



Revision of the genus *Cestoplectus* Lamb (Diptera: Chloropidae) with description of a new species from India

Jyothi Tilak and P.T. Cherian*

Department of Zoology, University of Kerala, Kariavattom, Trivandrum- 695581, India

Email: tilakjyothi@yahoo.com; cherian_pt07@yahoo.co.in

ABSTRACT: A new species of the rare Oriental genus *Cestoplectus* Lamb from India is described. This is the fifth species coming under the genus of which three are distributed in India. A key to all the species of the genus and short notes on Indian species are given.

© 2015 Association for Advancement of Entomology

KEYWORDS: Diptera, Oscinellinae, Botanobiini, *Cestoplectus carinatus* sp. n., India

INTRODUCTION

Cestoplectus Lamb is a small genus known only from the Oriental Region. Andersson (1977) in his revisionary work on Chloropidae of the world placed the genus along with the genera *Gaurax* Loew, *Gampsocera* Schiner and *Pseudogaurax* Malloch under the *Gaurax* genus group proposed by him. However, Nartshuk (1983, 1987) in her revisionary works on Chloropidae raised the *Gaurax* genus group to the tribe Botanobiini and apart from the above four genera included five more genera namely, *Eugaurax* Malloch, *Hapleginella* Duda, *Leucochaeta* Becker, *Pselaphia* Becker and *Pterogaurax* Duda under the tribe. Of these nine genera only *Gampsocera* Schiner, *Pseudogaurax* Malloch, *Hapleginella* Duda and *Cestoplectus* Lamb are known from India.

Cestoplectus is a small genus earlier known by the type species *C. intuens* Lamb distributed in Sri Lanka, India and Malaysia. In the Catalogue of life 2010, *Cestoplectus brachycephalus* (Frey) and *Cestoplectus hippelatinus* (Frey) described by Frey (1923) from Philippines under *Gaurax* Loew were transferred to *Cestoplectus*. Later Cherian (2011) described one more species, *maculatus* Cherian from India under the genus. He redefined the genus based also on

* Author for correspondence

maculatus and incorporated characters not given in the original description of Lamb (1918) and in the revisionary work of Andersson (1977).

A new species, *C. carinatus* from Kerala, India is described here, notes on species represented in India are added and a key to all the known species of the world is given. Of the five species, including the new one described here, *brachycephalus* and *hippelatinus* are distributed only in Philippines, *maculatus* and *carinatus*, sp. n. are endemic to India and *intuens* is found in Sri Lanka, India and Malaysia.

MATERIAL EXAMINED

The type specimen of the new species is retained in the collections of the Department of Zoology, University of Kerala, Trivandrum and shall later be deposited in the National Zoological Collections, Western Ghats Regional Center, Zoological Survey of India, Kozhikode (Calicut).

Morphology nomenclature is followed after Mc Alpine et al. (1981).

RESULTS AND DISCUSSION

Genus *Cestoplectus* Lamb

1918. *Cestoplectus* Lamb. *Ann. Mag. nat. Hist.*, 9(1): 390. Type species: *Cestoplectus intuens* Lamb. By original designation.

Diagnostic characters:

Medium sized partly yellow species with broad head, extremely short and shiny frontal triangle and densely hairy eyes.

Head very broad; frons wider than long or longer than wide, not projecting beyond anterior margin of eye; frontal triangle extremely short, present as a narrow shining area in front of anterior ocellus; face wider than long; facial carina narrow but very rarely broad, reaching from two-thirds to rarely whole length of frons; basal antennal segments usually yellow; *ant* 3 black, reniform to oval, often 2x as wide as long; arista dark, slender, distinctly pubescent; gena less than half as wide as *ant* 3; eyes densely pubescent; head bristles slender but *ovt* and *pvt* bristle like; *orb* about 10, reclinate; *if* not prominent, arranged almost in a row just along outer margin of frontal triangle. Thorax narrower than head; scutum moderately convex, tomentose, with prominent whitish yellow hairs, with or without longitudinal stripes; pleura with or without dark maculae especially on *kepst*; scutellum somewhat rounded, with flattened tomentose disk and hairs as on scutum; 1 *dc* indistinct or weak; *npl* 1+2; *pa* 2 not developed; *as* almost as long as scutellum; *ss* 1-2; haltere orange or infuscated; wing of *Gaurax*-type; discal cell broadened; legs rather long; tibial organ long and prominent, appearing to project a little above tibial surface; abdomen black, densely grey tomentose with whitish yellow hairs; female cerci very slender with fairly dense pale or dark hairs.

Distribution: Oriental Region

As mentioned earlier, this rare Oriental genus is hitherto known by four species, *C. intuens* Lamb, *C. brachycephalus* (Frey), *C. hippelatinus* (Frey) and *C. maculatus* Cherian. A new species *C. carinatus* from Kerala, India is described here.

Key to species of *Cestoplectus* Lamb

1. Scutum reddish to brownish yellow with four dark to black longitudinal bands.....2
 - Scutum entirely black or black with yellow tinge at sides and without longitudinal bands.....4
2. Eye with short pubescence; antenna entirely black; frons with short, narrow, black fronal triangle; only *ss* 1 present; terminal sectors of R_{4+5} and M_{1+2} almost parallel.....*brachycephalus* (Frey)

Eye with well developed dense pubescence; *ant* 2 yellow; frons with short, narrow, yellow frontal triangle; *ss* 1 and *ss* 2 present; terminal sectors of R_{4+5} and M_{1+2} diverging distally.....3
3. Facial carina triangular, not reaching beyond two-thirds length of face; *h* 1 not developed; scutellum brownish yellow; terminal sector of M_{1+2} joining costa near apex of wing..... *intuens* Lamb

Facial carina very broad, reaching epistomal margin; *h* 1 developed; scutellum brownish black; terminal sector of M_{1+2} joins costa beyond apex of wing*carinatus* sp. n.
4. Frontal triangle not distinctly demarcated; scutum and scutellum shiny; haltere whitish.....*hippelatinus* (Frey)

Frontal triangle very small, polished dark brown, distinctly demarcated; scutum and scutellum densely dark grey tomentose; haltere distinctly infuscated in basal half of knob and brownish yellow distally.*maculatus* Cherian

(We have not examined the types of *C. brachycephalus* (Frey) and *C. hippelatinus* (Frey). Hence the key is partly based on the original descriptions of the two).

***Cestoplectus intuens* Lamb**

1918. *Cestoplectus intuens* Lamb, *Ann. Mag. nat. Hist.*; 9 (1): 392. Type locality: Sri Lanka: Peradeniya.

Diagnostic characters:

Head higher than long, very broad, compressed axially; frons wider than long, tomentose, with numerous *fr*; frontal triangle extremely small, shining yellow; face short with triangular carina; ant 2 yellow; ant 3, black, almost 2x as wide as long; arista dark, slender, pubescent; gena narrower than fore tibia; clypeus broad; proboscis and palpi short; head with indistinct *if*, 10 *orb*, short *oc*, well developed *pvt* and prominent *ovt*; thorax brownish yellow with dark markings; scutum tomentose with four longitudinal dark stripes; other thoracic characters as described under generic characters; wing large, of *Gaurax*-type; haltere yellow; tibial organ large; abdomen tomentose with pale hairs.

Distribution: Sri Lanka: Peradeniya; India: Madras; Malaysia: Malaya.

Remarks: This species was not examined by us and the salient features of the species given are based on the original description of Lamb (1918) supplemented by that of Andersson (1977).

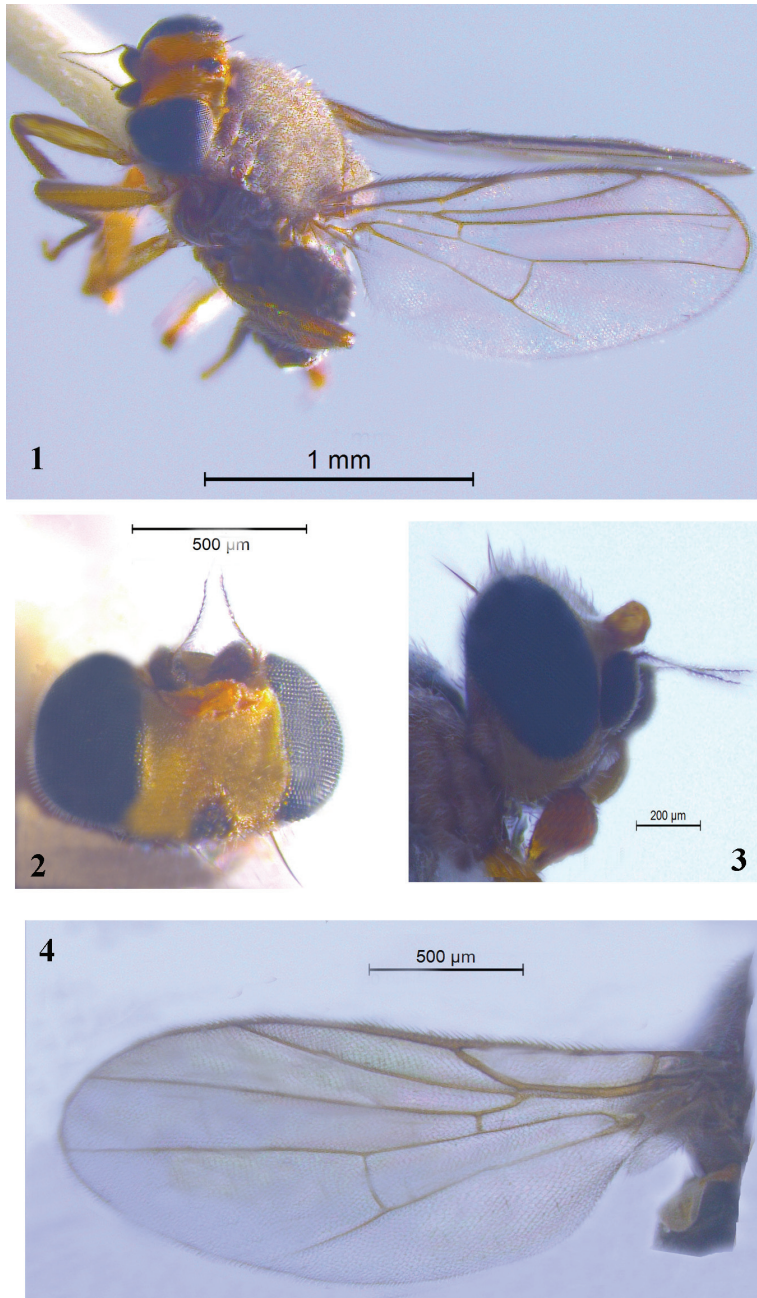
***Cestoplectus maculatus* Cherian**

2011. *Cestoplectus maculatus* Cherian, *Hexapoda*, 18(1): 1-3. Type locality: India: Kerala: Trivandrum dt., Kariavattom.

Diagnostic characters: Head higher than long with very small frontal triangle; facial carina triangular and running as a low ridge to a little beyond middle of face; antennae widely separated at base and arista slightly thickened at base; gena with well developed oral setae arranged in two rows; postgena narrower than in *intuens* Lamb; eye suboval with vertical long axis; parafacilaia indistinct; *ivt* slender, unlike in *intuens* distinct, about 0.4x the *ovt*; scutum dull black, densely dark tomentose with diffused yellow tinge in notopleural area; dark longitudinal stripes on scutum absent; *kepst* with black macula; scutellum flattened with *as* and only 1 *ss*; wing hyaline with deeply dark brown veins; proportions of costal sectors 2 to 4 in the ratio 18:13:9; terminal sectors of R_{4+5} and M_{1+2} diverging distally; discal cell rather large, conspicuously widening distally; haltere deeply infuscated in basal half and brownish yellow distally; coxae, trochanters, tibiae and femora infuscated; tibial organ well developed; female cerci slender with well developed hairs.

Length: Female 2.86 mm; wing 2.73 mm

Specimen examined: Holotype: Female: Kerala: Trivandrum Dist., Kariavattom, 25 m, 8.xii.2005, Coll. A. K. Shinimol.



Plates: *Cestoplectus carinatus* sp. n.:

1. Female fly; 2. Head-dorsal view; 3. Head profile showing bulging ptilinum; 4. Wing

Remarks: *C. maculatus* shows close affinities to *intuens* Lamb but in the former frontal triangle is infuscated, *ivt* is well developed, scutum is predominantly dull black and is without dark longitudinal bands, *kepst* is yellow with black macula and haltere is infuscated in basal half where as in *intuens* frontal triangle is orange, *ivt* is indistinct, scutum is brownish yellow with four dark longitudinal bands, *kepst* is without black macula and haltere is entirely orange.

This species has not been recorded since it was originally published and the male is unknown.

Though in the abstract, keywords, key to species and under remarks the name of the species *C. maculatus* was correctly given in the original description (Cherian, 2011) yet under the caption of description of the species it was wrongly given *maculates*. *C. maculatus* is the correct name of the species.

***Cestoplectus carinatus*, sp. n.** (Pls. 1-4)

urn:lsid:zoobank.org:act:00E24E6B-43DB-4132-B79C-F4AF759A47A1

Female (Pl. 1), *Head* (Pls. 2-3): Higher than long; frons brownish yellow with numerous pale yellow *fr*; frontal triangle small, deeply brownish yellow, polished and shiny, extending narrowly a little beyond middle of frons; the newly emerged holotype fly is with a bulging ptilinum. Antenna brownish yellow, *ant* 3 oblong arista black, slightly thickened at base. Face deeply concave as in *maculatus*, tomentose, brownish yellow; facial carina well developed, running as a low but broad ridge to epistomal margin unlike in other species of the genus. Antennae widely separated at base; basal antennal segments orange; *ant* 3 wholly deeply black, almost 0.7x as long as wide; arista a little thickened at base; flagellum slender, black with well developed fairly dense concolourous pubescence. Gena about 0.25 x as wide as *ant* 3, dull brownish yellow with well developed oral setae arranged in two rows; vibrissal corner rounded, receding; oral vibrissae short and slender; postgena narrower than in *intuens* Lamb with well developed long pale hairs. Eye oval with vertical long axis; a row of prominent white hairs present along posterior margin of eye and a few more at vertex and in the area below; *ovt* a little longer than the cruciate *pvt*, *ivt* indistinct; rest of the cephalic bristles almost as in *maculatus*.

Thorax: Scutum wider than long, densely grey tomentose, brownish yellow in ground colour with two broad median longitudinal, black bands commencing from the neck region and another two black lateral bands each commencing from behind humeral callus; each of these bands is weakly separated by a yellow streak which almost merge below middle of scutum leaving some remnants of ground colour along its sides; scutellum brownish black, rounded with flattened disc; dorsum of thorax with dense pale yellow hairs; thoracic bristles as in *maculatus* but *ss* 2 though weak is developed unlike in *maculatus*

Wing (Pl. 4): Proportions of costal sectors 2 to 4 in the ratio 6: 4: 2; r-m cross-vein distad of middle of discal cell, opposite 0.57 of its length; terminal sectors of R_{4+5} and M_{1+2} gradually

diverging distally, the latter joining costa beyond apex of wing. Haltere in basal half dorsally weakly infuscated, distally greyish yellow.

Legs: Mostly yellow but most femora and some tibiae and tarsi infuscated as in *maculatus*; tibial organ large and oval.

Abdomen dull brownish black; female cerci slender, with dense hairs.

Length: Female 2.12 mm; wing 1.72 mm.

Holotype: Female: INDIA: Kerala: Alappuzha: Pathiyoor, 25 m, 22-ii-2011, Coll: Jyothi Tilak.

Etymology: The specific name refers to the broad facial carina of the species.

Remarks: *C. carinatus* differs from all known species of the genus in possessing very broad facial carina which reaches epistomal margin. It keys near *intuens* from which it differs in having well developed *h* 1 bristle, brownish black scutellum and in terminal sector of M_{1+2} joining costa beyond apex of wing where as in *intuens* *h* 1 is not developed, scutellum is brownish yellow and M_{1+2} joins costa at apex of wing.

ACKNOWLEDGEMENT

We are grateful to the Department of Science and Technology, Govt. of India for financial support and to the Head of the Dept. of Zoology, University of Kerala for facilities for work.

ABBREVIATIONS

anepm - anepimeron; *anepst* - anepisternum; *ant 2* - second antennal segment; *ant 3* - third antennal segment; *as* - apical scutellar bristle; *1 dc* - first dorsocentral bristle; *fr* - frontal hair; *h* - humeral bristle; *if* - interfrontal bristle; *ivt* - inner vertical bristle; *kepst* - katepisternum; *npl* - notopleural bristle; *oc* - ocellar bristle; *orb* - frontoorbital bristle; *ovt* - outer vertical bristle; *pa* - postalar bristle; *pvt* - postvertical bristle; *ss* - subapical scutellar bristle.

REFERENCES

- Andersson H. (1977) Taxonomic and Phylogenetic studies on Chloropidae (Diptera) with special reference to Old World genera. Ent. Scand. Suppl., 8: 1-200.
- Cherian P.T. (2011) Description of a new species of genus *Cestoplectus* Lamb (Diptera: Chloropidae: Oscinellini: Botanobiini) from India. Hexapoda, 18(1): 1-3.
- Frey R. (1923) Philippinische Diptera. I. Fam. Chloropidae. Notulae Ent. Helsingfors, 3: 71-83, 97-112.
- Lamb C.G. (1918) Notes on exotic Chloropidae. Ann. Mag. nat. Hist. London. 9 (1): 385-399.
- Mc Alpine J.F. (1981) Morphology and terminology of adults. In: Manual of Nearctic Diptera. Research Branch Agriculture, Canada. Monograph, 1(27): 9-64.

- Nartshuk E.P. (1983) A system of Superfamily Chloropoidae (Diptera: Cyclorrhapha). Ent. Oboz., 62 (3): 638-648.
- Nartshuk E.P. (1987) Grass flies (Diptera: Chloropoidea). Their Systematics, evolution and biology. Trud. Zool. Inst. Acad., Nauk, USSR, 36: 1– 280. (In Russian).
<http://www.catalogueoflife.org/testcoll/info/ac>

(Received 17 August 2015; accepted 17 September 2015)