



Description of a new species of *Eofoersteria* Mathot (Hymenoptera: Mymaridae) from India, with a key to world species

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ABSTRACT: A new species of the genus *Eofoersteria* Mathot (Hymenoptera: Mymaridae), *Eofoersteria manipurensis* sp. nov., is described from India, a key to the females of all known species and their distribution is provided.

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KEYWORDS: Mymaridae, *Eofoersteria*, new species, key, India.

INTRODUCTION

The genus *Eofoersteria* Mathot (1966) (Hymenoptera: Mymaridae) belongs to the *Camptoptera* group of genera. *Eofoersteria* is very minute in size and is similar to *Camptoptera* Foerster with reduced or apparently reduced numbers of antennal and tarsal segments. Currently the genus is represented worldwide by three species (Noyes, 2014), of which only one species, *E. secunda* Viggiani (1978) is known from Tamil Nadu, India. We describe herein a new species from India after three decades, based on a specimen collected in Manipur and provide a key to the world species of *Eofoersteria* along with their distribution.

MATERIALS AND METHODS

Absolute measurements in millimeters are given for body length only. All other measurements are relative, taken with the help of an ocular micrometer having a linear scale of 100 divisions, placed in the eye piece of a compound microscope. All the measurements were made on the same magnification for all the parts. Abbreviations used are: F1 - 6 = Funicle segments 1 - 6; TI - TVI = Tarsal segments I - VI; MHNG – Muséum d’Histoire Naturelle, Geneva, Switzerland; ZDAMU - Insect Collections, Department of Zoology, Aligarh Muslim University, Aligarh, India.

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RESULTS AND DISCUSSION

Genus *Eofoersteria* Mathot

(Figures 1 - 6)

Eofoersteria Mathot, 1966:231 (Type species *Eofoersteria camptopteroides* Mathot, by original designation). Huber & Lin, 1999: 37 - 38.

Diagnosis

Female. Body length, 0.25 - 0.32 mm. Head with median vertical groove extending from foramen to vertex on occiput and transverse groove extending to lateral margin of head below eye. Mandibles unidentate, sharply pointed. Antenna 9-segmented (formula 1161), without ring-like segment (Fig. 1); clava entire. Mesosoma (Fig. 5) with prosternum pointed anteriorly; scutellum without transverse row of fovea; propodeum mostly about half the length of scutellum, carinae present or absent. Fore wing narrow but distinctly curved; proximal macrochaeta absent, distal macrochaeta short. Tarsi 4-segmented (TIV & TV fused). Metasoma (Fig. 5) with ovipositor not exerted to slightly exerted, mostly originates from middle of gaster.

Colour. Body colour dark brown except antennal segments and legs light brown. Fore wing slightly infusate at base, rest hyaline. Hind wing subhyaline.

Male. Unknown.

Hosts. Unknown.

Distribution. Australia, India, Florida, Trinidad & Tobago, Zaire (Noyes, 2014).

Species. World, 4 species. India, two species (including one new species described herein).

Comments. *Eofoersteria* Mathot can be distinguished from *Camptoptera* Foerster by the funicle 6-segmented, without a ring-like segment and 4-segmented tarsi, with the apical two segments almost fused (in *Camptoptera*, funicle is 7-segmented, with F2 usually ring-like and 5-segmented tarsi, with apical two segments clearly separated forming tarsal segments 4 and 5).

Key to world species of Genus *Eofoersteria*, Females

1. Fore wing with only one median row of discal setae; propodeum with carinae and sculpture (Viggiani, 1978; Fig. 3)..... 2

- Fore wing with more than two or more rows of discal setae; propodeum smooth (Fig. 9 in Mathot, 1966)..... 3
- 2. F1 1.3x F2; clava shorter than three preceding funicle segments combined (Fig. 1 in Viggiani, 1978) [India] *secunda* Viggiani
- F1 0.8x F2; clava longer than three preceding funicle segments combined (Fig. 1) [India] *manipurensis* sp. nov.
- 3. F1 0.7x F2; F2 and F3 subequal and slightly longer than F4 (Fig. 9 in Mathot, 1966) [Democratic Republic of Congo (Zaire)] *camptopteroides* Mathot
- F1 0.9x F2; F3 longest, F2 subequal to F4 [Australia] *vasta* (Girault, 1920)

1. *Eofoersteria secunda* Viggiani

Eofoersteria secunda Viggiani, 1978: 110–39, Holotype, Female. India. Tamil Nadu (MHNG, not examined). Anis & Rehmat, 2013: 3, checklist. Manickavasagam & Rameshkumar, 2013: 563, checklist.

Diagnosis

Female. Body length 0.32 mm. Body colour brown, with gaster dark brown; antenna and legs light brown. Head with interocular area with polygonal cells and transverse sculpture; occipital area transversely striated. Antennal scape twice as long as pedicel; F1 longest, F2 subequal to F3, F5 subequal to F6, F4 slightly longer than F5, clava shorter than F4 - F6 combined or three preceding segments. Mesosoma longer than metasoma; pronotum short, hardly visible in dorsal view, mesoscutum with transverse reticulations having polygonal cells; scutellum with more prominent sculpture towards posterior part, metanotum extremely reduced; propodeum with transverse reticulations having 4 carinae medially. Fore wing longer than body, with three rows of discal setae, one row of median discal setae and two submarginal rows. Hind wing with one row of median discal setae. Legs normal, with 4-segmented tarsi. TIV longest. Metasoma with short petiole. Ovipositor slightly longer than metasoma.

Male. Unknown.

Distribution. India: Tamil Nadu.

Comments. The above diagnosis is based on the original description and illustrations given by Viggiani (1978). *E. secunda* differs from to *E. camptopteroides* Mathot in having F1 about 1.3x as long as F2; fore wing with only one row of discal setae and propodeum with carinae. (In *E. camptopteroides* Mathot F1 about 0.7x as long as F2; fore wing with more than two rows of discal setae and propodeum without any carinae.

2. *Eofersteria manipurensis* sp. nov.

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(Figures 1 - 6)

Description

Female. Body length 0.29 mm. Body colour dark brown except antennal segments and legs light brown. Fore wing with slight infuscation at base, rest hyaline. Hind wing subhyaline. Head (Fig. 4) with occipital area with transverse reticulations having polygonal cells in the middle; posterior ocellus almost touches the trabeculae and ocelli present in an obtuse angle, frontal trabeculae divided into 6 pieces. Mandibles unidentate. Antenna (Fig. 1) with scape about 1.4x as long as pedicel; F1 0.83x of F2 length, F3 - F6 almost equal in length and width, except F6 slightly wider; clava longer than F4 - F6 combined, with 4 longitudinal sensillae covering whole length of clava. Relative measurements: scape length (width) 16 (5); pedicel length (width) 11 (3); F1 length (width) 10 (2); F2 length (width) 12 (2); F3 length (width) 8 (3); F4 length (width) 8 (4); F5 length (width) 9 (4); F6 length (width) 9 (5); clava length (width) 29 (10).

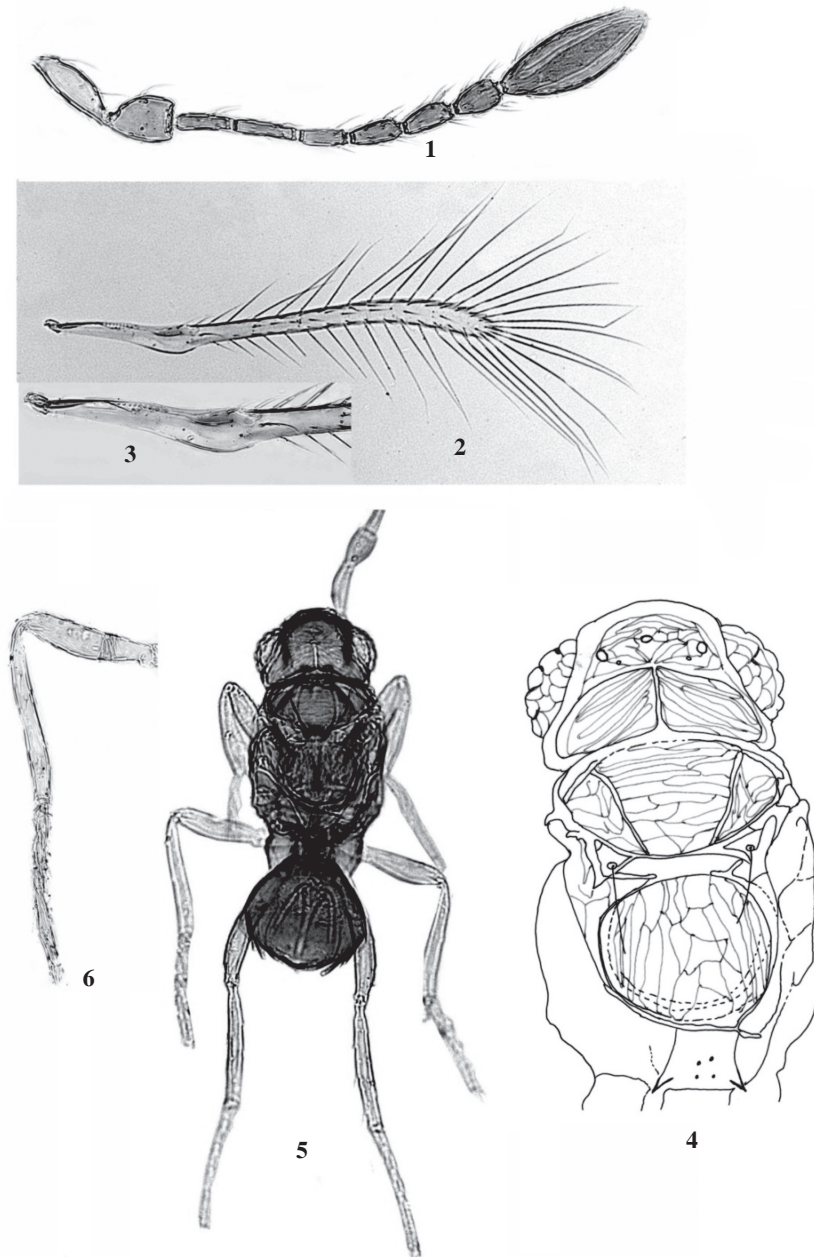
Mesosoma (Fig. 4) longer than metasoma (53:25), with transverse reticulation having longitudinal cells anteriorly and irregular cellular sculpture posteriorly on middle lobe of mesoscutum, lateral lobes with irregular cellulate sculpture; anterior scutellum smooth, posterior scutellum with narrow longitudinal reticulate sculpture laterally and transverse reticulations with large cells medially; each axilla obliquely striate laterally, with a long and strong seta reaching to half of scutellum length; propodeum smooth, with 2 carinae and 4 peg like setae clearly visible between propodeal carinae. Fore wing (Fig. 2) narrow, 18.7x as long as broad; longest marginal fringe, 8.12 x as long as width of fore wing, venation with 2 macrochaeta on marginal vein, 10–11 tubercles and a row of 8 setae on middle of wing disc and a single seta below venation, about 2x as long as other discal setae in middle row of disc. Hind wing 33.7x as long as broad with a row of setae in middle of disc. Legs (Fig. 6) 4-segmented tarsi, TIV & TV fused (genus character), as long as scape length.

Metasoma (Fig. 5) shorter than mesosoma; petiole (Fig. 5) wider than long, sculptured with transverse reticulation; ovipositor not exerted and covers 0.62x of total gaster length. Cercal setae nearly as long as half of gaster length.

Male. Unknown.

Hosts. Unknown.

Material examined. *Holotype* Female (on slide under 4 coverslips), INDIA: MANIPUR: Imphal, 11.11.2011, Coll. S. Begum. (ZDAMU, Registration No. HYM. CH. 712)



Figures 1 - 6. *Eofoersteria manipurensis* sp. nov. Female (Holotype): 1, antenna; 2, fore wing; 3, fore wing with basal part enlarged; 4, head + mesosoma, showing sculpture; 5, body, dorsal; 6, Mid leg.

Distribution. India: Manipur.

Etymology. The species is named after the Indian state Manipur, from where it was collected.

Comments. The species is close to *E. secunda* Viggiani (1978), it differs as follows: F1 shorter than F2 (F2 longest), clava longer than the last three funicular segments combined; propodeum without any reticulations and presence of 4 peg like setae clearly visible in the middle of the carinae; ovipositor 0.62 x of gaster length (see also key to species). (In *E. secunda*, F1 is about 1.3x as long as F2, clava is shorter than three preceding antennal segments together, propodeum with transverse reticulations, but without setae and the ovipositor is slightly longer than the gaster).

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