

STUDIES ON *CHLOROXYTUS* GRAHAM (HYMENOPTERA : CHALCIDOIDEA : PTEROMALIDAE) OF THE INDIAN SUBCONTINENT WITH THE DESCRIPTION OF A NEW SPECIES

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INTRODUCTION

The genus *Chlorocyttus* was erected by Graham in 1956 with the type species *Pteromalus pulchripes* Walker designated by him. Though well represented in Europe (about 20 spp.) and Nearctic regions (more than 12 spp.) the genus is little known from East Africa, Asia and Australia (Boucek, 1988, Gibson *et al* 1997). Members of the genus are parasites of insect larvae, mainly of Diptera, Hymenoptera and Coleoptera boring in stems of Gramineae. From the Indian subcontinent two species are known under the genus viz. *C. murriensis* Graham from Pakistan and *C. xanthopus* (Cameron) from Pakistan and India (Delhi) (Farooqi & Subba Rao, 1986). Here one new species *C. indicus* is described under the genus from India. The single extant type of *C. xanthopus* (Cameron) (Lectotype) in BMNH designated by Boucek (Boucek, *et. al.* 1979) is redescribed here. Key to separate the species of *Chlorocyttus* from the Indian subcontinent is also provided.

Abbreviations used : F1-F6 — Funicular segments 1 to 6; POL — Postero-Ocellar length; OOL — Oculo-Ocellar length; SMV — Submarginal vein; MV — Marginal vein; PMV — Post marginal vein; STV — Stigmal vein; T4 — Gastral tergite 4; BMNH — British Museum (Natural History), London, U.K.

Key to the species of *Chlorocyttus* from the Indian subcontinent

1. Pronotal collar not sharply margined; median area of propodeum with coarse wrinkles and distinct foveolae subapically; median carina not complete (Fig. 4).
..... *C. xanthopus* (Cameron)
- Pronotal collar sharply margined; median area of propodeum without coarse wrinkles and subapical foveolae, median carina complete or nearly so, fairly sharp. 2
2. Propodeum with plicae indicated only anteriorly, median area moderately reticulate; antenna with F6 distinctly longer than wide; MV 2.7x as long as STV; general colour including most of gaster metallic blue; length. 1.6-2.3 mm. *C. indicus* sp. nov.

Propodeum with plicae sharp over at least posterior half, median area less strongly sculptured; antenna with F6 quadrate or hardly elongate; MV 1.7-2x as long as STV; colour of head and thorax green or bluish green; gaster black with green to blue and bronze reflection; length 2.6-3.15mm. *C. murriensis* Graham

1. *Chlorocytus xanthopus* (Cameron)
(Figs. 1-4)

Etroxys xanthopus Cameron, 1906 : *J. Bombay Nat. Hist. Soc.* XVII. 97. F. Pakistan : Quetta (Lectotype BMNH).

I have examined the lectotype of this species designated by Boucek in BMNH. As the original description of the species by Cameron (1906) is inadequate for identifying the species, the lectotype is re-described here.

Lectotype : Female : Length 3mm. Metallic bluish green with brassy tint; gaster brown with slight greenish reflection; scape and pedicel testaceous, remainder of antenna brown; fore and mid coxae brown; hind coxae concolorous with thorax, remainder of legs testaceous with tips of tarsi brown. Tegulae testaceous; wing membrane hyaline, veins yellow.

Head : (Fig. 1) 1.1x as broad as thorax, closely and distinctly punctured, more coarsely on frons and vertex; clypeus radiately striated, clearly demarcated from rest of the face, lower margin shallowly emarginate. In dorsal view head width 2x length, in front view width 1.3x height; temple length about half of eye length; POL 1.4x OOL; malar space length 0.54x eye height; eyes separated by 1.3x their height. Antennae inserted a little below middle of face; scrobe locally deep; scape slender, slightly curved, length 0.83x eye height; pedicel plus flagellum length 1.1x head width; pedicel as long as F1; anelli equal; club as long as two preceding segments combined.

Mesosoma : Uniformly reticulate punctate. Pronotal collar raised in the anterior margin, margin not sharp. Mesoscutum width 2x length. Scutellum as long as wide, convex. Propodeum (Fig. 4) finely reticulate, median area produced beyond hind margin of supracoxal flanges, with several irregular wrinkles; median carina broken in the middle; plicae almost complete, slightly broken medially; basal foveae deep; spiracles large and oval. Mesopleuron moderately reticulate except on upper mesepimeron shiny with a small fovea between upper and lower mesepimeron. Metapleuron finely reticulate with transverse furrows on upper and lower margins, which are narrowed at bases. Prepectus finely reticulate. Forewing (Fig. 2) length 2.6x width; pubescence less dense, basal part almost bare; basal vein not setate; marginal fringe small. Relative lengths of SMV, MV, PMV and STV as 38, 20.5, 21.5 and 10.

Gaster : (Fig. 3) Elongate, lanceolate, longer than head and mesosoma combined (1.1x), 3.7x as long as wide in dorsal view and 2.3x as long as hind tibia.

Material examined : Lectotype : Female : Quetta (Baluchistan), vi. 1902, Nurse coll. (BMNH coll. type Hymenoptera No. 6. 705).

2. *Chlorocytus indicus* sp. nov.

(Figs. 5-8)

Female : Length 1.6-2.3mm. (Holotype 2.2mm). Bright metallic blue with golden reflections; Head little darker; scape and pedicel dark testaceous, remainder of antenna brown; fore and mid coxae brown; hind coxae concolorous with thorax, remainder of legs yellow with tips of tarsi brown; tegulae testaceous; wing membrane hyaline, veins pale brown.

Head : (Figs. 5 & 6) 1.3x as broad as thorax, closely and distinctly punctate, vertex more coarsely reticulate; in dorsal view head width 2x length and in front view width 1.3x height; temple length 0.5x eye length; POL 1.3x OOL; malar space length half of eye height; eyes separated by 1.3x their height; clypeus demarkated from rest of the face, lower margin emarginate. Antennae (Fig. 6) inserted a little below middle of face; scape reaching median ocellus, not beyond level of vertex, 0.82x as long as eye height; pedicel plus flagellum length 1.2x head width; pedicel little shorter than F1, which in turn little longer than F2; F2-F4 equal; F5 little shorter than F4; F6 little shorter than F5; club almost as long as two preceding segments combined.

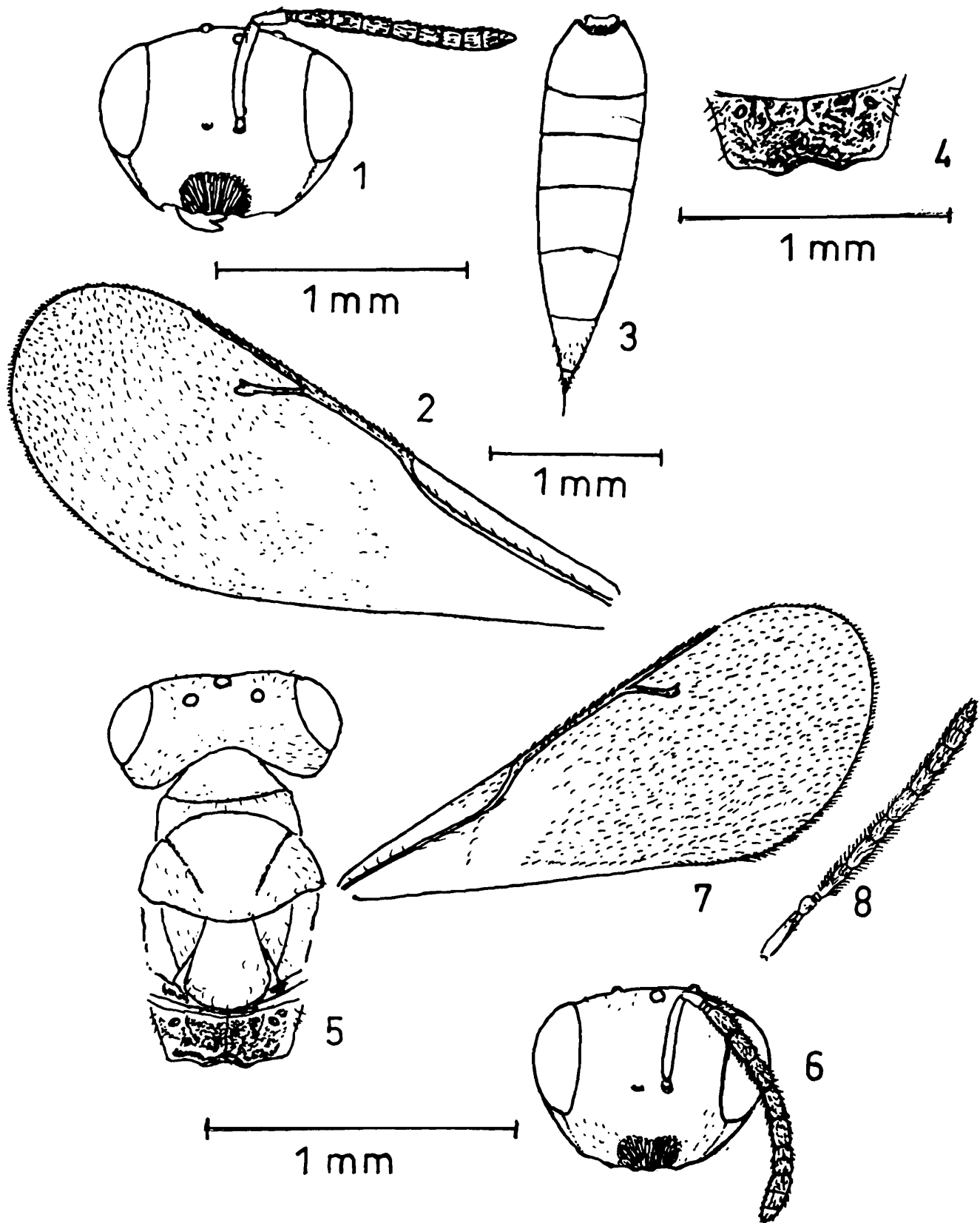
Mesosoma : (Fig. 5) Closely and distinctly punctate; 1.6x as long as broad; pronotal collar sharply carinate. Mesoscutum width 1.6x length. Scutellum convex, length 1.1x width. Propodeum finely and uniformly reticulate; median area little produced beyond hind margins of supracoxal flanges, without wrinkles; median carina fine, but complete, plicae not reaching beyond middle; basal foveae deep; spiracles oval, propodeum width 2.6x median length. Forewing (Fig. 7) length 2.5x width; pubescence less dense; basal vein setate; costal cell with a single row of hairs in the middle, completely hairy towards the distal tip. Relative lengths of SMV, MV, PMV and STV as 29, 19, 14 and 7.

Gaster : Longer than head plus mesosoma combined (1.1x), dorsally collapsing; hypopygium reaching upto hind margin of T4 and half length of gaster.

Male : (Fig. 8) Length 1-2.0mm. Resembles female but differs in having longer pubescence on antenna and funicular segments elongated; gaster with petiole more distinct, highly collapsing, completely brown with an yellow spot medially.

Material examined : Holotype : Female : INDIA : Kerala : Tellichery (Cannore), 4.ii.1995, Coll. P. M. Sureshan; Allotype : Male : Kerala : West hill (Calicut), 25.v.1987, Coll P. M. Sureshan; Paratypes : 3 Females, data same as that of holotype; 4 Females, Kerala : Puzhamudi (Waynad), 22.ii.1988; 5 Females, Manantody (Waynad), 22.ii.1988; 3 Females, Kerala : Thariyod (Waynad), 22.ii.1988; 6 Females, Kerala, Shertallai, 27.ii.1989; 2 Females, Thekkadi (Idukki), 10.v.1986; 2 Females, Malampuzha, 14.i.1987; 7 Females, Silent valley, 9.ii.1987; 4 Females, Kalkandi (Palghat), 13.xii.1987; 1 Female, Kotiyam (Quilon), 23.11.1989; 1 Female, Atingal, 23.ii.1989; 1 Female, Vazhani (Trichur), 7.ii.1989; 5 Females, Ernakulam, 9.ii.1989; 1 Female, Neeleswaram (Kasaragod), 26.ii.1988 (Coll. P. M. Sureshan) (in Zoological Survey of India, Calicut).

Remarks : This species resembles *C. murriensis* Graham in having sharply margined pronotal collar, complete median carina on propodeum and similar gaster but differs in colour, size, nature of antenna, propodeum and in forewing.



Figs. 1-4. *Chlorocytus xanthopus* (Cameron), Female : 1, head in front view; 2, forewing; 3, gaster in dorsal view; 4, propodeum in dorsal view.

Figs. 5-8. *Chlorocytus indicus* sp. nov., Female : 5, head and thorax in dorsal view; 6, head in front view; 7, forewing; 8, male antenna.

SUMMARY

A new species of *Chlorocytus* Graham viz., *C. indicus* is described from India. *C. xanthopus* (Cameron) is redescribed from the lectotype.

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