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A new species of ant-mimicking jumping spider genus *Myrmarachne* MacLeay, 1839 (Araneae: Salticidae: Myrmarachninae) from southwest region of Bangladesh

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Abstract

Taxonomic account of the ant-mimicking jumping spider *Myrmarachne ovalis* **n. sp.** is included. It belongs to the genus *Myrmarachne* MacLeay, 1839 under the family Salticidae. Illustrated description of the new species together with the generic diagnosis and distribution are also provided.

Keywords: New species, jumping spider, *Myrmarachne,* Araneae, Salticidae, Myrmarachninae, Bangladesh.

Introduction

The ant-mimicking jumping spider genus *Myrmarachne* are attractive due to their ant-like appearance and mimicry. They are commonly found on plant foliages, body surface of trees and nests of red-ants in the garden and forests. These spiders are widely distributed worldwide with majority are Oriental preferring to the warm climate. The genus was first established by MacLeay in 1839 with the type-species *M. melanocephala* MacLeay, 1939. The genus at present, encomposes 194 valid species worldwide (World Spider Catalog 2026) of which only 8 species have documented in Bangladesh (Okuma *et al.* 1993; Biswas 2009, 2019, 2025; Biswas and Raychaudhury 2017, 2018a, 2018b) and 27 species in India (Narayan 1915; Tikader 1973; Proszynski 1992; Caleb 2016; Caleb and Benjamin 2017; Caleb and Joseph 2025; Keswani *et al*. 2012; Bradoo 1980; Sadana and Gupta 1998) but majority are distributed in other Asian countries (Yaginuma 1986; Yamasaki 2010; Yamasaki and Ahmad 2013; Yamasaki and Edwards 2013; Proszynski 1990; Zabka 1985; Barrion and Litsinger 1995; Chen and Zhang 1991; Xiao 2002; Peng 2020). Present paper contains detailed taxonomic account of the new species *Myrmarachne ovalis* n. sp. from district Jhenaidah, southwest region of Bangladesh with its generic diagnosis and distribution.

Materials and methods

Collection and preservation: The specimen was collected from Jhenaidah, southwestern part of Bangladesh by hand vials from the leaves and by jarking the branches of shrubs on an inverted umbrella placed underneath the plants. Collected specimens are placed in 70% ethanol after sorting for identification. After identification, each specimen were preserved in Audmans' Preservatives following Lincoln and Sheals (1985).

Identification and deposition: The specimens thus preserved, were identified consulting the following books and literatures: Narayan (1915), Tikader (1973, 1987), Wanless (1978), Proszynski (1992), Okuma *et al*. (1993), Barrion and Litsinger (1995), Fuhn and Gherasim (1995), Biswas (2009, 2025), Peng (2020), Yamasaki (2010), Yamasaki and Ahmad (2013), Yamasaki and Edwards (2013), Caleb (2016) and Zabka (1985).

The preserved specimens are currently in the department of Zoology, Khulna Government Womens' College, Khulna Bangladesh and will be deposited to the Department of Zoology, University of Dhaka, Bangladesh, in due course of time.

Dissection and illustrations: Taxonomically important body-parts of were dissected out under the Stereozoom Binocular Microscope placed on an alcohol filled petridish. Male palps were boiled in 10% KOH for 3-5 minutes for clearing its different parts following Tikader (1987).

Whole body of spider and its different 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 are taken in millimeters (mm).

Results and discussion

Systematics

Family: Salticidae Blackwall, 1841

Division: Pleurodentati Simon, 1901

Subfamily: Myrmarachninae Proszynski, 1971

Tribe: Myrmarachnini Maddison, 2015

Genus: *Myrmarachne* MacLeay, 1839

Type-species: *M. melanocephala* MacLeay, 1839

1839. *Myrmarachne* MacLeay, Ann. Mag, Nat. Hiost., 2: 10

Simon, 1901: 504; Narayan, 1915: 396; Dyal, 1935: 219; Kaston, 1948: 449; Rower, 1954: 939;

Bonnet, 1957: 2997; Galiano, 1969: 107; Tikader, 1973: 59; Wanless, 1978: 18; Zabka, 1985: 242; Yaginuma, 1986: 242; Proszynski, 1990: 226: Chen & Zhang, 1991: 509; Platnick, 1993: 782; Peng *et al.,* 1993: 129; Okuma *et al*., 1993: 90; Barrion & Litsinger, 1995: 50; Fuhn & Gherasim, 1995: 258; Mikhailov, 1997: 215 ; Song *et al.,* 1999: 535; Cho & Kim, 2002: 109; Majumder, 2005: 48; Ono *et al.,* 2009: 565; Biswas, 2009: 278; Proszynski & Deelman-Reinhold, 2010: 162; Proszynski, 2012: 312; Yamasaki & Ahmad, 2013: 501; Hill & Otto, 2015: 1; Benjamin, 2015: 2609; Caleb, 2016: 403; Tam et al., 2024: 1; World Spider Catalog, 2026.

Diagnosis: Body of this spider are long, narrow, ant-like, small to medium in size. Cephalothorax usually long, constricted, in some totally segmented, hairy, with one or two pairs of trichobothria. Eyes brown, dissimilar, anterior row recurved, contiguous or sub-contiguous; middle row in between the anterolateral and posterolateral eyes; posterior row equal or something wider than anterior row; ocular trapezium roughly squarish. Chelicerae long or in few short, with 4-7 teeth on inner and 5-8 teeth on outer margin; in male, strongly developed, elongate, with or without numerous teeth on the margins. Maxillae elongate, rarely with median keel. Sternum variable, usually elongate and pointed posterior5ly. Legs usually long and slender; femora I sometimes dorsoventrally enlarged and laterally compressed; leg formula 4132, ventral spines present on leg I and II.

Abdomen variable, usually elongate, in some constricted. Epigyne comparatively simple and with distinct openings separated by poorly developed septum; spermathecae simple, twisted or looped, rarely coiled.

Biological note: Spiders of the genus *Myrmarachne* are commonly known as ‘ant-like’ or ‘ant-mimicking spiders.’ These are usually found on the plant leaves and body surface of trees or surfaces of wall of houses. Some members are found in association with the red-ants in their nests and appear a good example of mimicry (which is called ‘batesonian mimicry’). They do not spin any web but during breeding season, they construct a typical tubular nest by folding plant leaves. They are one of the important predators of garden and forest insect pests.

Distribution: Oriental and Sub-tropical regions of the world.

Description

***Myrmarachne ovalis* n. sp.** (Figs. 1a – 2g; Figs. 3a -3b)

Material examined: 1 male (Holotype), Shikerpur, District jhenaidah, 14.04.2025, Coll. V. Biswas; 2 males (Paratype), otherwise data same as for the holotype, 27.04.2025, Coll. V. Biswas.

General (Holotype): Cephalothorax long, black, segmented/constricted medially; legs yellowish-brown with dark brown banhds; abdomen blackish-brown with a curved yellow transverse band. Total body length 6.00 mm. Carapace 2.20 mm long, 1.80 mm wide; abdomen 3.80 mm long and 2.30 mm wide.

Cephalothorax: Long, black with cephalic region broader, longer than wide, deeply constricted medially which divides to 2 unequal segments (Fig. 1a); outer or cephalic part broader, elevated and nearly tetrangular. Eyes deep black, arranged in 3 rows, anterior row little recurved with anteromedians larger than others; posterior median row of eyes smaller and the posterior lateral eyes medium in size. Ocular quad wider than long. Thoracic part comparatively smaller, nearly tetrangular, connected posteriorly with a

Table 1. Measurements (mm) of leg segments of *Myrmarachne ovalis* n. sp

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	0.70/0.70	0.25/0.25	0.50/0.50	0.40/0.40	0.30/0.30	2.15/2.15
II	0.70/0.70	0.25/0.25	0.40/0.40	0.30/0.30	0.20/0.20	1.85/1.85
III	0.65/0.65	0.25/0.25	0.35/0.35	0.30/0.30	0.20/0.20	1.75/1.75
IV	0.80/0.80	0.30/0.30	0.60/0.60	0.40/0.40	0.30/0.30	2.40/2.40

Male palp broad, with distinct cymbium, tegulum and embolus deep brown (Figs. 2f-g).

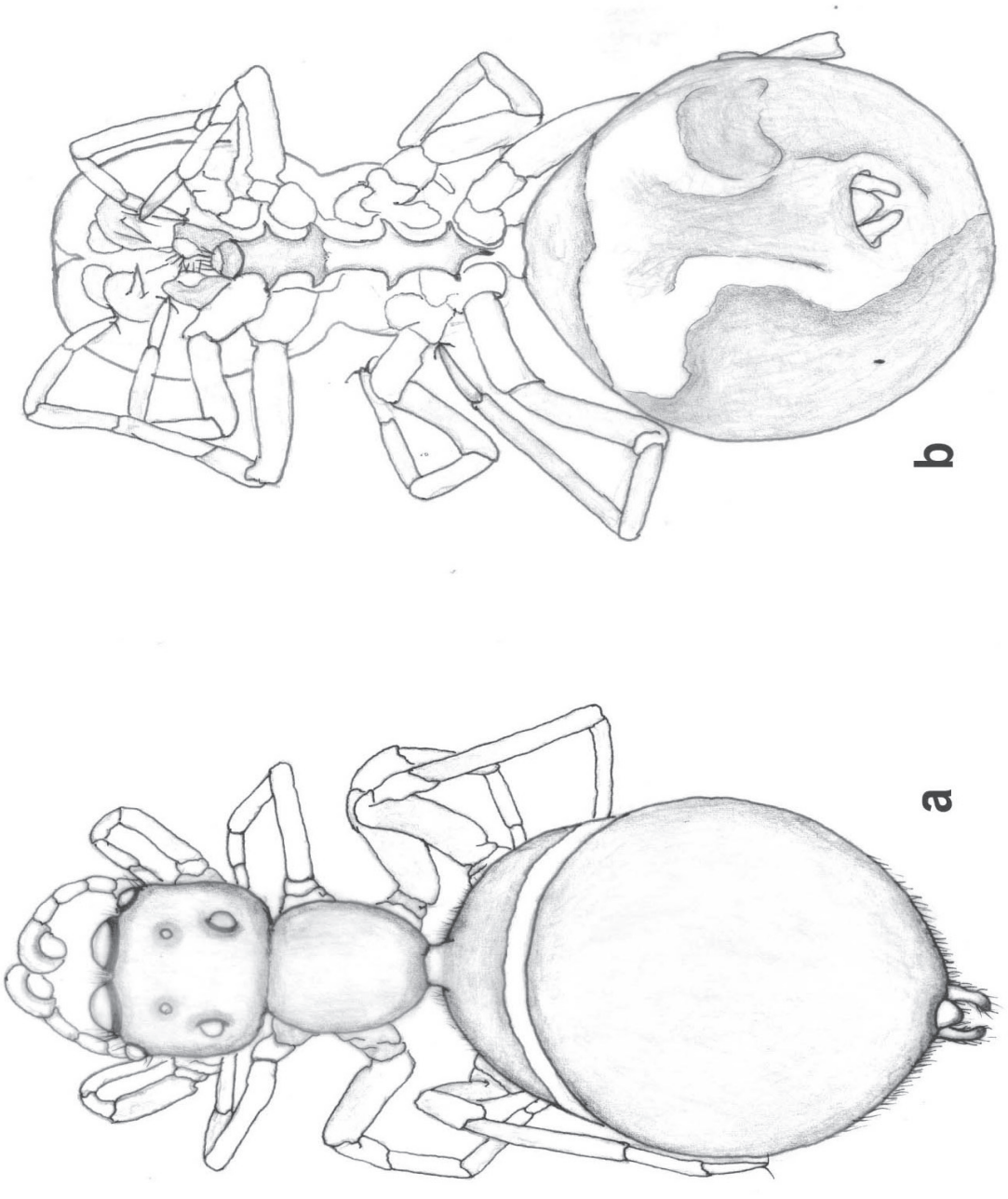


Figure 1. *Myrmarachne ovalis* n. sp whole body (a) Dorsal view; (b) Ventral view.

small tubular pedicel. Chelicerae black, longer than wide, inner and outer margins with 1 and 2 teeth respectively (Fig. 2c). Maxillae brown, long, anteriorly scopulate (Fig. 2d). Labium basally brown, anteriorly light yellow, wider than long, anteriorly scopulate (Fig. 2d). Sternum long, brown, anteriorly deep and concave marginally, posteriorly narrowing and pointed (Fig. 2e). Legs long and slender, each of leg-I, III and IV with deep brown bands on the basal segments. Leg formula 4123 and the measurements (in mm) are as shown in Table-1.

Abdomen: Broad, nearly oval, posteriorly wide, anteriorly

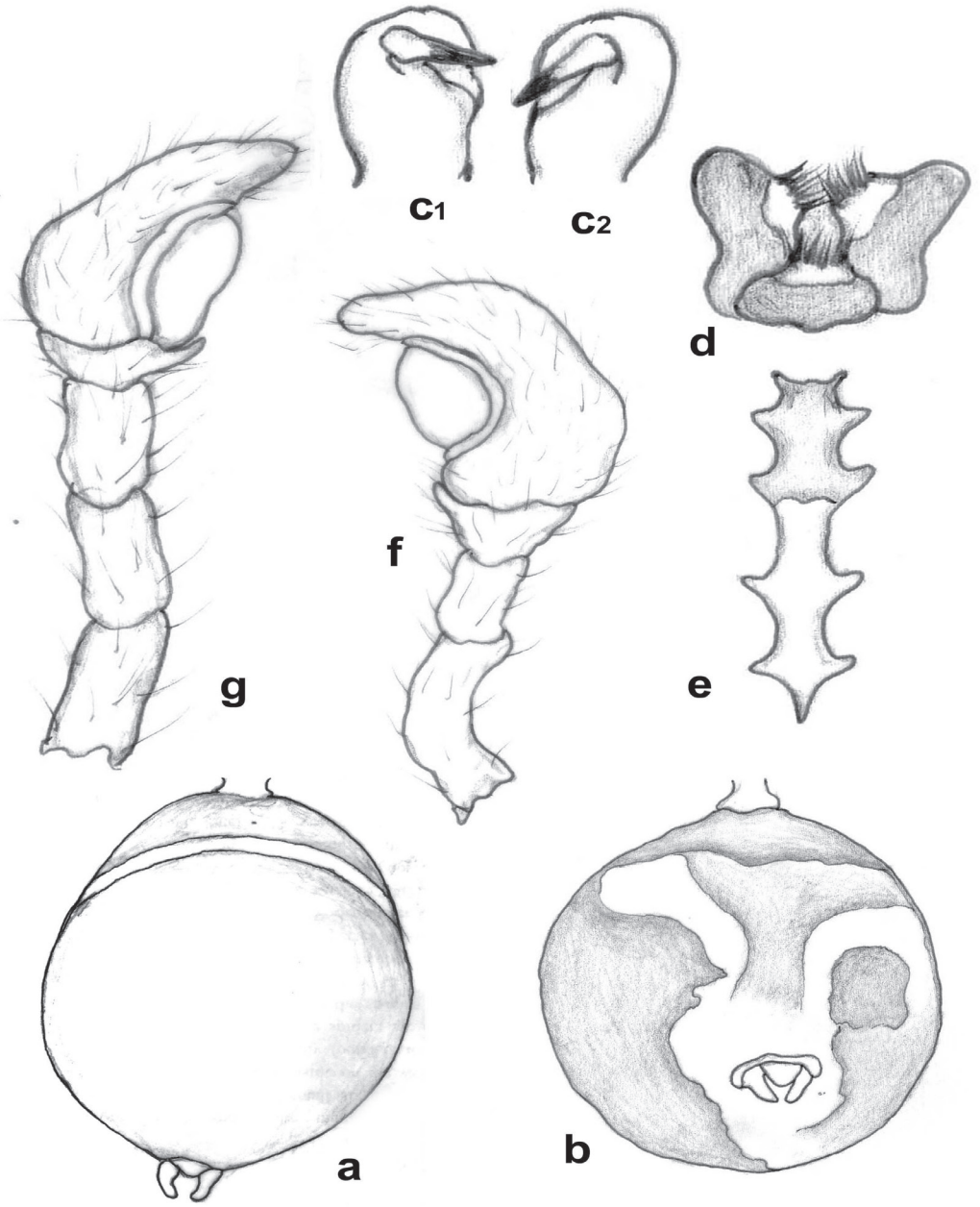


Figure 2. ***Myrmarachne ovalis*** **n. sp. (a) Abdomen (dorsal view); (b) Abdomen (Ventral view); (c1-c2) Chelicerae; (d) Maxillae and labium; (e) Sternum; (f) Male palp (lateral view); (g) Male palp (Ventral view).**

little narrowing with a light transverse band (Fig. 1a); ventrally light yellow on anterior 1/4th but deep brown on posterior 3/4th part. Spinnerets short, nearly equal.

Male (Holotype): One male in spirit.

Paratype: 2 males in spirit.

Type-locality: Mango garden, Village- South Shikerpur, District- Jhenaidah, Bangladesh.

Etymology: The species is named for the oval shape of abdomen.

Distribution: Bangladesh (district Jhenaidah).

Remarks: The present species *M. ovalis* **n. sp.** does not show any distinct similarity to its congeners of the neighboring countries. However, it shows a little similarity with *M. poonaensis* Tikader, 1973 (Tikader 1973) in

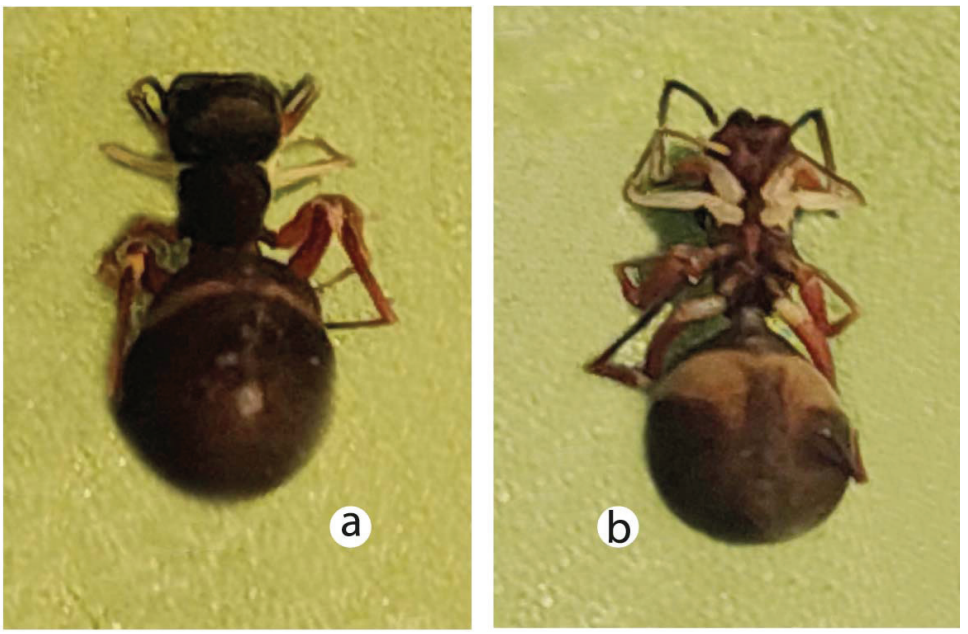


Figure 3. Myrmarachne ovalis n. sp (natural view). (a) Dorsal view; (b) Ventral view.

general appearance but it stands distinct in having the following important characters:

1. Abdominal shape colour and decoration different.
2. Cheliceral fang short and without series of marginal teeth (Fig. 2c).
3. Structure of maxillae, labium and sternum different (Figs. 2d-2e).
4. Structure of male palps different (Figs. 2f-2g).

The species also differes with other neighbours and known species from elsewhere (Zabka 1985; Proszynski 1992; Okuma *et al. 1993*; Yamasaki & Ahmad 2013; Yamasaki & Edwards 2013; Biswas 2025; Biswas & Raychaudhuri 2017, 2018a, b; Peng 2020).

Considering the above important characters, it may conclude that the present species *M. ovalis* n. sp. is distinct with specialized characters. Therefore, the species, is described as new to science.

Type-deposition: The types of this study are at present in the collection of the Department of Zoology, Khulna Government Womens' College, Khulna and will be deposited to the Museum of the Department of Zoology, University of Dhaka, Bangladesh, in due course of time.

Conclusion

In the taxonomic history of Bangladesh, study on the ant-mimicking spiders is very poorly known. So far, the literature concerned, till date, only 9 (nine) species are recorded and described in this country including the present new species *M. ovalis* n. sp. But none of the previously described species are similar in characters

(viz- chelicerae, pedipalp, maxillae, labium etc.) with the present one. Therefore, it is proved that the present species is identified and described as new to science. It was also observed that this species is non- orb-weaver i.e. it cannot make any web but are predatory in habit. They consume their insects' preys (foods) from plant leaves or from the nests of red ants by showing a peculiar mimicry (called Batesonian mimicry). Thus, they play a significant role in the control of garden and forest insect pests. So, a detail study on the food and feeding habits of these spiders may open a new field/era in the biological pest management system.

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