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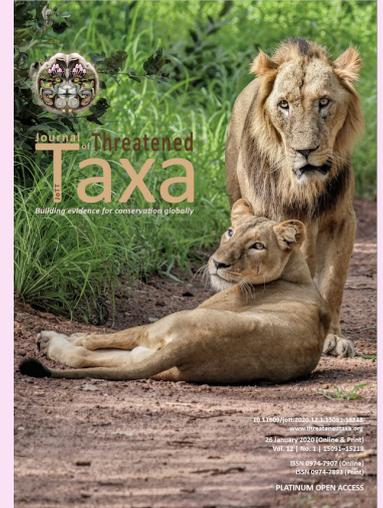
SHORT COMMUNICATION

SPIDERS (ARACHNIDA: ARANEAE) FROM THE VICINITY OF ARAABATH LAKE, CHENNAI, INDIA

John T.D. Caleb

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Spiders (Arachnida: Araneae) from the vicinity of Araabath Lake, Chennai, India

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Abstract: This study documents the spider fauna in the vicinity of a suburban lake (Araabath Lake) in Chennai. A total of 70 species of spiders belonging to 58 genera and 21 families were recorded. Seven species are endemic to India and six are endemic to India and Sri Lanka. Salticidae was the most dominant with 24 species belonging to 19 genera. Guild structure analysis revealed seven feeding guilds of which, stalkers and orb-web weavers were the dominant feeding guilds followed by ground runners and ambushers, respectively.

Keywords: Diversity, guild structure, spiders, Suburban Lake, Thirumullaivoyal.

Spiders are hyper diverse arthropods and are represented by 48,365 described species under 4,145 genera in 120 families worldwide (World Spider Catalog 2019). In India, 1,799 species under 448 genera and 59 families (World Spider Catalog 2019) are known. Not many studies have been made on the spider diversity from Chennai City (erstwhile Madras) and its suburbs except for those done in the earlier half of the 20th century by Sherriffs (1919, 1927), Gravely (1921, 1924, 1931, 1935) and one study by Phaniel in 1963.

The aim of the present paper is to present compiled information on the diversity of spiders particularly from

the surroundings of a water body called 'Araabath Lake'. Recently, several studies were conducted from the region (Caleb 2016a,b, 2017; Caleb & Mathai 2014; Caleb et al. 2015) contributing considerably to the knowledge of the group.

STUDY AREA

The study was conducted around Araabath Lake and neighboring areas during 2014–2017. The water body lies between (13.129–13.120 °N & 80.138–80.136 °E) (Figure 1). It is about 1km long and 115m wide and covers a total area of 7.75ha. The area falls under the 'Coastal Area Ecosystem' with average temperature ranging from 23–40 °C. The region receives the north-west monsoon and occasional rainfall resulting from depressions in the Bay of Bengal with a mean annual rainfall of 135cm (Raghavan & Narayan 2008).

METHODS

Spiders were collected and preserved in 70% alcohol. Specimens were photographed using a Nikon D60 DSLR camera. Adult specimens were identified up to species level with the help of available literature and keys

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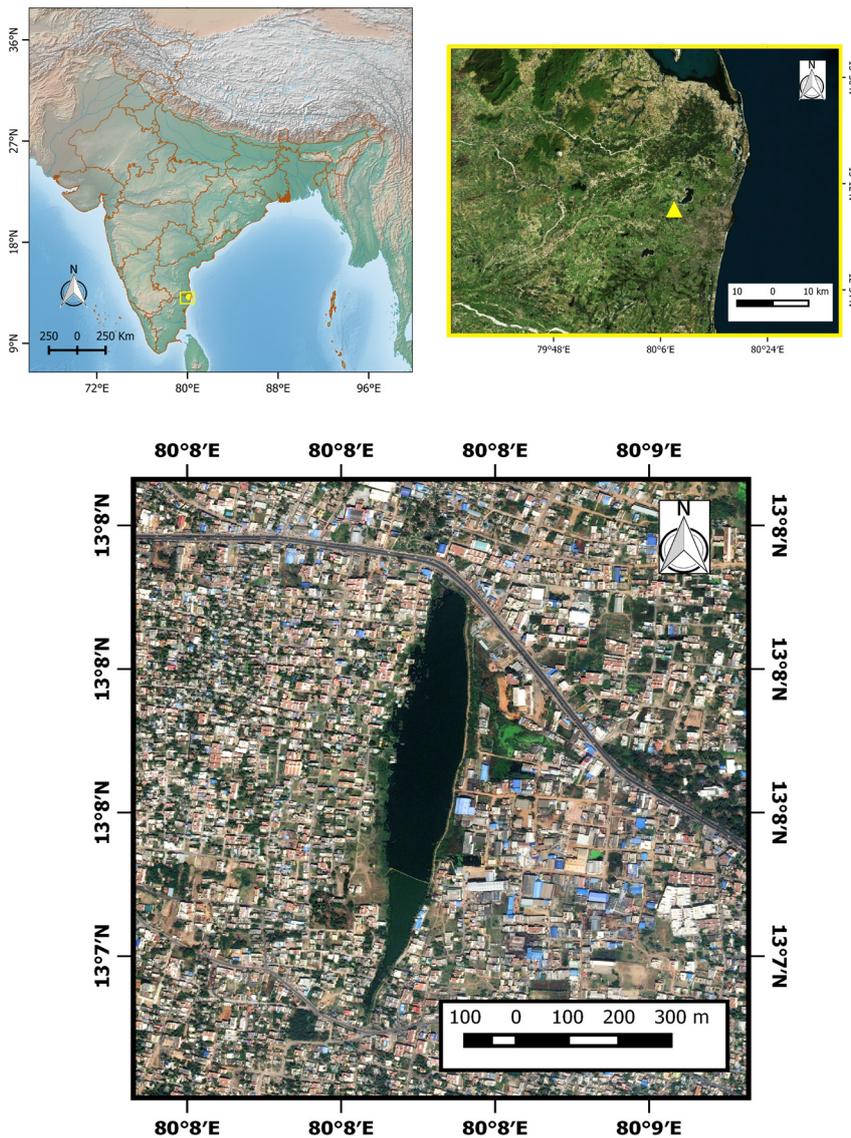


Figure 1. Location map of Araabath Lake and its neighborhood.

(Tikader & Malhotra 1980; Tikader 1982; Pocock 1901; Gravely 1921, 1924; Proszynski & Caleb 2015). The nomenclature follows the World Spider Catalog (2019).

RESULTS AND DISCUSSION

Spiders representing 21 families, 58 genera and 70 species (Table 1, Figure 3) were recorded from around Araabath lake, Thirumullaivoyal. Salticidae was the dominant family constituting 24 species under 19 genera and followed by Araneidae with 12 species under seven genera. Guild structure analysis revealed seven feeding guilds: orb-web weavers, stalkers, ground runners, foliage hunters, sheet web builders, scattered line weavers and ambushers (Table 1) (Uetz et al. 1999). Stalkers (38%) and orb-web weavers (26%) constitute the dominant feeding guild. They are followed by ground

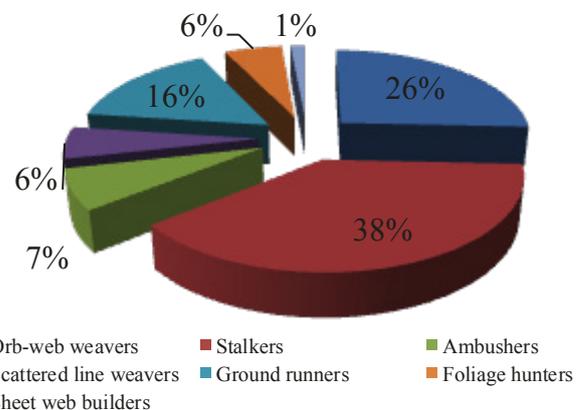


Figure 2. Guild structure of spiders collected from Araabath Lake, Chennai.

Table 1. Total number of families, genera, species composition and functional guilds of spiders from the vicinity of Araabath Lake.

	Family	No. of genera	No. of species	Guild
1	Araneidae	7	12	Orb-web weavers
2	Cheiracanthiidae	1	1	Foliage hunters
3	Clubionidae	1	1	Foliage hunters
4	Corinnidae	1	1	Ground runners
5	Ctenidae	1	1	Ground runners
6	Eresidae	1	1	Sheet web builders
7	Gnaphosidae	3	3	Ground runners
8	Hersiliidae	1	1	Ambushers
9	Idiopidae	1	1	Ground runners
10	Liocranidae	1	1	Ground runners
11	Lycosidae	4	4	Ground runners
12	Oecobiidae	1	1	Scattered line weavers
13	Oxyopidae	3	3	Stalkers
14	Philodromidae	2	2	Ambushers
15	Pholcidae	1	1	Scattered line weavers
16	Salticidae	19	24	Stalkers
17	Sparassidae	2	2	Foliage hunters
18	Tetragnathidae	3	5	Orb-web weavers
19	Theridiidae	2	2	Scattered line weavers
20	Thomisidae	2	2	Ambushers
21	Uloboridae	1	1	Orb-web weavers
	Total	58	70	

runners (16%), ambushers (7%), foliage hunters (6%), scattered line weavers (6%), sheet web builders (1%) (Figure 2). Seven of the recorded species are endemic to India and six are endemic to India and Sri Lanka (Table 2). The spider diversity is rich in this region and there is an urgent need for preserving this lake from an ecological and biodiversity perspective.

Araabath Lake is a small suburban lake located in Thirumullaivoyal, Chennai. The lake serves as a ground water reservoir and supports a wide variety of flora and fauna, including migratory birds. Anthropogenic activities like encroachment, drainage of untreated sewage, open defecation, dredging of mud for urban construction projects and utilization of the lake as a dumping ground has resulted in deterioration of habitat and water quality (Caleb pers. obs. 2017). This lake is in dire need for proper restoration, maintenance and conservation efforts.

Recent work from this region led to the discovery of three new species, *Icius alboterminus* Caleb, *Icius kumariae* Caleb and *Pellenes iva* Caleb (Caleb 2017; Caleb & Kumar 2018) along with the discovery of five species, *Aelurillus kronestedti* Azarkina, *Chrysilla volupe* (Karsch), *Curubis erratica* Simon, *Micaria dives* (Lucas) and *Myrmarachne kuwagata* Yaginuma newly recorded in India (Caleb 2016a,b, 2018; Caleb et al. 2015) and the redescription of species discovered over a century since their original description (*Curubis erratica* Simon

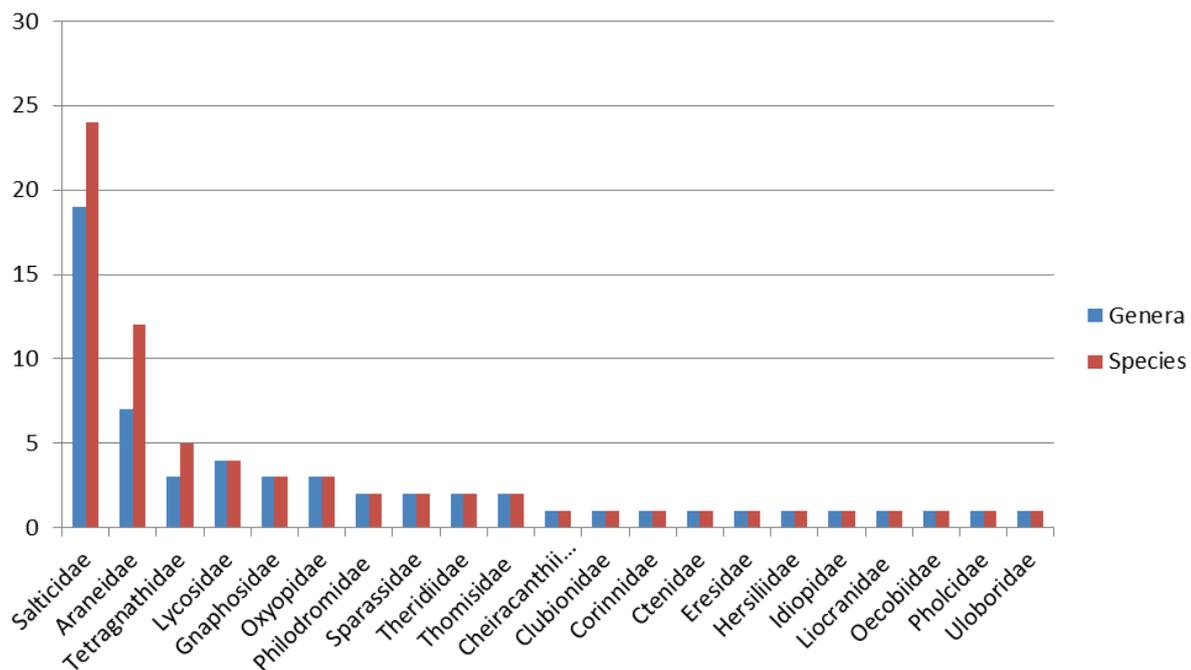


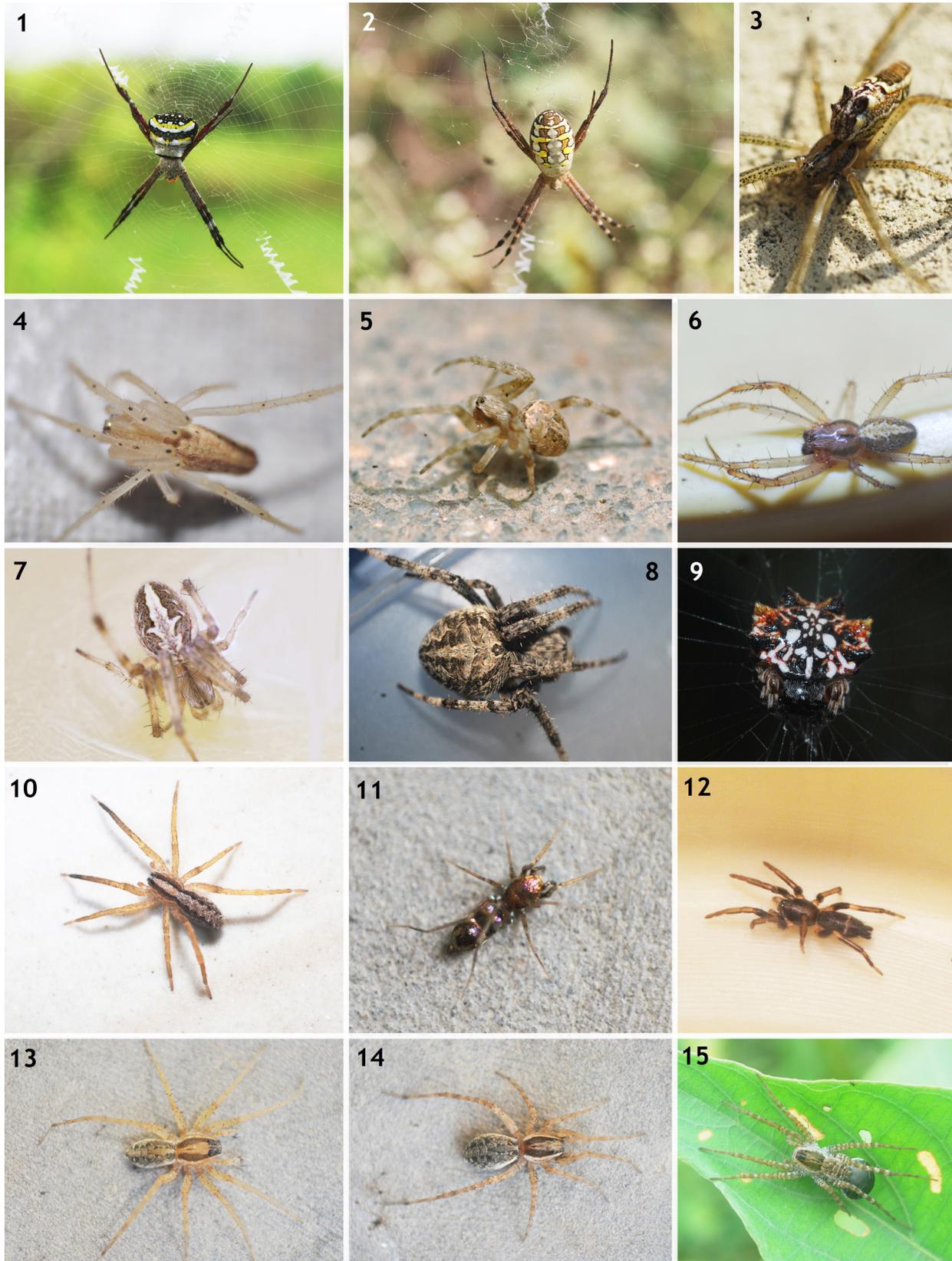
Figure 3. Diversity of spiders from Araabath Lake, Chennai.

Table 2. List of spiders collected from the vicinity of Araabath Lake.

	Family	Genus/Species
1	Araneidae	<i>Argiope aemula</i> (Walckenaer, 1841)
2		<i>Argiope pulchella</i> Thorell, 1881
3		<i>Argiope catenulata</i> (Doleschall, 1859)
4		<i>Cyrtophora cicatrosa</i> (Stoliczka 1869)
5		<i>Gasteracantha geminata</i> (Fabricius, 1798)
6		<i>Larinia</i> sp.
7		<i>Neoscona bengalensis</i> Tikader & Bal, 1981
8		<i>Neoscona nautica</i> (L. Koch, 1875)
9		<i>Neoscona theisi</i> (Walckenaer, 1841)
10		<i>Neoscona vigilans</i> (Blackwall, 1865)
11		<i>Poltys nagpurensis</i> Tikader, 1982
12		<i>Thelacantha brevispina</i> (Doleschall, 1857)
13	Cheiracanthiidae	<i>Cheiracanthium</i> sp.
14	Clubionidae	<i>Clubiona</i> sp.
15	Corinnidae	<i>Castianeira</i> sp.
16	Ctenidae	<i>Anahita</i> sp.
17	Eresidae	<i>Stegodyphus sarasinorum</i> Karsch, 1892
18	Gnaphosidae	<i>Drassodes luridus</i> (O. Pickard-Cambridge, 1874)*
19		<i>Micaria dives</i> (Lucas, 1846)
20		<i>Poecilochroa</i> sp.
21	Hersiliidae	<i>Hersilia savignyi</i> Lucas, 1836
22	Idiopidae	<i>Idiops constructor</i> (Pocock, 1900)*
23	Liocranidae	<i>Oedignatha microscutata</i> Reimoser, 1934*
24	Lycosidae	<i>Draposa lyrivulva</i> (Bösenberg & Strand, 1906)
25		<i>Hippasa greenalliae</i> (Blackwall, 1867)
26		<i>Pardosa pseudoannulata</i> (Bösenberg & Strand, 1906)
27		<i>Wadicosa fidelis</i> (O. Pickard-Cambridge, 1872)
28	Oecobiidae	<i>Oecobius putus</i> O. Pickard-Cambridge, 1876
29	Oxyopidae	<i>Oxyopes hindostanicus</i> Pocock, 1901 [#]
30		<i>Hamataliwa</i> sp.
31		<i>Peucetia viridana</i> (Stoliczka, 1869)
32	Philodromidae	<i>Philodromus</i> sp.
33		<i>Psellonus planus</i> Simon, 1897*
34	Pholcidae	<i>Crossopriza lyoni</i> (Blackwall, 1867)

	Family	Genus/Species
35	Salticidae	<i>Aelurillus kronstedti</i> Azarkina, 2004 [#]
36		<i>Bianor balius</i> Thorell, 1890
37		<i>Bristowia gandhii</i> Kanesharatnam & Benjamin, 2016 [#]
38		<i>Chrysilla volupe</i> (Karsch, 1879)
39		<i>Carrhotus viduus</i> (C.L. Koch, 1846)
40		<i>Curubis erratica</i> Simon. 1902 [#]
41		<i>Cyrba ocellata</i> (Kroneberg, 1875)
42		<i>Hasarius adansonii</i> (Audouin, 1826)
43		<i>Hyllus semicupreus</i> (Simon, 1885)
44		<i>Icius alboterminus</i> (Caleb, 2014)*
45		<i>Icius kumariae</i> Caleb, 2017*
46		<i>Menemerus bivittatus</i> (Dufour, 1831)
47		<i>Myrmarachne kuwagata</i> Yaginuma, 1969
48		<i>Myrmarachne melanocephala</i> Macleay, 1839
49		<i>Myrmarachne prava</i> (Karsch, 1880) [#]
50		<i>Myrmarachne ramuuni</i> Narayan, 1915
51		<i>Pellenes iva</i> Caleb, 2018*
52		<i>Phintella vittata</i> (C.L. Koch, 1846)
53		<i>Plexippus paykulli</i> (Audouin, 1826)
54		<i>Plexippus petersi</i> (Karsch, 1878)
55		<i>Proszynskia diatreta</i> (Simon, 1902) [#]
56		<i>Rudakius ludhianaensis</i> (Tikader, 1974)
57		<i>Telamonia dimidiata</i> (Simon, 1899)
58		<i>Thyene imperialis</i> (Rossi, 1846)
59	Sparassidae	<i>Heteropoda venatoria</i> (Linnaeus, 1767)
60		<i>Olios</i> sp.
61	Tetragnathidae	<i>Guizygiella</i> sp.
62		<i>Leucauge decorata</i> (Blackwall, 1864)
63		<i>Tetragnatha ceylonica</i> O. Pickard-Cambridge, 1869
64		<i>Tetragnatha javana</i> (Thorell, 1890)
65		<i>Tetragnatha mandibulata</i> Walckenaer, 1841
66	Theridiidae	<i>Argyrodus argentatus</i> O.P. Cambridge, 1880
67		<i>Chikunia</i> sp.
68	Thomisidae	<i>Thomisus</i> sp.
69		<i>Xysticus</i> sp.
70	Uloboridae	<i>Uloborus</i> sp.

*Endemic to India | [#] Endemic to India and Sri Lanka



Images 1–15. 1—*Argiope aemula* | 2—*Argiope catenulata* | 3—*Cyrtophora cicatrosa* | 4—*Larinia* sp. | 5—*Neoscona nautica* | 6—*Neoscona theisi* (male) | 7—*Neoscona theisi* (female) | 8—*Neoscona vigilans* | 9—*Thelacantha brevispina* | 10—*Anahita* sp. | 11—*Micaria dives* | 12—*Poecilochroa* sp. | 13—*Draposa lyrivulva* (male) | 14—*Draposa lyrivulva* (female) | 15—*Pardosa pseudoannulata*. © John Caleb.



Images 16–30. 16—*Oxyopes hindostanicus* Pocock, 1901 | 17—*Philodromus* sp. | 18—*Psellonus planus* | 19—*Aelurillus kronstedti* | 20—*Bianor balius* (male) | 21—*Bianor balius* (female) | 22—*Carrhotus viduus* (male) | 23—*Carrhotus viduus* (female) | 24—*Chrysilla volupe* | 25—*Curubis erratica* | 26—*Cyrbia ocellata* | 27—*Hasarius adansoni* | 28—*Icius alboterminus* (male) | 29—*Icius alboterminus* (female) | 30—*Icius kumariae*. © John Caleb.



Images 31–45. 31—*Myrmarachne kuwagata* | 32—*Myrmarachne melanocephala* | 33—*Myrmarachne prava* | 34—*Myrmarachne ramuuni* | 35—*Pellenes iva* | 36—*Rudakius ludhianaensis* | 37—*Telamonia dimidiata* | 38—*Thyene imperialis* | 39—*Guizygiella* sp. | 40—*Leucauge decorata* | 41—*Tetragnatha ceylonica* (male) | 42—*Tetragnatha ceylonica* (female) | 43—*Tetragnatha javana* | 44—*Tetragnatha mandibulata* (male) | 45—*Tetragnatha mandibulata* (female). © John Caleb.

and *Proszynskia diatretra* (Simon)) (Caleb & Mathai 2014; Caleb 2016a).

In view of the above mentioned remarkable discoveries from this area, restoration and management actions need to be planned to curb anthropogenic pressures affecting the lake and its surroundings. Conservation of this particular region which may harbor many more undiscovered life forms is the need of the hour. The lacuna of data for other animal groups needs to be recompensed by more extensive eco-biological studies in the region.

REFERENCES

- Caleb, J.T.D. (2016a).** A discovery and redescription of *Curubis erratica* Simon, 1902 (Araneae: Salticidae) from India. *Arthropoda Selecta* 25(2): 207–211.
- Caleb, J.T.D. (2016b).** Taxonomic notes on some ant-mimicking jumping spiders (Araneae: Salticidae) from India. *Arthropoda Selecta* 25(4): 403–420.
- Caleb, J.T.D. (2017).** Jumping spiders of the genus *Icius* Simon, 1876 (Araneae: Salticidae) from India, with a description of a new species. *Arthropoda Selecta* 26(4): 323–327.
- Caleb, J.T.D. (2018).** First record of *Micaria dives* (Lucas, 1846) (Araneae: Gnaphosidae) from India. *Indian Journal of Arachnology* 6(2017): 51–54. [publ. Feb. 2018]
- Caleb, J.T.D. & V. Kumar (2018).** *Pellenes iva* sp. n. (Araneae: Salticidae) with a distinct M-shaped central epigynal pocket from India. *Halteres* 9: 6–11.
- Caleb, J.T.D. & M.T. Mathai (2014).** Description of some interesting jumping spiders (Araneae: Salticidae) from South India. *Journal of Entomology and Zoology Studies* 2(5): 63–71.
- Caleb, J.T.D., S. Mungkung & M.T. Mathai (2015).** Four new species of jumping spider (Araneae: Salticidae: Aelurillinae) with the description of a new genus from South India. *Peckhamia* 124.1: 1–18.
- Gravely, F.H. (1921).** Some Indian spiders of the subfamily Tetragnathinae. *Records of the Indian Museum, Calcutta* 22: 423–459.
- Gravely, F.H. (1924).** Some Indian spiders of the family Lycosidae. *Records of the Indian Museum, Calcutta* 26: 587–613.
- Gravely, F.H. (1931).** Some Indian spiders of the families Ctenidae, Sparassidae, Selenopidae and Clubionidae. *Records of the Indian Museum, Calcutta* 33: 211–282.
- Gravely, F.H. (1935).** Notes on Indian mygalomorph spiders. II. *Records of the Indian Museum, Calcutta* 37: 69–84.
- Pocock, R.I. (1901).** Descriptions of some new species of spiders from British India. *Journal of the Bombay Natural History Society* 13: 478–498.
- Phanuel, G.J. (1963).** *Stegodyphus tibialis* (Cambridge) (Family Eresidae: Araneida) from Madras. *Journal of the Madras University, Section B* 33(3): 305–310.
- Prószyński J. & J.T.D. Caleb (2015).** Key to identification of Salticidae (Araneae) of the Indian Subcontinent. Online at: http://www.peckhamia.com/salticidae/index_India.html (accessed on 5 September 2019).
- Raghavan, S. & I. Narayan (2008).** Geography. In: *Madras, Chennai: A 400 year record of the first city of Modern India*, (Muthaih Eds.) Vol. 1. 1–539.
- Sherriffs, W.R. (1919).** A contribution to the study of south Indian arachnology. *Annals and Magazine of Natural History* 9(4): 220–253.
- Sherriffs, W.R. (1927).** South Indian arachnology. Part II. *Annals and Magazine of Natural History* 9(19): 533–542.
- Tikader, B.K. (1982).** Family Araneidae (=Argiopidae), typical orbweavers. *Fauna India* (Araneae) 2: 1–293.
- Tikader, B.K. & M.S. Malhotra (1980).** Lycosidae (Wolf-spiders). *Fauna India* (Araneae) 1: 248–447.
- World Spider Catalog. (2019).** World Spider Catalog. Version 20.5. Natural History Museum Bern. Online at: <http://wsc.nmbe.ch> (accessed on 05 September 2019).
- Uetz G.W., J. Halaj & A.B. Cady (1999).** Guild structure of spiders in major crops. *Journal of Arachnology* 27: 270–280.





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