

ORB-WEAVING SIDERS OF BANGLADESH-I : GENUS *ARANEUS* CLERCK (ARANEAE : ARANEIDAE) WITH TWO NEW SPECIES

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INTRODUCTION

Spiders of the genus *Araneus* are very little known from Bangladesh. The genus was first established by Clerck (1757) with the type-species *A. angulatus*. Thorell (1895) first reported the genus with only two species from Burma the then British India. Later Pocock (1900) recorded 11 species from Indian Sub-continent. Patel (1975), Tikader (1970, '82), Tikader and Biswas (1981), Tikader and Bal (1981) made numerous contributions of different species from different parts of India. In Bangladesh, Chowdhury and Pal (1984), first recorded only one species from Chittagong and Begum and Biswas (1997) from Barisal. The present paper composed of two species namely *A. mitifica* and *A. rumiae*. Of these, *A. rumiae* is described as new to science.

The types are at present in the collection of the Department of Zoology, Government P.C. College, Bagerhat and will be deposited to the Museum of the Department of Zoology, University of Dhaka, Bangladesh, in due course of time.

SYSTEMATICS

Genus : *Araneus* Clerck, 1757

1757. *Araneus* Clerck, *Argn. Suec.*, :15.
1805. *Epeira* : Walckenaer, *Tableau des Araneides*, : 53.
1837. *Atea* : C.L. Koch, *Uebersicht des Arachnidensystems*, 1:3.

1864. *Neopora* : Simon, *Hist. Nat. des Araign.*, ed., I: 261.
1893. *Burgessia* : Mc Cook, *Amer. Spid.*, 3:182.
1895. *Araneus* : Simon, *Hist. Nat. Araign.*, 1(4): 829.
1900. *Araneus* : Pocock, *Fauna Brit. India, Arachn.*, : 227.
1935. *Araneus* : Dyal, *Bull. Dept. Zool. Panjab Univ.*, :177.
1951. *Conepeira* : Archer, *Am. Mus. Novit.*, 1487: 12.
1960. *Araneus* : Yaginuma, *Spiders of Japan in colour*, : 51-55.
1970. *Araneus* : Tikader, *Rec. zool. Surv. India*, 64(1-4): 30.
1971. *Araneus* : Levi, *Bull. Mus. Comp. Zool. Harv.*, 145(9): 473.
1991. *Araneus* : Chen & Zhang, *Fauna of Zhejiang, Araneida*, :85.
1995. *Araneus* : Barrion & Litsinger, *Riceland spid. South & S.E. Asia*, : 631.
1997. *Araneus* : Yin, et al., *Fauna Sinica, Araneae : Araneidae*: 123.
1999. *Araneus* : Song, et al., *Spiders of China*, : 236.
2004. *Araneus* : Majumder, *Mem. Zool. Surv. India*, 20(2): 11.
2005. *Araneus* : Majumder, *Mem. Zool. Surv. India*, 20(3): 5.
2006. *Araneus* : Platnick, *World Spider Catalogue*, Version 6.5:
2009. *Araneus* : Biswas : In Ahmed (ed.), *Encyclopedia of Flora & Fauna of Bangladesh, Arachnida* 18(1): 129.

Diagnosis : Spiders of this genus are medium in size. Cephalothorax oval, moderately high, convex with no horny outgrowth; thoracic groove conspicuous, transverse in female, but longitudinal in male having lateral prolongations. Eyes unequal, medians forming a quad, laterals

close and situated on prominent tubercles; both rows of eyes recurved; ocular quad forming a trapezium. Chelicerae short, with dissimilar teeth. Maxillae and labium short and scopulate anteriorly. Sternum variable, clothed with hairs and spines. Legs long and slender; male with hook on coxa I and groove on femur II ; tibia II armed with spines. Male palpus with terminal apophysis.

Abdomen broad, rounded or oval; epigyne with a prominent scape which may be long or short and straight ; epigynal openings situated in the grooves at base.

Type genus: *Araneus angulatus* Clerck.

Distribution: Cosmopolitan.

Key to the species

1. Abdomen with scaly reticulation (fig. 1); sternum triangular (fig. 4); each of inner and outer margins of chelicerae with 2 teeth (fig. 2) ; clypeus convex, never tuberculate; epigyne and internal genitalia as in figs. 5 and 6.....*mitifica*
- Abdomen never with scaly reticulation (fig. 8); sternum broadly heart-shaped; inner and outer margins of chelicerae with 3 and 1 teeth respectively (fig. 9); clypeus tuberculate; epigyne as in fig. 12.....*rumiae* n. sp.

1. *Araneus mitifica* Simon (Figs. 1-7)

1886. *Epeira mitifica* Simon, *Act. Soc. Linn., Bordeaux*, **40**:150.
1887. *Epeira mitifica* : Thorell, *Annali. Mus. civ. Genova*, **25**:187.
1896. *Epeira mitifica* : Workman, *Malays. Spid.*, : 39.
1906. *Araneus mitifica* : Baesenberg & Strand, *Abh. senekenb. naturforsch. Ges.*, **39**(1-2): 22.
1935. *Zilla nawazi* : Dyal, *Bull. Dept. Zool., Panjab Univ.*, **1** :186.
1939. *Araneus mitifica* : Satio, *Satio Ho-no Kai Mus. Res. Bull.*, **18**:19.
1963. *Araneus mitifica* : Tikader, *J. Univ. Poona, Sci. & Tech.*, **24**:43.
1978. *Araneus mitificus* : Yaginuma, *Spiders of Japan in color*:55.
1981. *Araneus mitifica* : Tikader & Bal, *Rec. zool. Surv. India, occ. pap.* **24**:53.

1982. *Araneus mitifica* : Tikader, *Fauna of India, Araneidae*, **2**(1):233.
1986. *Araneus mitificus* : Yaginuma, *Spiders of Japan in color*:100.
1991. *Araneus mitificus* : Chen & Zhang, *Fauna of Zhejiang, Araneida*:89.
1995. *Araneus mitificus* : Barrion & Litsinger, *Riceland spider of south & southeast Asia*:638.
1997. *Araneus mitificus* : Platnick, *Advances in Spider Taxonomy*, :483.
1997. *Araneus mitificus* : Yen *et al.*, *Fauna Sinica, Araneidae*, :139.
1999. *Araneus mitificus* : Song *et al.*, *The spiders of China*, : 239.
2004. *Araneus mitifica* : Gajbe, *Rec. zool. Surv. India, occ. pap.* **227**:34.
2005. *Araneus mitifica* : Majumder, *Mem. Zool. Surv. India*, **20**(3):6.
2009. *Araneus mitifica* : Ahmed *ed.*, *Flora & Fauna of Bangladesh, Arachn.*, **18**(1):131.
- Material examined* : 2 ♂, 1 ♀, Bagerhat, 9.II.1993, Coll. V. Biswas ; 8 ♂, S. Park, Dhaka, 4. III. 1993, Coll. V. Biswas ; 2 ♂, Kustia, 12.III.1993, Coll. V. Biswas ; 1 ♂, Rajshahi, 3.III.1992, Coll. V. Biswas ; 2 ♂, Manikganj, 3.VI.1992, Coll. V. Biswas ; 3 ♂, BAU, Mymensingh, 15.XI.1993, Coll. V. Biswas ; 2 ♂, Japhlong, Sylhet, 28.XII.1993, Coll. V. Biswas.

General : Cephalothorax and legs yellow-brown; abdomen dorsally silvery-white and ventrally green. Total body length 9.00 mm. Carapace 3.65 mm long, 2.80 mm wide ; abdomen 5.59 mm long and 6.00 mm wide.

Distribution : BANGLADESH : Bagerhat, Dhaka, Kustia, Manikganj, Mymensingh, Rajshahi, Sylhet; BURMA; CHINA (Chen and Zhang, 1991); INDIA (Tikader, 1980); JAPAN (Yaginuma, 1986); MALAYSIA (Koh, 1989); PAKISTAN (Tikader, 1980); SINGAPORE (Koh, 1989).

2. *Araneus rumiae* n. sp. (Figs. 8-12)

Material examined : 1 ♂ Barisal, 2.X.1993, Coll. V. Biswas ; 1 ♀, Jessore, 20.X.1993, Coll. V. Biswas.

General : Cephalothorax yellow-brown, legs yellowish ; abdomen light brown with white

Table-1: Measurements (in mm) of different leg segments of *Araneus rumiae* n. sp.

Leg	Femur	Patella & Tibia	Metatarsus	Tarsus	Total
I	2.50/2.50	0.80/0.80	2.70/2.70	1.20/1.20	9.70/9.70
II	2.30/2.30	0.60/0.60	2.60/2.60	1.00/1.00	8.80/8.80
III	1.40/1.40	0.50/0.50	2.40/2.40	0.80/0.80	7.10/7.10
IV	2.00/2.00	0.50/0.50	2.50/2.50	0.80/0.85????	7.95/7.95

median band. Total body length 9.20 mm. Carapace 4.50 mm long, 4.00 mm wide; abdomen 4.70 mm long and 4.60 mm wide.

Cephalothorax : Broad, posteromedially wide, slightly longer than wide; cephalic region raised, with deeply distinct cervical furrows. Eyes pearly white, similar, each of anterior and posterior row of eyes strongly recurved, anteromedians situated on a protuberance, lateral eyes close; ocular quad wider anteriorly, wider than long. Chelicerae brown, long, anteriorly narrowing, inner margin with 3 and outer margin with 1 teeth (fig. 9). Maxillae dark brown, longer than wide, anteriorly scopulate (fig. 10). Sternum brown, broad, wider than long, clothed with spines and fine hairs (fig. 11). Legs long and slender, clothed with hairs and spines; leg formula and the measurements (in mm) : 1243.

Abdomen : Globular, medially wide, narrowing at both ends, clothed with fine pubescence; dorsum decorated with white patch; ventrally brown; epigyne as in fig. 12.

Male : Unknown.

Holotype : Female in spirit.

Type-locality : Barisal and Jessore, Bangladesh. Coll. V. Biswas.

Etymology : The species has been named after my beloved niece Dr. Rumi Biswas.

Remarks : The present species *Araneus rumiae* n. sp. in having produced tongue like epigynal scape comes close to the Indian congeners *A. pahalgaonensis* Tikader & Bal and *A. anantonagensis*

Tikader & Bal. These species (Tikader, 1982) however are with a pair of shoulder humps on the abdominal dorsum which is absent in the new species. Typical globular, shape of the abdomen brings it, close to *A. pentagrammicus* (Karsch) (Yaginuma, 1986; Shinkai & Takano, 1984) easily be separated out in not having, the sigilla on the abdominal dorsum. *Araneus ventricogus* (L. Koch) (Chen & Zhang, 1991; Yin, *et al.*, 1990) may also be related to the present species but of shoulder humps and sigilla on abdominal dorsum and thick, short and blunt epigynal scape justify its distinction. The species is, therefore described as new to science.

SUMMARY

The present paper deals with 2 (two) species of orb-weaving spiders of the genus *Araneus* Clerck of Bangladesh. The species are *A. mitifia* (Simon) and *A. rumiae* sp. n.

The study on these was initiated since 1994, have revealed the existence of above two species of a particular area of Bangladesh. Identity of the species were later confirmed by the Zoological Survey of India, Kolkata.

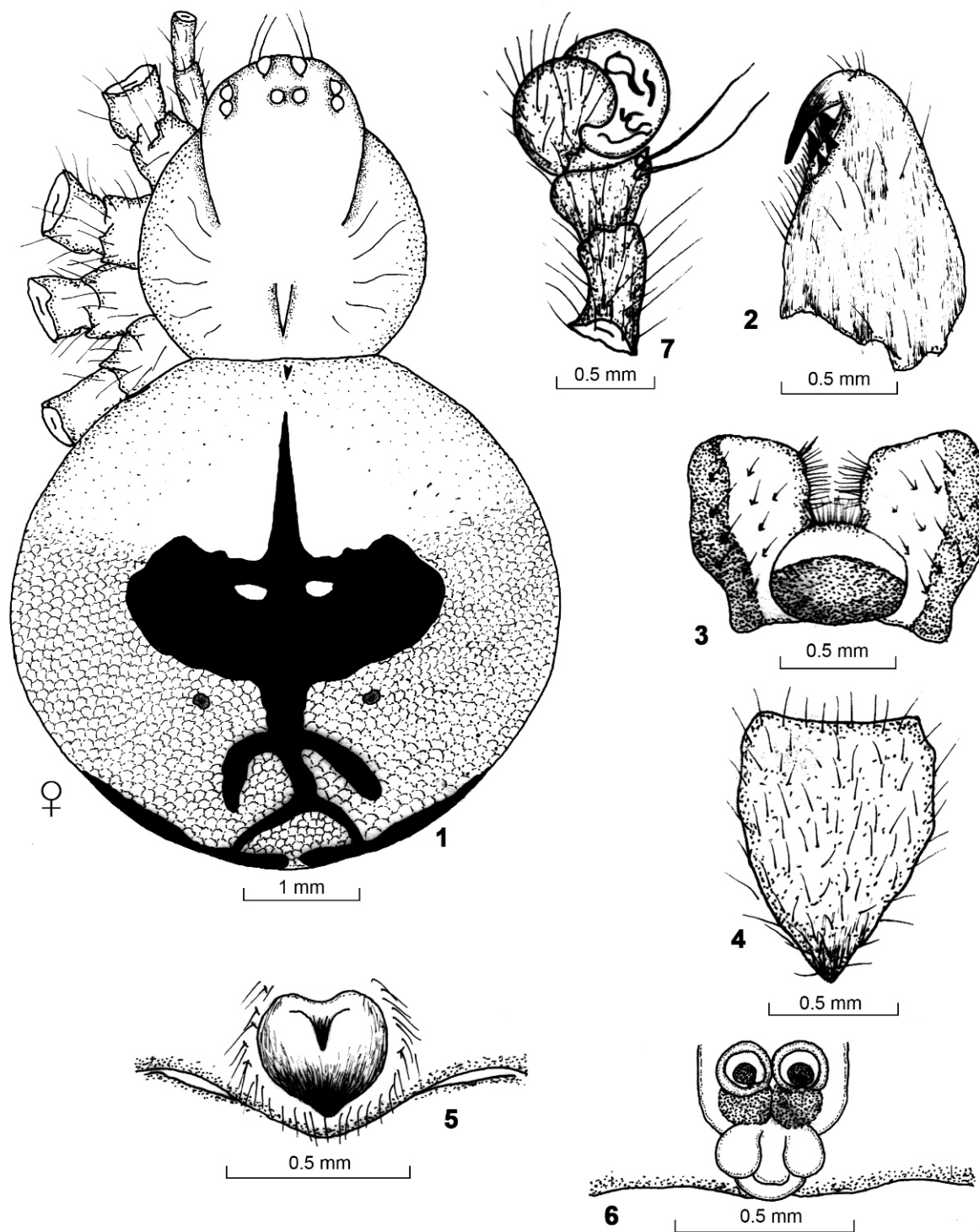
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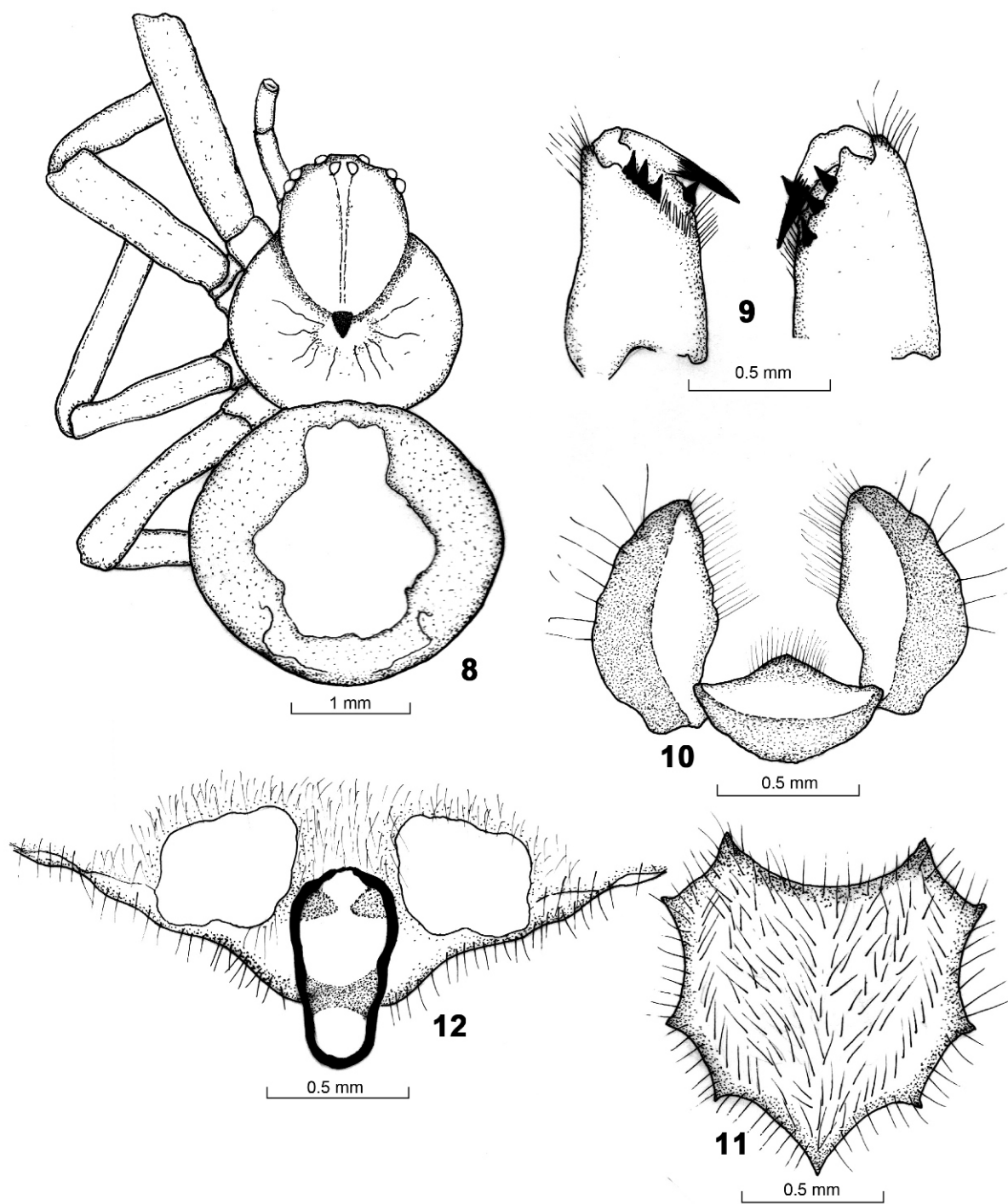
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Figs. 1-7 : *Araneus mitifica* Simon 1. Whole body (dorsal view) ; 2. Chelicerae ; 3. Maxillae and Labium ; 4. Sternum ; 5. Epigynum ; 6. Internal genitalia ; 7. Male palp.



Figs. 8-12 : *Araneus rumiae* n. sp. 8. Whole body (dorsal view); 9. Chelicerae ; 10. Maxillae and Labium ; 11. Sternum; 12. Epigynum.