



A new species of comb-footed spider from Bangladesh

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Abstract

A comb-footed spider of the genus *Theridion* Walckenaer was identified as new to science. The species was collected from village Teroshri, district Manikganj, Bangladesh. Taxonomic description of the species together with its generic diagnosis and distribution are presented here.

Keywords: Comb-footed spider, *Theridion*, Araneae, Theridiidae, Theridinae

Introduction

Comb-footed spiders are members of the family Theridiidae, a group of small sized, colorful spiders' majority of which are parasitic on the webs of araneid spiders. These are commonly found in the garden and forests of Bangladesh. These spiders are cosmopolitan in distribution but majority of the species are found in the tropical and subtropical regions of the world. The family is a large with widespread members and at present it contains a total of 3028 species belonging to 124 genera in the world fauna (World Spider Catalog 2025, Mikhailov 1997, Buchar and Ruzicka 2002). In the Indian Subcontinent, this number is very poor and till date, total 76 species under 26 genera in India (Tikader 1963, Tikader 1970, Patel 1973, Keswani *et al.* 2012) and only 10 species under 6 genera are recorded in Bangladesh (Chowdhury and Nagari 1981, Chowdhury and Pal 1984, Okuma *et al.* 1993, Biswas 2009, 2019, 2021). But in other Asian countries, these numbers are satisfactory, viz. in China (Chen and Zhang 1991, Zhao 1993, Zhu 1998, Song *et al.* 1999), Japan (Yaginuma 1986, Yoshida 1993, 2003, Malayasia (Murphy and Murphy 2000), Singapore (Koh 1989), the Philippines (Barrion and Litsinger 1995), Israel (Levy 1998, Levy and Amitai 1982) etc.

Members of the genus *Theridion* Walckenaer are widely distributed worldwide. These are commonly found in the gardens, forests and crop-fields in Bangladesh. The genus is cosmopolitan and was first established by Walckenaer in 1805 with the type-species *Aranea picta* and till date, it

contains a total of about 600 species throughout the world (World Spider Catalog 2025).

Spiders of the genus *Theridion* are one of the potential predators and help in biological pest control of some insect pests of garden and field-crops. Considering both the taxonomic and economic importance of these spiders, the present study was undertaken to know their taxonomic position, diversity and distribution in different places of the country. The present paper represents an illustrated description of a new species *Theridion teroshriensis* n. sp. collected from Teroshri College campus under Manikganj district of Bangladesh, together with its generic diagnosis and distribution.

Materials and methods

Collection and preservation: The specimens were collected by hand from the webs of araneid spiders and from the shrubs by jarking on the inverted umbrella placed underneath the plants. Collected specimens after paralyzing in the jar with chloroform are preserved in 70% ethyl alcohol temporarily for identification.

Identification and deposition: The specimens thus preserve, were identified following different books and literatures of home and abroad. Some of those are– Tikader (1963, 1970, 1987), Levi (1963), Levi and Levi (1962), Barrion and Litsinger (1995), Zhu (1998), Yoshida (2003), Song *et al.* (1999), Okuma *et al.* (1993), Yaginuma (1986) and Levy (1998).

Dissection and study: Taxonomically important body-parts of specimens were dissected out under the Stereo zoom Binocular Microscope placed on a alcohol filled petri dish. Female epigynum after dissected placed in clove oil for 12-18 hours (Levi 1965, Tikader 1987). After dissection, the female epigynum placed in separate micro-vials and later put it in a large vial along with the parent spider within audemans' Preservatives.

Illustration and photograph: Body of spider and its different body-parts were illustrated with Camera lucida under a Stereozoom Binocular Microscope. Leg measurements were taken in the following sequences: femur, patella, tibia, metatarsus, tarsus and total length. All measurements were taken in millimeters (mm).

Results and discussion

Systematics

Family: THERIDIIDAE Sundevall, 1833

Subfamily: Theridinae Sundevall, 1833

Genus: *Theridion* Walckenaer, 1805

Type-species: *Aranea picta* Walckenaer, 1802

1805. *Theridion* Walckenaer, *Tabl. Araneides*: 72.

1895. *Theridion* : Simon, *Hist. Nat. Araignees*, 1: 550.

1942. *Theridion* : Roewer, *Catalog der Araneae*, 1: 459.

1948. *Theridion* : Kaston, *Bull. Conn. St. Geol. Nat. Hist. Surv.*, 70: 100.

1963. *Theridion* : Levi, *Bull. Mus. Comp. Zool. Harv.*, 129 (10): 483.

1965. *Theridion* : Comstock, *The Spider Book*: 359.

1970. *Theridion* : Tikader, *Rec. zool. Surv. India*, 64 (1-4): 8.

1986. *Theridion* : Yaginuma, *Spiders of Japan in color*: 34.

1991. *Theridion* : Chen & Zhang, *Fauna of Zhejiang, Araneida*: 154.

1993. *Theridion* : Zhao, *Spiders of cotton fields in China*: 219.

1995. *Theridion* : Barrion & Litsinger, *Riceland spiders South & S. east Asia*: 441.

1997. *Theridion* : Platnick, *Advances in Spider Taxonomy*: 289.

1997. *Theridion* : Mikhailov, *Cat. Spiders of former Soviet Union*: 40.

1998. *Theridion* : Zhu, *Fauna Sinica, Araneae, Theridiidae*: 119.

1999. *Theridion* : Song *et al.*, *The Spiders of China*: 137.

2004. *Theridion* : Majumder, *Mem. Zool. Surv. India*, 20 (2): 41.

2006. *Theridion* : Platnick, *World Spider Catalog*, Version 6.5: 829.

2009. *Theridion* : Biswas, *Encycl. flora & fauna of Bangladesh*,

18 (1): 343.

2019. *Theridion* : *World Spider Catalog*, Version 19.5, Nat. Hist. Mus. Bern.,

<http://www.wsc.nmbe.ch> (accessed 17th Jan., 2019).

2021. *Theridion* : Biswas & Uddin, *J. Noakhali Govt. College*, 1 (1): 7.

2025. *Theridion* : *World Spider Catalog*, Version 25.0, Nat. Hist. Mus. Bern.,

<http://www.wsc.nmbe.ch> (accessed on 14th Feb., 2025).

Diagnosis: Spiders of this genus are small in size. Cephalothorax oval or nearly so, flat. Anteromedian eyes equal to or smaller than posteromedians; lateral eyes contiguous. Chelicerae usually weak, sometimes larger. Sternum rounded, projecting almost up to coxae IV, narrower in smaller species and more narrowly rounded (Kaston 1948). Legs relatively long and slender clothed with sharp spines.

Abdomen oval, globular in female, sometimes triangular but in male, it is narrower.

Biological note: These spiders are usually found on their own small webs but some members are parasitic on the webs of other spiders of the family Araneidae. They are usually found to move on the foliages of plants on the garden and crop-fields. These are good predators of small insect pests in the crop-fields and gardens.

Distribution: Asia; Africa; America; Europe And Australia.

Description of the species

1. *Theridion teroshriensis* n. sp. (Figs. 1a–1e; 2a)

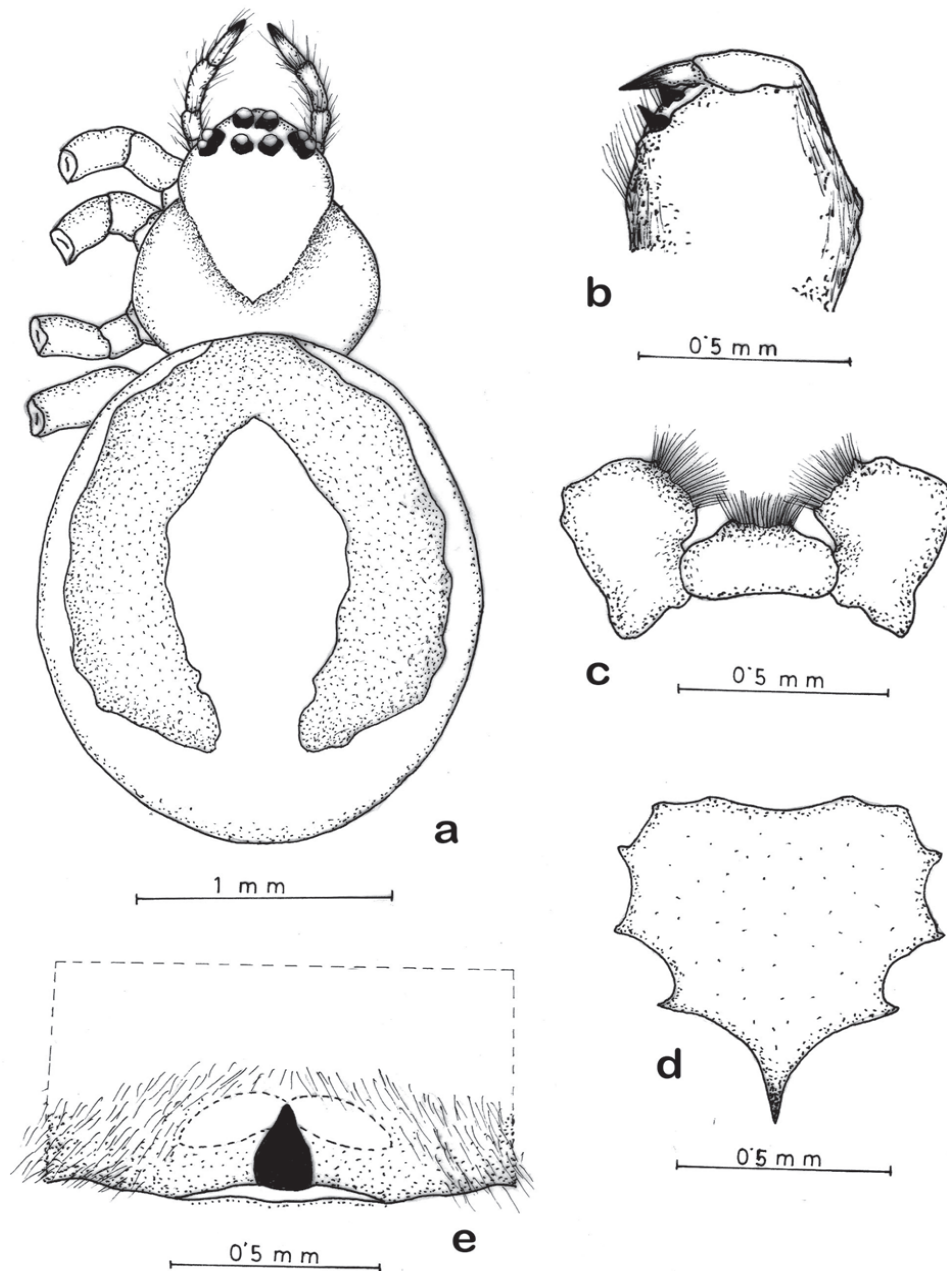
Material examined: 1 female (Holotype), Teroshri College campus, District Manikganj, 18.05.1992, Coll. V. Biswas. 1 female (Paratype), Agricultural Diploma Institute campus, Faridpur, 12.X.1993, Coll. V. Biswas.

General: Body small, light brown in color. Cephalothorax and legs brown, abdomen dirty-white. Total body length 3.80 mm. Carapace 1.50 mm long, 1.50 mm wide; abdomen 2.60 mm long and 2.40 mm wide with nearly equal width.

Cephalothorax: Broad, longer than wide, marginally constricted; cephalic region raised. Eyes pearly- white, equal, ringed with black basal band; lateral eye close; anterior row of eyes recurved and posterior row nearly

Table 1. Measurements (mm) of leg segments of *T. teroshriensis* n. sp.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.20/1.20	0.40/0.40	0.90/0.90	0.90/0.90	0.40/0.40	3.80/3.80
II	1.00/1.00	0.30/0.30	0.80/0.80	0.80/0.80	0.30/0.30	3.20/3.20
III	0.90/0.90	0.30/0.30	0.70/0.70	0.60/0.60	0.30/0.30	2.80/2.80
IV	1.30/1.30	0.50/0.50	0.90/0.90	1.00/1.00	0.50/0.50	4.20/4.20

**Figure 1 (a-e): *Theridion teroshriensis* n. sp. a. Whole body (dorsal view); b. Chelicerae; c. Maxillae and Labium; d. Sternum; e. Female epigynum.**

straight; cervical furrows deeply distinct; thoracic broad, marginally rounded (Fig. 1a). Chelicerae brown, little longer than wide, each of inner and outer margins with 1 tooth (Fig. 1b). Maxillae brown, longer than wide, anteriorly broad and scopulate (Fig. 1c). Labium brown, wider than long, anteriorly scopulate (Fig. 1c). Sternum nearly apple-shaped, posteriorly narrowed and pointed (Fig. 1d). Legs long and slender; leg formula 4123 and the measurements (in mm) are shown in Table 1.

Abdomen: Broadly oval, posteriorly wide, dorsum decorated with blackish longitudinal band; ventrally pale; epigynum as in fig. 1e.

Male: Unknown.

Holotype: Female in spirit.

Paratype: Female in spirit (otherwise data same as for the holotype).

Etymology: The species is named after the name of the type-locality from where the holotype was collected for study.

Distribution: Bangladesh: Manikganj and Faridpur. A whole body dorsal view of the *T. teroshriensis* n. sp. is given Figure 2.

Remarks: The species *T. teroshriensis* n. sp. does not show any similarity to its Indian congeners. However, it shows a little similarity with *T. majdiensis* Biswas & Uddin (Biswas & Uddin 2021) in general appearance and structure of maxillae and labium but it stands distinct in having the following important characters –

- Structure of cephalothorax and abdominal decoration much different.
- Presence of only 1 tooth on each cheliceral margin.
- Sternum and legs are much different in structure and decoration and
- Structure of epigynum much different with that of *T. majdiensis* Biswas & Uddin.

Considering the above-mentioned characters of the present species, it may conclude that this species is with distinct and specialized characters. Therefore, the species,



Figure 2. *Theridion teroshriensis* n. sp. (Whole body dorsal view).

is described as new to science.

Conclusion

In the taxonomic history of the study of spiders of Bangladesh (Chowdhury and Nagar 1981, Chowdhury and Pal 1984, Okuma *et al.* 1993, Biswas 1995, 2009, 2019, 2021, Begum and Biswas 1997), it is found that studies on the comb-footed spiders (family Theridiidae) are very poorly known and the present study is the second record in the study of theridiids (after Biswas and Uddin 2021) of Bangladesh. In this study, it is observed that there are some marked differences exist in the present species with those of the previous ones.

But there are many similarities found in the biology and behavior with the previous ones. For example— all these are potential predators of small insect pests of fields and gardens crops. The preying of both present and previous ones took place on the plant leaves and webs where they stay. Therefore, all these web-inhabiting members are called ‘*kleptoparasitic species*’ or the kleptoparasites of the web-building spiders (Araneidae). But all these species are helping in the biological pest management system of garden, forests and field-crops.

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