PROPOSITION OF A NEW COMBINATION, *CHRYSSO ANGULA* (TIKADER) FOR THE INDIAN ENDEMIC *THERIDULA* EMERTON AND A NEW SYNONYMY FOR *CHRYSSO PSEUDOTHERIDULA* SILIWAL (ARANEAE: THERIDIIDAE)

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ABSTRACT: The two Indian endemic *Theridula* Emerton species are transferred to *Chrysso* O. P. Cambridge. *Theridula swatiae* Biswas et al. and *Chrysso pseudotheridula* Siliwal are considered as junior synonyms of *C. angula* (Tikader). Diagnosis of *C. angula* (Tikader) is revised and accordingly illustrated.

KEY WORDS: Taxonomy, *Theridula angula,* new combination, *T. swatiae*, *Chrysso pseudotheridula,* synonymy, India.

Siliwal (2009) described a new theridid *Chrysso pseudotheridula* from North-East India and justifiably suggested the need of taxonomic revision of two endemic *Theridula* Emerton, *T. angula* Tikader, 1970 and *T. swatiae* Biswas et al., 1997. She (op. cit.) doubted on the status of both the species under *Theridula*.

During the course of present study representatives of all 3 species in question are at hand. A critical examination of such samples is strongly suggestive of *Theridula swatiae* and *Chrysso pseudotheridula* as the junior synonyms of *Chrysso angula* (Tikader) [=*Theridula angula* Tikader]. The following diagnostic characters support their placement in *Chrysso* O. P. Cambridge: cephalothorax longer than wide, anterior row of eyes slightly recurved, AME separated by their diameter or more, promargin of chelicerae with 1-3 large teeth and retromargin toothless, leg I longest, each patella with a retrolateral tubercle, tarsi IV with comb; abdomen longer than wide, extends beyond spinnerets, with hump or posterior extension, often sub triangular in lateral view, a distinct tubercle above the posterior spinnerets; copulatory openings usually indistinct.

Variations observed in the abdominal pattern singly represent each of the species referred above. It is not only true for the females even the males too show such variations. However, in all cases the epigynum-internal genitalia shows a discrete nature. Single coil of the copulatory duct as referred by Siliwal (2009) could not be noticed.

We propose *Theridula angula* be placed in the genus *Chrysso* O. P. Cambridge and both *T. swatiae* and *Chrysso pseudotheridula* Siliwal be considered as junior synonyms of *C. angula* (Tikader). Accordingly the revised diagnosis and necessary illustrations are provided for *C. angula* (Tikader).

MATERIAL AND METHODS

Spiders were collected and preserved following Tikader (1987) and Barrion & Litsinger (1995). The materials were studied using Stereo Zoom Binocular Microscope, model Zeiss SV-11. The measurements indicated in the text are in millimeters, made with an eye piece graticule. Leg measurements are shown as: total length (femur, patella, tibia, metatarsus, tarsus).

Abbreviations used: CL= Cephalothorax length, CW= Cephalothorax width, AL= Abdominal length, AW= Abdominal width, TL= Total length, AME= Anterior median eyes, ALE= Anterior lateral eyes, PME= Posterior median eyes, PLE= Posterior lateral eyes; GNP= Gorumara National Park, CWLS= Chapramari WildLife Sanctuary, MWLS= Mahananda WildLife Sanctuary, WB= West Bengal.

All material are in the deposition of Entomology Laboratory, Department of Zoology, University of Calcutta.

TAXONOMY

Chrysso angula (Tikader, 1970) comb. nov.

(Figs.1-19)

Theridula angula Tikader, 1970, Rec. zool. Surv. India, 64: 15.
Theridula swatiae Biswas, Saha & Raychaydhuri, 1997, Entomon, 22: 230.
Chrysso pseudotheridula Siliwal, 2009, Biosystematica, 3(1): 5.

Diagnosis: Abdomen rhomboid, angles with black spots, at times continuous with median longitudinal and/or basal marginal bands, with 2 pairs of midlongitudinal sigilla (muscular apodemes); spermatheca bilobed, fertilization ducts short and curved, copulatory openings indistinct; male palpal conductor basally swollen, apically pointed, curved, crossing cymbial margin.

Epigynum - Internal genitalia (Figs. 4 and 5)**:** Spermatheca bilobed, fertilization duct distinct, short and curved, copulatory ducts long, medially incurved, copulatory openings indistinct.

Male palp (Fig. 7)**:** Paracymbium hooded, conductor long, basally swollen, apically pointed, curved, largely crossing cymbial margin, embolus thick, apical tip hook like, smaller than conductor.

Measurements:

Female (Fig.1)**:** CL- 1.0, CW- 0.92, AL- 3.37, AW- 3.10, TL- 4.37.
Inter ocular distance: AME–AME=0.14, ALE–AME=0.05, ALE–ALE=0.37, PME–PME= 0.14, PLE–PME=0.07, PLE– PLE=0.39, AME–PME=0.05.
Legs: I 5.38 (1.46, 0.40, 1.26, 1.66, 0.60); II 3.35 (1.0, 0.30, 0.66, 0.93, 0.46); III 2.42 (0.66, 0.33, 0.43, 0.60, 0.40); IV 4.22 (1.33, 0.40, 0.86, 1.0, 0.63). Leg formula 1423.

Male (fig.6)**:** CL- 0.82, CW- 0.78, AL-1.71, AW-1.17, TL-2.53.
Inter ocular distance: AME–AME=0.14, ALE–AME=0.07, ALE–ALE=0.32, PME–PME= 0.07, PLE–PME=0.08, PLE– PLE=0.32, AME–PME=0.07.
Legs: I 4.50 (1.20, 0.26, 1.00, 1.58, 0.46); II 2.75 (1.0, 0.26, 0.46, 0.77, 0.26); III 1.98 (0.52, 0.26, 0.37, 0.46, 0.37); IV 3.52 (1.20, 0.46, 0.52, 0.88, 0.46). Leg formula 1423.

Variations: Abdomen variably decorated with black as in figs.8-12 and 13-19.

Material examined: 2♀♀, 7th Mile, MWLS, WB, India, 07.ix.2007, coll. S. Sen; 1♂, Laltong, MWLS, WB, India, 15.x.2008, coll. S. Saha; 2♀♀ & 3♂♂, Gorumara, GNP, WB, India, 29.x.2007, coll. D. Raychaudhuri; 3♀♀, Dhupjhora, GNP, WB, India, 03.v.2008, coll. S. Sen; 1♀ & 1♂, Murti, GNP, WB, India, 04.v.2008, coll. S. Sen; 4♀♀, Gorumara, GNP, WB, India, 11.ii.2009, coll. S. Sen; 1♀/1♀, Chapramari, CWLS, WB, India, 07.v.2008/19.xii.2008, coll. S. Sen.

Distribution: India: Andhra Pradesh, Arunachal Pradesh, Kerala, Sikkim, West Bengal (Tikader, 1970; Biswas *et al.* 1997; Sebastian & Peter, 2009; Siliwal, 2009; Platnick, 2011).

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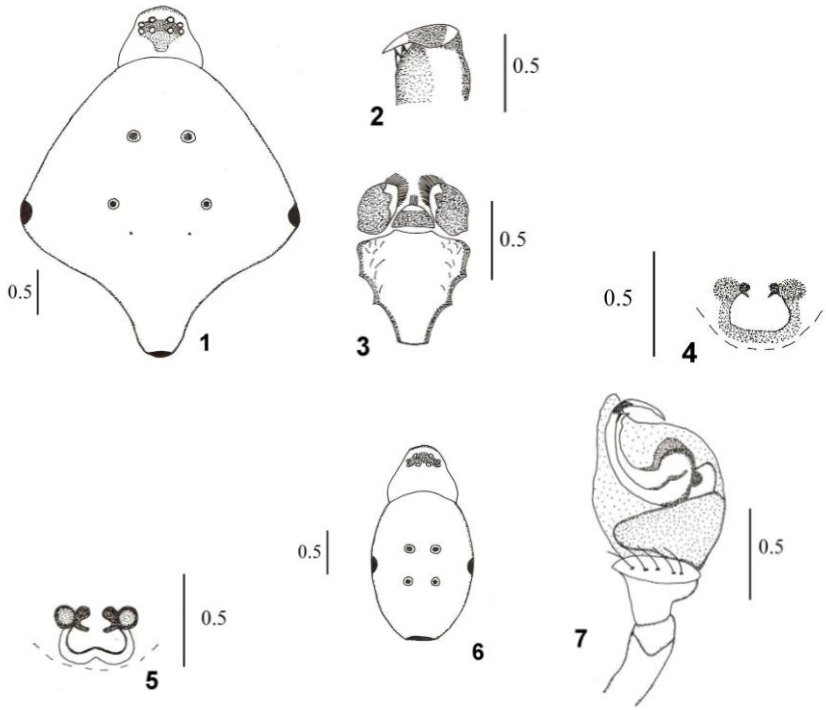
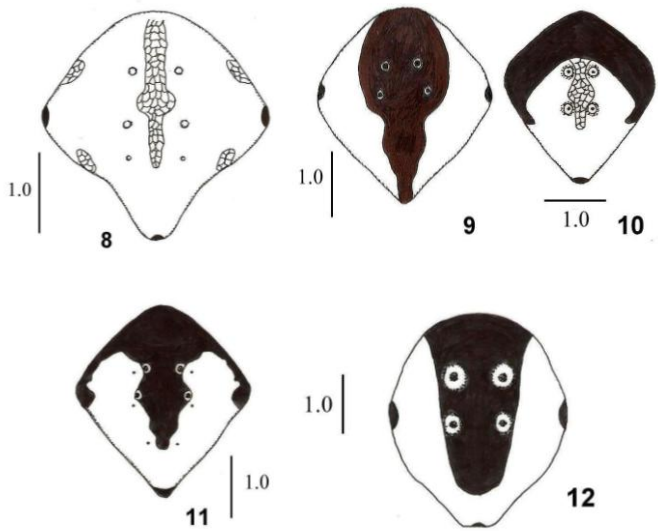


Figures 1-7. *Chrysso angula* (Tikader) comb. nov.: Female: 1. Cephalothorax and abdomen, dorsal view; 2. Chelicerae, ventral view; 3. Maxillae, labium and sternum, ventral view; 4. Epigynum, ventral view; 5. Internal genitalia, dorsal view. Male: 6. Cephalothorax and abdomen, dorsal view; 7. Palp, ventral view.



Figures 8-12. Abdominal variations of *Chrysso angula* (Tikader) comb. nov.

Figures 13-19. Photographic Images: showing abdominal variations in *Chrysso angula* (Tikader) comb. nov.: 13-17: Female habitus; 18-19: Male habitus.