

**A NEW SPECIES OF *CHARTOCERUS*
(HYMENOPTERA: CHALCIDOIDEA: SIGNIPHORIDAE)
FROM WEST BENGAL, INDIA**

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Abstract

A new species of the signiphorid genus *Chartocerus* Motschulsky is described and illustrated.

Keywords

Chalcidoidea, Chartocerus, Hymenoptera, India, new species, Signiphoridae

Abbreviations

M2b - Second seta of the marginal vein along its anterior margin
M6 - Second seta of the marginal vein along its posterior margin
TI - TVII - Gasteral terga 1-7

Introduction

Signiphoridae is a small family of the Chalcidoid Hymenoptera, consisting of four genera and 71 species, distributed worldwide. Members of this family are mostly hyper-parasitoids parasitizing other primary hymenopteran, mostly chalcidoid, parasitoids, although a few species have been recorded as primary parasitoids (Woolley, 1988, for a review). From India only two genera, *Thysanus* Walker and *Chartocerus* Motschulsky, are known. The former represented by a single species, *T. ater* Haliday; and the latter by seven species (Hayat, 1970; 1976). This paper describes an interesting species of *Chartocerus* from material collected from West Bengal (India) by Dr. B.K. Das.

***Chartocerus bengalensis* sp. nov.**
(Figs. 1-10)

Material examined

Holotype: Female (on slide under two coverslips), 25.iii.2000, Kalyani, West Bengal, India, ex *Aspidiotus* sp. on *Mangifera indica*, coll. B.K.Das, deposited in N.P.C., Division of Entomology, I.A.R.I., New Delhi.

Paratypes: Eight females, three males (two females on the same slide with holotype, but under three separate coverslips; one

male on a second slide under two coverslips; six females and two males on a third slide under two coverslips), 25.iii.2000, Kalyani, West Bengal, India, ex *Aspidiotus* sp. on *Mangifera indica*, coll. B.K.Das. Two female paratypes deposited in N.P.C., Division of Entomology, I.A.R.I., New Delhi; rest of the material in Hayat collection.

Host

Aspidiotus sp. on *Mangifera indica*.

Distribution

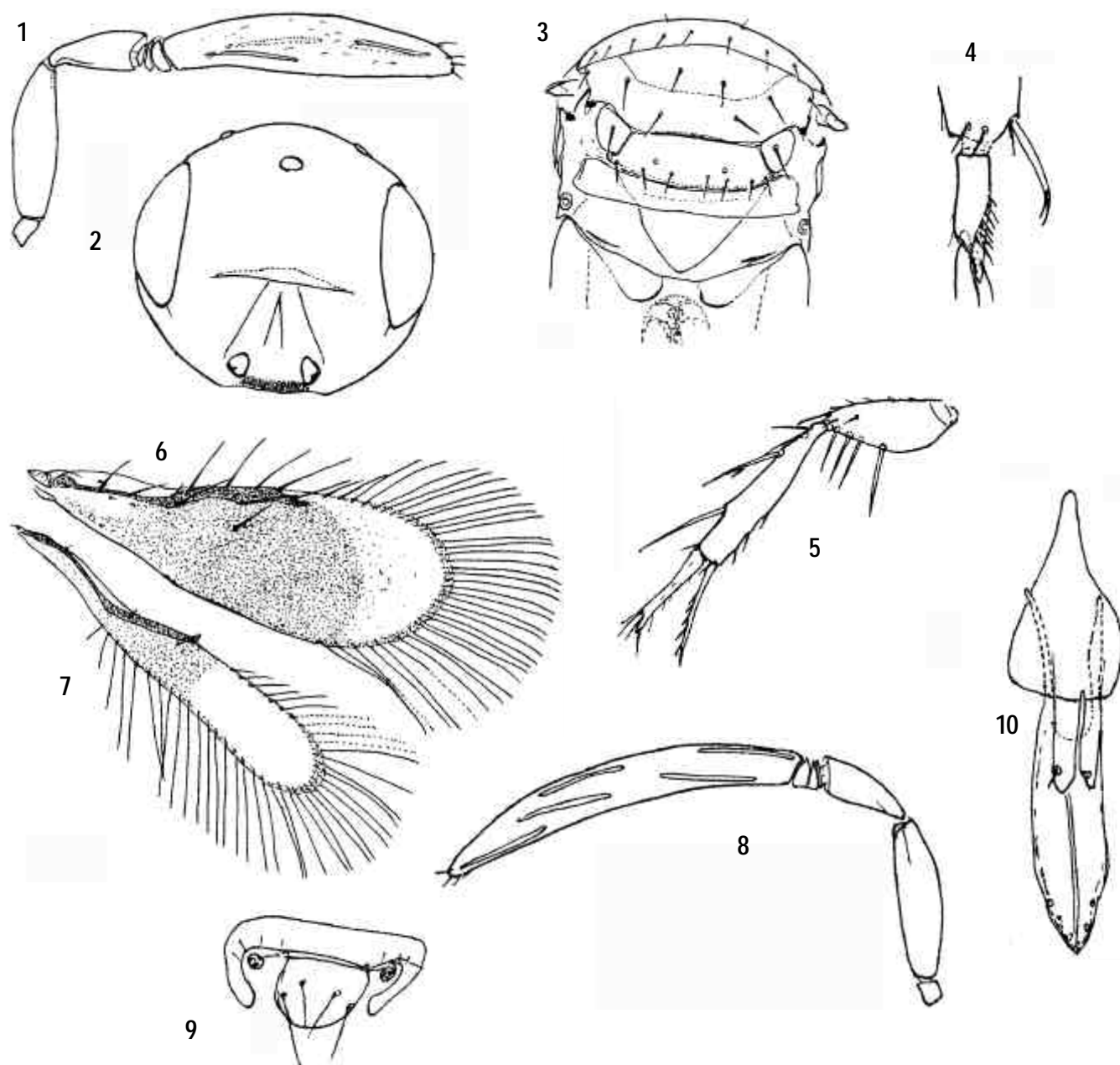
India: Kalyani, West Bengal

Etymology

The species name is derived from the name of the Indian state from where the specimens were collected.

Diagnostic features

Female: Length, 0.36-0.40mm. Head with vertex and a curved band on occiput above foramen, dark brown, rest of head yellow to pale brownish-yellow, with a black patch between toruli and mouth margin; thorax yellow, with pronotum, anterior half or so, except sides of mesoscutum, propodeum except sides, and gaster completely, dark brown to nearly black. Antenna



Figures 1-10. *Chartocerus bengalensis* sp. nov.

1-7 - Female: 1 - Antenna; 2 - Head frontal; 3 - Thorax dorsal; 4 - Fore tibial apex and basitarsus;
5 - Mid femur, tibia and basitarsus; 6 - Fore wing; 7 - Hind wing; 8-10 - Male: 8 - Antenna; 9 - Apical terga; 10 - Genitalia

brownish-yellow. Fore wing infusate from near base to level with stigmal vein, apically hyaline (Fig. 6); hind wing hyaline, with a faint infuscation in about middle. Legs yellow or brownish-yellow, with hind femora and tibiae infusate brown.

Head dorsally convex, in front view, almost rounded, nearly as long as broad (44: 47); frontovertex width two-thirds of head width (31: 47) and nearly twice of scape length (31: 17); other details as in Fig. 2; mandible bidentate. Antenna (Fig. 1) with three anelliform funicle segments, third segment larger and longer than the other two.

Thorax (Fig. 3) pronotum, mesoscutum and propodeum with transversely elongate to lineolate-reticulate sculpture; sculpture fine and discernible at higher magnification; mesoscutum with 10 setae; each axilla with one seta, and scutellum with a line of 6-7 setae along posterior margin. Fore wing (Fig. 6) slightly less than 3x as long as broad, with marginal fringe about four-fifths of wing width; setae M2b, M6 and a discal seta present. Hind wing (Fig. 7) almost parallel-sided, 7x as long as broad; marginal fringe nearly 2x as long as width of wing. Fore leg spur (Fig. 4) and spines on mid femur and tibia (Fig. 5) characteristic of the genus.

Gaster about as long as thorax (54: 52); terga with setae as follows: TI-IV – each with 1+1; TV – 3+3, of which the submedian pair of setae smaller; TVI – one seta just mesad of each spiracle; TVII – 6 setae. Relative measurements (holotype): Ovipositor length, 46; third valvula length, 10. (Mid tibia length, 27; mid basitarsus length, 14; mid spur length, 16).

Male: Similar to female in nearly all the characters, except for the more slender antennal clava (Fig. 8) and the genitalia (Fig. 10). The genitalia are characterized by a short and anteriorly narrowed phallobase; absence of papilliform processes and median denticles; digiti are flat, elongate structures, lacking apical denticles, but each digitus is provided with a short, subapical seta; aedeagus long.

Remarks

This species is placed in *Chartocerus* with some hesitation. It has the following characters of *Chartocerus*: fore tibial spur (=calcar) without a comb of fine setae (Fig. 4); propodeum without a lamelliform process posteriorly (Fig. 3); mid femur with three or four long spines (Fig. 5); and fore wing with setae M2b and M6 (Fig. 6). The characters that are different from *Chartocerus* are: female funicle with three anelli (Fig. 1); fore wing with a discal seta (Fig. 6); male with an epiproct distinct (Fig. 9). The male genitalia are peculiar in that these lack digital denticles, papilliform processes and median denticles. The phallobase and the digiti are more or less similar to those of males of the aphelinid (Family: Aphelinidae) genera *Bardylis* Howard and *Coccophagoides* Girault. In the characters of the

male genitalia, presence of an epiproct in males, presence of three anelli forming the funicle in female, and the body colour, the new species differs from all the other Indian species of this genus (Hayat, 1970; 1976). In all the seven Indian species, the body is completely dark brown to black; fore wing without a discal seta; funicle with four anelliform segments; males without an epiproct; and male genitalia are provided with papilliform processes, medial denticles, and each digitus has a robust denticle at apex.

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References

- Hayat, M. (1970).** Studies on the genera of the family Signiphoridae (Hymenoptera: Chalcidoidea) recorded from India. *Entomophaga* 15: 387-399.
- Hayat, M. (1976).** Some Indian species of *Chartocerus* (Hym: Chalcidoidea: Signiphoridae). *Oriental Insects* 10: 161-164.
- Woolley, J.B. (1988).** Phylogeny and classification of the Signiphoridae (Hymenoptera: Chalcidoidea). *Systematic Entomology* 13: 465-501.

Erratum

In a recent paper (Basha, M.C. and M. Hayat, 2002, *Zoos' Print Journal* 17(6): 791-794), the authors failed to indicate the location of the holotypes of the two species described. The holotypes of *Caenohomalopoda longiclava* Basha and Hayat, and of *Mahencyrtus adelencyrtoides* Basha and Hayat were deposited in the N.P.C., Division of Entomology, I.A.R.I., New Delhi.

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