

A NEWLY RECORDED CRAB-SPIDER GENUS *Misumenoides* F.O. PICKARD-CAMBRIDGE, 1900 (ARANEAE: THOMISIDAE) FROM KHULNA, BANGLADESH

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Abstract

A study on the crab-spider genus *Misumenoides* F. O. Pickard-Cambridge, 1900 (Araneae: Thomisidae) was carried out in Khulna, Bangladesh. One species namely – *M. deccanes* Tikader was recorded for the first time from the present study area. Illustrated description and distribution of the species are provided together with generic diagnosis.

Key words: Crab-spiders; New record; *Misumenoides*; Araneae; Thomisidae; Bangladesh.

INTRODUCTION

Spiders of the family Thomisidae (crab spiders) are common members in the gardens and forests. They are very attractive and beautiful and usually found on the leaves and petals of colourful flowers in the gardens. These spiders are distributed all over the world and at present, have over 2,155 species under 175 genera in the world fauna (World Spider Catalog 2019). Members of the genus *Misumenoides* are typical in shape and very slow in movement. They do not spin any web in their habitat but sometimes make specialized nests during breeding season.

The genus was first erected by F.O. Pickard-Cambridge in 1900 with the type-species *M. magnus* (Keyserling 1880) and till date, 36 species are described worldwide (World Spider Catalog 2019). But there is no description of this spider in this region of Bangladesh (Chowdhury and Nagari 1981, Okuma *et al.* 1993, Biswas 1995, Biswas and Raychaudhury 2016) although a good number of works are available on this genus in other Asian countries like- India (Tikader, 1980, 1987, Majumder 2005, Keswani *et al.* 2012), China (Chen and Zhang 1991, Song and Zhu 1997, Song *et al.* 1999), Japan (Yaginuma 1986, Ono 1988), Philippines (Barrion and Litsinger 1995) and Korea (Paik 1978, Namkung 2003).

The present paper deals with an illustrated description of a newly recorded species *M. deccanes* Tikader from Khulna, Bangladesh together with the distribution and generic diagnosis.

MATERIAL AND METHODS

Collection and Preservation

Spiders of the genus *Misumenoides* are sluggish in habit and stay on the leaves or petals of coloured flowers, spreading legs. They can show a remarkable degree of mimicry; and that is why, sometimes they are very difficult to identify their occurrence in the garden. Specimens were collected by hand-picking and by jerking the branches of trees on the inverted umbrella placed underneath the bushes and trees (Tikader 1987). The collected specimens were anesthetized with chloroform in a killing jar in the field and were then transferred to a Petridis filled with 70% ethanol for sorting.

After sorting, the specimens were kept 3-4 hours in another larger petridish with 70% ethanol for relaxing and loosing its body muscles. The ready specimens were then preserved temporarily in separate vials filled with 70% ethanol for identification. After identification, the specimens were preserved permanently in 'Audmans Preservatives' (85 parts 70% alcohol + 5 parts glycerine + 5 parts glacial acetic acid) (Lincoln and Sheals 1985).

Identification

Spiders thus preserved, were identified following – Pocock (1900), Schick (1965), Dondale and Redner (1978), Tikader (1980, 1987), Yaginuma (1986), Ono (1988), Chen and Zhang (1991), Barrion and Litsinger (1995), Song and Zhu (1997), Song *et al.* (1999), Majumder (2005), Biswas (2009), Kim and Lee (2012) and Sen *et al.* (2015). The identity of the species was later confirmed from the Zoological Survey of India, Kolkata.

Figures were drawn using camera Lucida fitted with Stereo Binocular Microscope (SV8, Zeiss). All the measurements were taken in millimeters (mm) under microscopic observation. Leg measurements are shown as: total length of different parts (viz. femur, patella, tibia, metatarsus and tarsus).

RESULTS AND DISCUSSION

Taxonomy

Family: THOMISIDAE Sundevall, 1833

Genus: *Misumenoides* F.O. Pickard-Cambridge, 1900

Type-species: *M. magna* (Keyserling) 1900.

Misumenoides F.O. Pickard-Cambridge, *Biol. Centr. Amer. Zool.*, 2: 136. Gertsch, 1939: 309; Mello-Leitao, 1941: 163; Chamberlin & Ivie, 1944: 157; Caporiacco, 1955: 412; Tikader, 1963: 258; Schick, 1965: 105; Dondale & Redner, 1978: 129; Tikader 1980: 150; Jimenez, 1992: 53; Barrion & Litsinger, 1995: 241; Platnick, 1997: 830; Mikhailov, 1997: 194; Gajbe, 2004: 104; Biswas & Roy, 2008: 48; Biswas, 2009: 348; Teixeira & Lise, 2012: 381. [All synonyms and references are listed in the World Spider Catalog (2019)]

Diagnosis

Spiders of the genus *Misumenoides* F.O. Pickard-Cambridge are small to medium in size. Cephalothorax is relatively flat, clypeus vertical with a white anterior carina curving to allutum. Lateral eyes situated on a common and strongly projecting process. Tibia I and II without prolateral spiniforms and without a ventrolateral spiniform; tarsi I and II without prolateral spiniforms.

Abdomen nearly flat, enlarged posterolaterally, with variously decorated dorsum; ventrally pale in colour; epigynum and spinnerets are typical in different species.

Biological note

These spiders are small to medium in size and brownish in colour. Cephalothorax brown and legs green. They are commonly found in the garden, on the leaves and bright coloured flowers. They cannot spin any web but can make typical nests during breeding season. They show a remarkable degree of mimicry so that sometimes it becomes very difficult to identify them in their habitat. In the crop-fields and gardens, these spiders are considered as one of the important biological control agent of insect pests (Barrion and Litsinger 1995).

Distribution

Asia and America.

Misumenoides deccanes Tikader 1965 (Fig. 1a-f; Fig. 2) *Misumenoides deccanes* Tikader, *Proc. Indian Acad. Sci.* 61(5): 279; Tikader 1980: 152; Biswas 2009: 348.

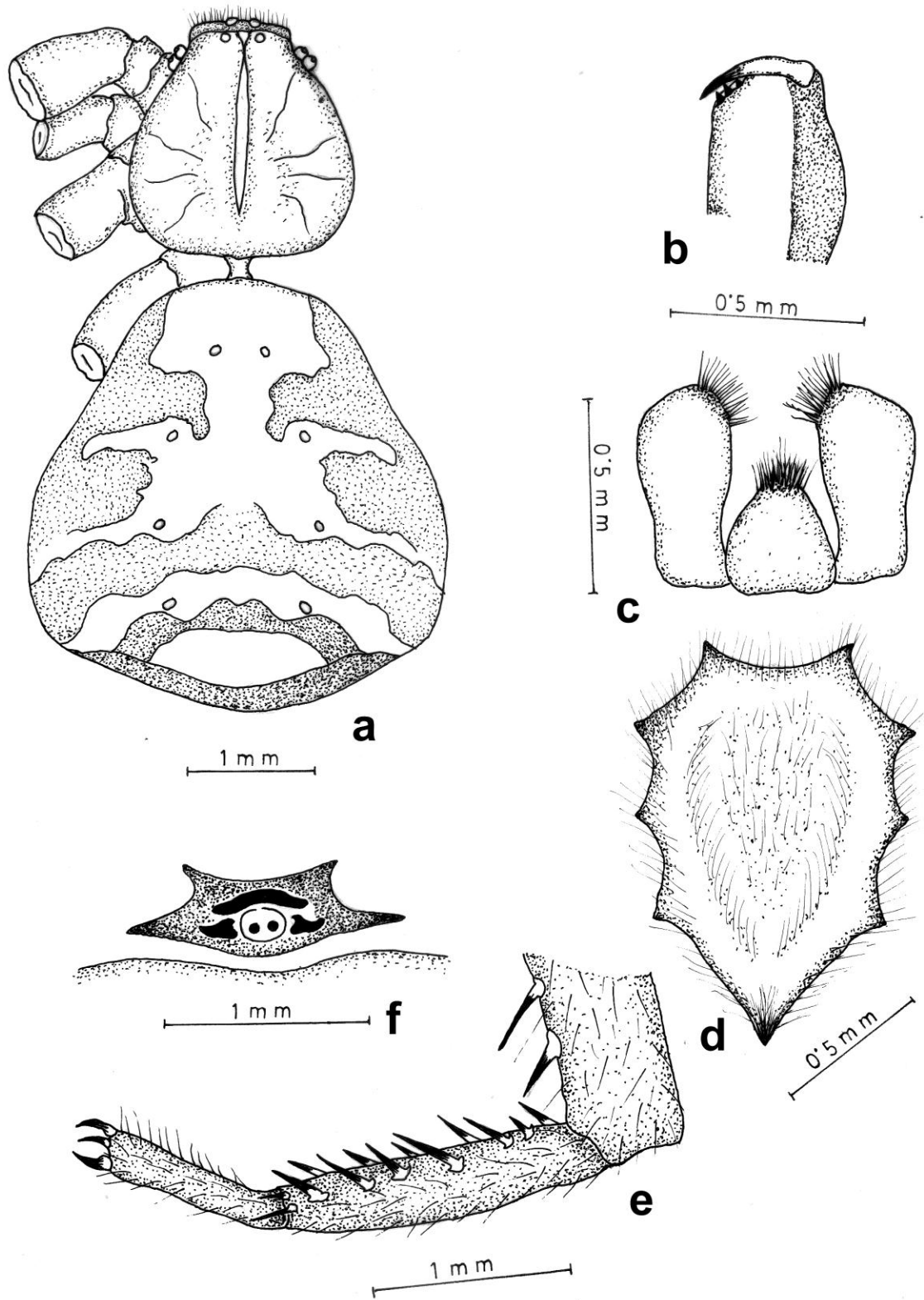


Fig. 1. Sketch of *Misumenoides deccanes* Tikader: a. Whole body (dorsal view); b. Chelicerae; c. Maxillae & Labium; d. Sternum; e. Part of hind leg; f. Epigynum.

Material examined

1 female, Agricultural Diploma Institute (ADI), Faridpur, 19. IV. 1992, Coll. V. Biswas; 1 female, Shiker pur, Jhenaidah, 21. VI. 1993, Coll. Biswas; 1 female, Magura, 12. X. 1992, Coll. V. Biswas.

Description of female

Cephalothorax light brown; legs greenish and abdomen light brown. Total body length 4.20 mm. Carapace 1.60 mm long, 1.70 mm wide; abdomen 2.60 mm long and 2.35 mm wide (Fig. 1a).



Fig. 2. Pictorial view (dorsal) of *Misumenoides deccanes* Tikader.

Cephalothorax

Broad, flat, little longer than wide basally; cephalic region raised, a median elevated ridge-like band distinct from the anterior margin up to the 3/4th of the thoracic region; cephalic region anteriorly with a transverse tubercular ridge bearing the anterior median eyes; cervical furrows distinct; radii distinct; both anterior and posterior row of eyes recurved; lateral eyes larger, close to each other and situated on the margin of cephalic region; ocular quad wider than long. Chelicerae strong, longer than wide, only inner margin with 3 teeth, fang constricted basally (Fig. 1b). Maxillae are longer than wide, anteriorly wider and scopulate (Fig. 1c). Labium wide posteriorly, anteriorly narrowed and scopulate (Fig. 1c). Sternum elongate, wider anteriorly and pointed posteriorly, clothed with spines and hairs (Fig. 1d). Legs long and slender; leg I very long; tibiae and metatarsi of I with strong spines ventrally (Fig. 1e); leg formula 2143 and the measurements (in mm) are shown in Table 1.

Table 1. Measurements (mm) of leg segments of *Misumenoides deccanes* Tikader.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.00	0.80	1.50	1.50	0.80	6.60
II	2.00	0.80	1.60	1.50	0.90	6.80
III	1.00	0.30	0.80	0.40	0.20	2.70
IV	1.00	0.40	0.80	0.60	0.30	3.10

Abdomen

Broad, longer than wide, basally broad and narrowing anteriorly, blunt posteriorly, dorsum decorated; ventrally pale with few spots; epigyne dish-like (Fig. 1e).

Distribution

Bangladesh: Faridpur, Jhenaidah, Magura; and India (Tikader 1980).

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