A NEW SPECIES OF PHIOLEMA CAMERON (HYMENOPTERA : EURYTOMIDAE) PARASITIC ON SPIDER EGGS (ARACHNIDA : ARANEAE) FROM INDIA

T.C. NARENDRAN, P. GIRISH KUMAR* AND S. TALUKDAR*
Systematic Entomology Laboratory, Department of Zoology,
University of Calicut, Kerala-673 635, India
E-mail: drtcnarendran@yahoo.com
*Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053, West Bengal, India
Corresponding author: P. Girish Kumar

INTRODUCTION

The genus Philolema was raised by Cameron in 1908 based on the type species Philolema carinigena Cameron. Boucek (1988 : 106) stated that Philolema Cameron would be emerged with Eurytoma Illiger. But most of the recent workers (Narendran, 1994; Lotfalizadeh et al., 2007) considered it as a distinct genus. The generic classification in the family Eurytomidae is still very unsatisfactory. In the most recent classification (Lotfalizadeh et al., 2007; Noyes, 2009) this new species comes under Desantisca species group of the genus Philolema. In Desantisca species group all species are parasitic on spider eggs. This species group consists of 4 valid species from the Indian subcontinent namely, Philolema (=Desantisca) belgaumensis (Narendran) from Maharashtra, India, P. (=D.) palanichamyi (Narendran) from Tamil Nadu, India, P. (=D.) uloborae (Narendran) and P. (=D.) lankana (Narendran) from Nugegoda, Sri Lanka (Narendran, 1994; Noyes, 2009). In this paper one new species is described from West Bengal, India based on specimens which emerged from unidentified spider egg sacs.

The Holotype and Paratype are deposited in the ‘National Zoological Collections’ of the Zoological Survey of India, Kolkata (NZSI).

MATERIALS AND METHODS

The egg sacs of the unidentified spider species are collected from the spider web. They reared in the laboratory from which the parasite emerged out. The specimens are card mounted and studied under Wild Heerbrugg Stereozoom microscope (Made in Switzerland) and drawings were made using the drawing tube of the microscope.
The following abbreviations are used in the text:

F1-F6 = Funicular segments 1 to 6; MV = Marginal vein; PMV = Post marginal vein; OOL = Ocellocular line; POL = Postocellar line; SMV = Submarginal vein; STV = Stigmal vein; T1-T6 = Gastral tergites 1 to 6.

RESULTS

*Philolema nadia* Narendran and Girish Kumar sp. nov.
(Figs. 1-4)

*Holotype*: Female: Length 1.86 mm. Black. Mandible blackish brown; antenna brownish black with scape and pedicel black; tegula black; fore and mid tibiae pale brown except at bases and apices yellow; hind tibia dark brown except base and apex yellow; all tarsi yellow with apical tarsal segment yellowish brown; claws brown. Wings hyaline, veins whitish yellow with some brown margins on fore wing veins. Body hairs short, thick and white, originate from each umbilical puncture; hairs sparse on clypeus and supraclypeal area, absent on lateral corner of pronotum, scapula, axilla and mesopleuron (except a line of hairs on carina of mesopleuron anteriorly).

*Head*: Densely and umbilicately punctate including malar space; interstices narrow; front view as in Fig. 1; scrobe deep, its lateral margins carinate, dorsal margin ecarinate; relative measurement of dorsal width of head : length = 23.5 : 10; POL : OOL = 5 : 2; eye without pubescence. Antenna 11162; scape not reaching front ocellus; antenna (Fig. 2) with sensilla and setae; length: width of antennal segments: scape = 15 : 5.5; pedicel = 4 : 3.2; F1 = 9 : 6; F2 = 6 : 7; F3 = 6.5 : 7.5; F4 = 6.8 : 8; F5 = 7 : 8; F6 = 7 : 7.2; club = 12.3 : 6.5.

*Mesosoma*: Densely and umbilicately punctate; interstices narrow; punctures weak on lateral corner of pronotum, scapula, axilla, lateral sides of propodeum and mesopleuron; mesopleuron with some transverse striations; relative length of mesosoma (including pronotal collar) strictly in dorsal view: width (excluding tegulae): maximum height = 26.5 : 14.5 : 19; anterior margin of propodeum ecarinate; scutellum slightly jutting out posteriorly; posterior margin of propodeum concave medially (Fig. 4), propodeum with transverse rows of shallow pits; tegulae with a few irregularly scattered punctures on proximal half. Hind femur broad and flattened. Forewing (Fig. 3) 2.15 × as long as wide; relative lengths of veins: SMV = 32; MV = 7; STV = 5.5; PMV = 8.

*Metasoma*: Petiole strongly sculptured, length subequal to length of hind coxa; gaster not compressed from sides; T1 to T4 without hairs, T5 with a bunch of fine lateral hairs and T6 with a bunch of fine apical hairs.

*Male*: Unknown.

*Host*: Egg sacs of unidentified spiders.

*Biology*: Unknown.

*Distribution*: India: West Bengal.
Figs. 1-4. *Philolema nadia* Narendran and Girish Kumar sp. nov. Female. Fig. 1. Head front view. Fig. 2. Antenna. Fig. 3. Body profile. Fig. 4. Propodeum.
Etymology: The species is named after the district from where the type specimens were collected.


DISCUSSION

This new species comes close to Philolema (=Desantisca) uloborae (Narendran) but distinctly differs from it in having: (1). Antenna brownish black with scape and pedicel black (In P. uloborae antenna yellow with club and distal funicular segment brownish tinge); (2). Scrobe deep, its lateral margins carinate (in P. uloborae scrobe shallow, its lateral margins ecarinate) and (3). Eye without pubescence (in P. uloborae eye pubescent).

SUMMARY

A new species of Philolema Cameron viz., Philolema nadia Narendran and Girish Kumar sp. nov., emerged from the spider eggs, is described from India and its affinities to the closest relative are discussed.

ACKNOWLEDGEMENTS

We are grateful to the Director, Zoological Survey of India, Kolkata for providing facilities and encouragements. First author is also grateful to the authorities of university of Calicut for providing facilities. Third author is also grateful to Bharatia Vignan and Yuktiwadi Samiti, Shyamnagar for their helps to visit the collection locality.

REFERENCES


Cameron, P. 1908. Descriptions of two new genera and species of reared Chalcididae from Borneo (Hym.). Dt. Ent. Z. 1908 : 559-561.

