.</i> , 2019]	
	Ladakh	Uniyal, 2006]	
	Rajasthan	Lawania & Trigunayat, 2015]	
	Tamil Nadu	Kapoor, 2008; Dharmaraj <i>et al.</i> , 2018]	
	Uttar Pradesh	Tandon & Lal, 1983; Hore & Uniyal, 2008]	
	Uttarakhand	Uniyal <i>et al.</i> , 2011; Gupta & Siliwal, 2012]	
53. <i>Microbathyphantes palmarius</i> (Marples, 1955)	Delhi	Tanasevitch, 2011]	Myanmar, Polynesia, Seychelles, Sri Lanka, Thailand
	Uttar Pradesh		
54. <i>Microlinyphia pusilla</i> (Sundevall, 1830), syn. <i>Linyphia pusilla</i> Sundevall, 1830	Jammu & Kashmir	Caporiacco, 1935a	Caucasus, Central Asia, China, Europe, Iran, Japan, Kazakhstan, Mongolia, North Africa, North America, Russia, Turkey
55. <i>Microlinyphia</i> sp.	Uttarakhand	Uniyal <i>et al.</i> , 2011]	Endemic
56. <i>Minicia vittata</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
57. <i>Nasoona asocialis</i> (Wunderlich, 1974), syn. <i>Gorbothorax aff. unigibbus</i> Tanasevitch, 1998	Meghalaya	Tanasevitch, 2011]	China, Indonesia, Laos, Malaysia, Myanmar, Nepal, Thailand, Vietnam
58. <i>Nasoona crucifera</i> (Thorell, 1895)	Kerala	Malamel, 2018; Domichan <i>et al.</i> , 2020]	Endemic
59. <i>Nasoona indiana</i> Tanasevitch, 2018*	West Bengal	Tanasevitch, 2018a]	Endemic
60. <i>Nasoona orissa</i> Tanasevitch, 2018	Odisha	Tanasevitch, 2018a	Endemic

Table 1 contd.

61. <i>Neriere birmanica</i> (Thorell, 1887), syn. <i>Bathyphantes kashmiricus</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a]	China, Indonesia, Laos, Myanmar
	Karnataka	Mubeen & Basavarajappa, 2018]	
	Uttarakhand	Pooja <i>et al.</i> , 2019; Siddhu <i>et al.</i> , 2020]	
62. <i>Neriere emphana</i> (Walckenaer, 1841)	Karnataka	Nijagal <i>et al.</i> , 2020	Caucasus, Central Asia, China, Europe, Iran, Japan, Kazakh- stan, Korea, Russia
63. <i>Neriere hammeni</i> (van Helsdingen, 1963)†	Kerala	Joseph <i>et al.</i> , 2017	Belgium, France, Ger- many, Netherlands
64. <i>Neriere macella</i> (Thorell, 1898)	Karnataka	Prashanthakumara & Ven- kateshwarlu, 2017	China, Indonesia, Laos, Malaysia, My- anmar, Philippines, Thailand
	Punjab	Tanasevitch, 2017a	
	Uttarakhand	Tanasevitch, 2017a	
65. <i>Neriere sundaica</i> (Simon, 1905)	Gujarat	Yadav, 2019	Indonesia
	Karnataka	Shraddha & Chaturved, 2019	
	Kerala	Asalatha <i>et al.</i> , 2017; Jose <i>et al.</i> , 2018; Dhali <i>et al.</i> , 2019	
	Maharashtra	Lanka <i>et al.</i> , 2017; Ma- heshwari <i>et al.</i> , 2018	
	Manipur	Kananbala <i>et al.</i> , 2018	
	Meghalaya	Roy <i>et al.</i> , 2017	
	Uttarakhand	Gupta & Siliwal, 2012	
	Jammu & Kashmir	Punjoo & Bhat, 2015	
66. <i>Neriere</i> sp.	Kerala	Sudhikumar <i>et al.</i> , 2005b	-
	Uttarakhand	Uniyal <i>et al.</i> , 2011	
67. <i>Oedothorax caporiaccoi</i> Roewer, 1942, syn. <i>Oedothorax dubi- us</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
68. <i>Oedothorax cornutus</i> Tanasevitch, 2015	West Bengal	Tanasevitch, 2015	Endemic
69. <i>Oedothorax cumur</i> Tanasevitch, 2015	Kerala	Joseph <i>et al.</i> , 2017	Endemic
	Tamil Nadu	Tanasevitch, 2015; Karthikeyani <i>et al.</i> , 2017	
70. <i>Oedothorax falciferoides</i> Tanase- vitch, 2015	West Bengal	Tanasevitch, 2015	Endemic
71. <i>Oedothorax globiceps</i> Thaler, 1987	Jammu & Kashmir	Thaler, 1987	Endemic
	Uttar Pradesh	Uniyal & Hore, 2009	
72. <i>Oedothorax khasi</i> Tanasevitch, 2017	Meghalaya	Tanasevitch, 2017b	Endemic
73. <i>Oedothorax kodaikanal</i> Tanasevitch, 2015	Kerala	Joseph <i>et al.</i> , 2017	Endemic
	Tamil Nadu	Tanasevitch, 2015, 2019; Karthikeyani <i>et al.</i> , 2017	
74. <i>Oedothorax lopchu</i> Tanasevitch, 2015	West Bengal	Tanasevitch, 2015	Endemic
75. <i>Oedothorax meghalaya</i> Tanasevitch, 2015	Meghalaya	Tanasevitch, 2015	Endemic
76. <i>Oedothorax paracymbialis</i> Tanase- vitch, 2015	Tamil Nadu	Tanasevitch, 2015; Karthikeyani <i>et al.</i> , 2017	Endemic
77. <i>Oedothorax paralegrandi</i> Tanase- vitch, 2016	Himachal Pradesh	Tanasevitch, 2016	Endemic
78. <i>Oedothorax rusticus</i> Tanasevitch, 2015	Tamil Nadu	Tanasevitch, 2015, 2019; Karthikeyani <i>et al.</i> , 2017	Endemic
79. <i>Oedothorax sohra</i> Tanasevitch, 2020b	Meghalaya	Tanasevitch, 2020b	Endemic
	Kerala	Tanasevitch, 2015, 2019	
80. <i>Oedothorax stylus</i> Tanasevitch, 2015	Tamil Nadu	Karthikeyani <i>et al.</i> , 2017; Caleb & Karthikeyani, 2020	Endemic
81. <i>Oedothorax unciger</i> Tanasevitch, 2020b	Meghalaya	Tanasevitch, 2020b	Endemic
82. <i>Oedothorax uncus</i> Tanasevitch, 2015	Meghalaya	Tanasevitch, 2015	Endemic
83. <i>Oedothorax villosus</i> Tanasevitch, 2015	West Bengal	Tanasevitch, 2015	Endemic

Table 1 contd.

84. <i>Oedothorax</i> sp.	Uttar Pradesh	Hore & Uniyal, 2008; Uniyal & Hore, 2009	-
85. <i>Oia sororia</i> Wunderlich, 1973	West Bengal	Tanasevitch, 2011	Nepal
86. <i>Paracymboides aduncus</i> Tanasevitch, 2011	Kerala Tamil Nadu	Tanasevitch, 2011	Endemic
87. <i>Paracymboides tibialis</i> Tanasevitch, 2011	Kerala Tamil Nadu	Tanasevitch, 2011 Tanasevitch, 2011, 2019	Endemic
88. <i>Paragonyliidiellum caliginosum</i> Wunderlich, 1973	Tamil Nadu	Tanasevitch, 2011, 2019	Nepal
89. <i>Pelecopsis indus</i> Tanasevitch, 2011	Himachal Pradesh Uttarakhand	Tanasevitch, 2011	Pakistan
90. <i>Piniphantes himalayensis</i> (Tanasevitch, 1987)	Jammu & Kashmir	Thaler, 1987	Nepal, Pakistan
91. <i>Pityohyphantes</i> sp.	Uttarakhand Himachal Pradesh	Uniyal <i>et al.</i> , 2011	-
92. <i>Scotargus pilosus</i> Simon, 1913	Uttarakhand	Tanasevitch, 2011	Europe, Algeria, Caucasus, Russia (Europe to Far East), Kazakhstan, Central Asia, Nepal
93. <i>Stemonyphantes</i> sp.	Gujarat	Solanki & Kumar, 2014	-
94. <i>Tapinocyboides bengalensis</i> Tanasevitch, 2011	West Bengal	Tanasevitch, 2011	Endemic
95. <i>Tiso incisus</i> Tanasevitch, 2011	Himachal Pradesh Uttarakhand	Tanasevitch, 2011	Pakistan
96. <i>Tiso indianus</i> Tanasevitch, 2011	West Bengal	Tanasevitch, 2011	Endemic
97. <i>Tiso megalops</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
98. <i>Troxochrota kashmirica</i> (Caporiacco, 1935), syn. <i>Troxochrus kashmiricus</i> Caporiacco, 1935	Jammu & Kashmir	Caporiacco, 1935a	Endemic
99. <i>Ummeliata insecticeps</i> (Bösenberg & Strand, 1906)	Meghalaya	Tanasevitch, 2020a	China, Japan, Korea, Laos, Russia, Taiwan, Vietnam
100. <i>Walckenaeria martensi</i> Wunderlich, 1972	West Bengal	Tanasevitch, 2011	Nepal
101. <i>Walckenaeria saetigera</i> Tanasevitch, 2011	Meghalaya	Tanasevitch, 2011	Endemic

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