

**ON A NEW SUBGENUS OF *PIPUNCULUS* AND
A NEW SPECIES OF *DORYLOMORPHA*
(DIPTERA: PIPUNCULIDAE)
FROM INDIA**

V.C. Kapoor and J.S. Grewal¹

Abstract. A new subgenus, *Claraeosphaera*, type-species, *C. suranganiensis*, and a new species, *Dorylomorpha pterae*, are described and illustrated. A key to the Oriental subgenera of *Pipunculus* is also given.

During a recent survey of Himachal Pradesh, a good number of pipunculid flies were collected. Two specimens belonging to the genus *Dorylomorpha* Aczél were identified. Hitherto, this genus has been known in India by only 1 species, *D. quartaria* (Brunetti) and by 6 in the Oriental Region as a whole. The 2 specimens are described herein as *Dorylomorpha pterae*, n. sp. A new subgenus, *Claraeosphaera*, with *C. suranganiensis* as its type-species, is erected on the basis of a specimen showing its own peculiar characteristics and affinities with the subgenera *Claraeola* Aczél and *Cephalosphaera* Enderlein. A key to the Oriental subgenera of *Pipunculus* is also presented.

Holotypes will be deposited in the National Pusa Collection, Indian Agricultural Research Institute, New Delhi (NPC) and paratypes will be sent to the U.S. National Museum, Washington, D.C. (USNM).

Genus *Pipunculus* Latreille

***Claraeosphaera* Kapoor & Grewal, new subgenus**

Type-species: *Pipunculus (Claraeosphaera) suranganiensis*, n. sp.

Small; blackish yellow; ocellar bristles absent; 3rd antennal segment acuminate, ca. $1\frac{1}{2}\times$ as long as 1st and 2nd segments; thorax without propleural fan, dusty, broader than long; scutellum inflated; legs yellow; hind trochanter trapezoidal; wings longer than body, appendix of 4th vein (M_{1+2}) short, not reaching wing margin, situated at a distance equal to length of crossvein m, appendix of crossvein m located at approximately anterior $\frac{1}{4}$, axillary lobe not well developed, a small incision present between axillary and alula; abdomen clavate, yellow-brown banded.

This subgenus fits between the subgenera *Claraeola* Aczél and *Cephalosphaera* Enderlein. With the former it shares the following characters: bare propleura, presence of stigma, vein M_{1+2} forked, and M_2 present as an appendix of the 4th vein. It differs from *Claraeola* by having the 3rd antennal segment acuminate, larger than 1st and 2nd combined, and the 3rd costal section $2\times$ the length of the 4th section. With

1. Department of Zoology, Punjab Agricultural University, Ludhiana-141004, India.

Cephalosphaera it shares the following characters: lacking ocellars, well-developed mesonotal and scutellar bristles, and vein M_{1+2} appendiculate. It differs from *Cephalosphaera* by the position of crossvein r-m and the presence of an incision between the axillary lobe and alula. It differs from both *Claraeola* and *Cephalosphaera* by the presence of an appendix on crossvein m. Because of its resemblance to both subgenera, it has been named *Claraeosphaera*.

KEY TO ORIENTAL SUBGENERA OF *PIPUNCULUS* LATREILLE

1. Third costal section shorter than 4th and lacking a distinct stigma
 genera other than *Pipunculus*
 Third costal section equal or longer than 4th, distinct stigma present
 genus *Pipunculus* 2
2. Vein M_{1+2} with an appendix beyond crossvein m 3
 Vein M_{1+2} without an appendix 5
3. Crossvein m with an appendix **Claraeosphaera**, n. subgen. 4
 Crossvein m without an appendix 4
4. Propleural fan present **Cephalosphaera** Enderlein
 Propleural fan absent **Claraeola** Aczél
5. Propleural fan present 6
 Propleural fan absent **Eudorylas** Aczél
6. Notopleural calli or anterior mesonotal portion to at least level of suture, densely
 setose, dorsocentral hairs not distinguishable **Pipunculus**
 Notopleural calli or mesonotum sparsely setose, a single row (rarely 2) of setae ex-
 tending down each dorsocentral line, area in between bare **Cephalops** Fallén

***Pipunculus (Claraeosphaera) suranganiensis* Kapoor & Grewal, new species**

Fig. 1-5

♀. Small, black with abdomen yellow. *Head* (Fig. 1) black, broader than thorax. Occiput swollen with small whitish hair. Ocellar triangle black, ocellar bristles absent. Eyes reddish black, not holoptic. Frons black with whitish dust. Antennae brownish yellow; 1st segment brown; 2nd brownish yellow with 2 small dark bristles on dorsal surface and 1 long black bristle on ventral; 3rd segment pale yellow, $1\frac{1}{2} \times$ as long as 1st and 2nd combined; 3rd segment pointed apically; arista black except yellow at base, bare (Fig. 2). Face black with silvery pollinose, oral groove with well-developed proboscis; genal plates triangular with a few whitish small hairs. *Thorax* black, as long as head; dorsum covered with grayish dust; chaetotaxy rudimentary; humeral plates yellow; propleural fan absent; halteres yellowish with knob black apically; scutellum yellowish, inflated. Legs yellow; hind trochanter trapezoidal (Fig. 4); femora yellow; fore and mid femora with 1 row of black setae dorsoapically and 1 ventroapically; hind femur with 2 rows of black setae dorsoapically and 1 ventroapically; tibiae yellow with 2 rows of black setae dorsally and 4 rows ventrally; tarsi yellow with black setae and pretarsal with 6-9 large black bristles; pulvilli yellow, well developed; claws sickle-shaped, yellow with tip black. *Wing* (Fig. 3) hyaline; humeral crossvein oblique; 3rd section of costa $2 \times$ as long as 4th; 3rd and 4th costal section $1\frac{1}{2} \times$ as long as 5th, grayish black, stigma occupying whole of angle of R_1 with costa; r-m crossvein situated at about basal $\frac{2}{5}$ of discal cell; appendix of 4th vein (M_{1+2}) short, not reaching margin and situated at a distance equal to length of m crossvein, appendix of crossvein m located at about anterior $\frac{1}{4}$; axillary lobe not well developed, a small incision present between axillary lobe and alula. *Abdomen* (Fig. 5) clavate, yellowish brown. Terga yellow

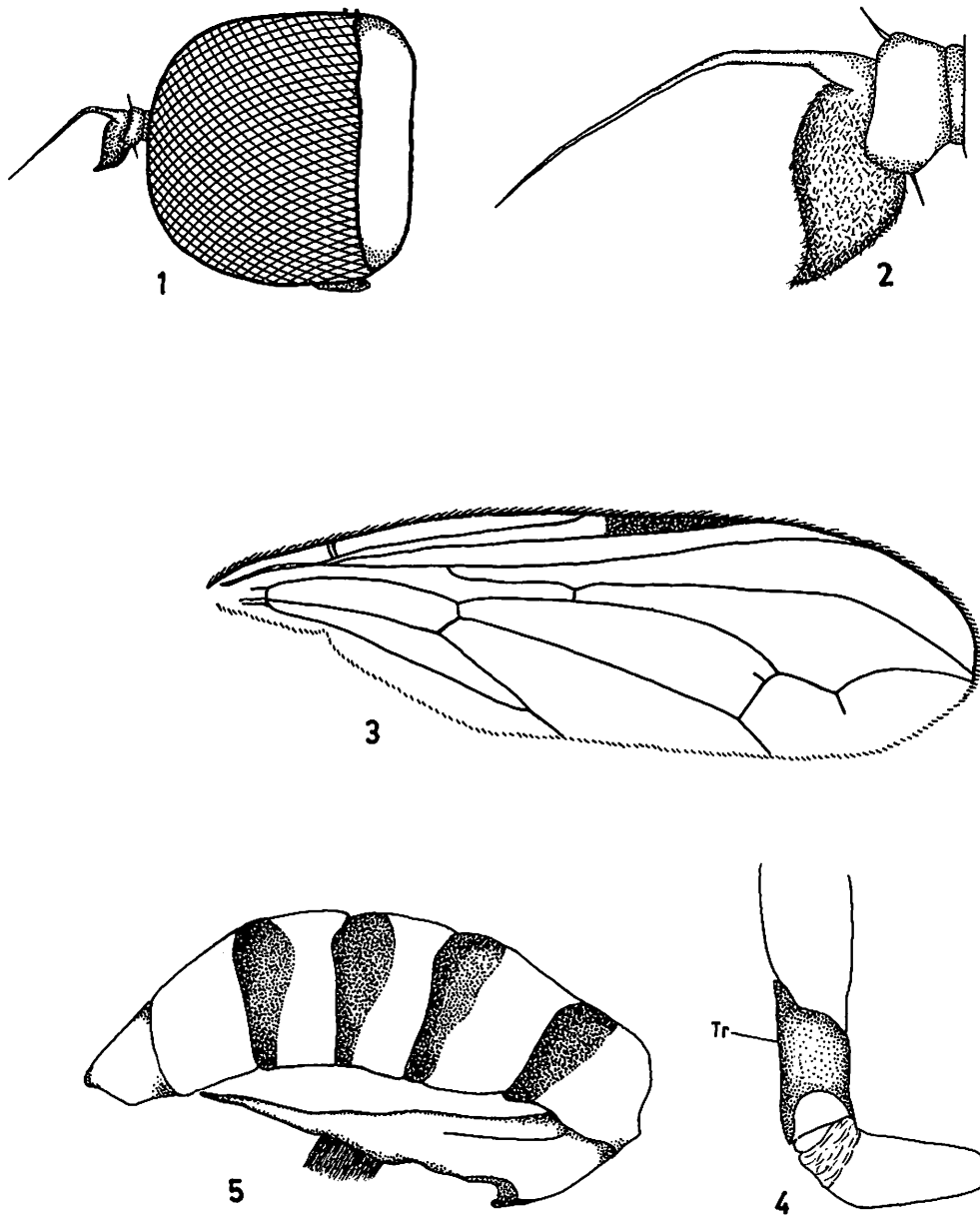
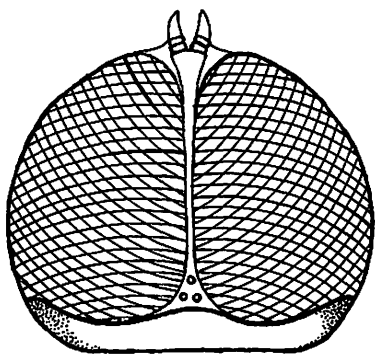


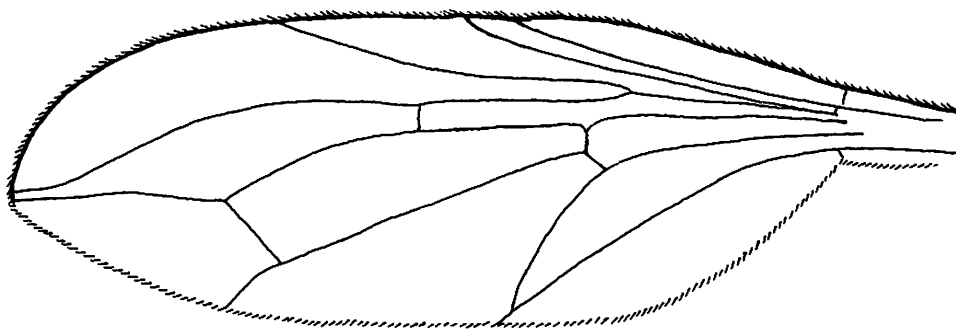
FIG. 1-5. *Pipunculus (Claraeosphaera) suranganiensis*: 1, head (side view); 2, antenna; 3, wing; 4, abdomen with ovipositor; 5, hind trochanter (Tr).



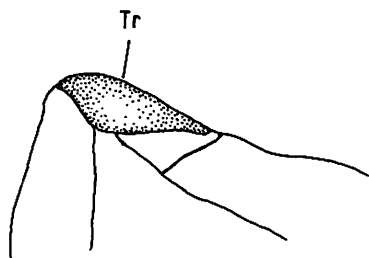
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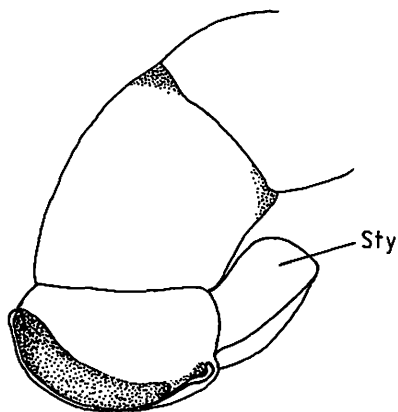
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FIG. 6-10. *Dorylomorpha pterae*: 6, head (top view); 7, antenna; 8, wing; 9, hind trochanter (Tr); 10, ♂ abdomen, showing expanded surstyli (Sty).

with brownish bands at anterior margins, hind border black, venter entirely brown. Ovipositor (Fig. 5) large and pointed, reaching to base of 2nd sternum; brown. Sixth abdominal tergum equal in length to 5th; hind margin entire, lacking groove or cleft.

Length of body: 4 mm. Expansion of wing: 5 mm.

♂. Unknown.

Types. Holotype ♀, INDIA: Himachal Pradesh: Surangani, Chamba, 4.VI.1984 (V.K. Kohli) (NPC).

Etymology. The species' name is derived from the type-locality, Surangani.

Genus *Dorylomorpha* Aczél

Dorylomorpha pterae Kapoor & Grewal, new species

Fig. 6–10

♂. Black, small. *Head* (Fig. 6) hemispherical, broader than thorax. Eyes narrowly separated on front, median portion of frons slightly wider than median ocellus; upper ½ of frons dull black and lower ½ with silvery pubescence; middle portion of frons somewhat convex longitudinally. Antennae (Fig. 7) brownish black; 2nd segment dark brown with 1 black bristle dorsally and another ventrally; 3rd segment acuminate, with thick yellow pubescence; arista black, bare. Face thickly white pubescent; hind margin of compound eyes indented on upper ½ so that occiput much broader on upper portion; gena narrow, black. *Thorax* shining black; metanotum and pleurae covered with whitish dust; humeral plates and halteres yellow. *Legs*: coxae black with yellow apices; hind trochanter shining black, triangular (Fig. 9); femora chiefly black but yellow distally; tibiae black medially, ½ apical portion and distal tip yellow; tarsi brownish yellow, covered with thick black hairs; pulvilli yellow; claws yellow with black tips. *Wing* (Fig. 8) hyaline; 3rd costal section short approximately ¼ of 4th section; 5th costal section approximately 1½ × 3rd and 4th sections combined; crossvein r-m situated near middle of discal cell (1st M₂); last section of M₁₊₂ approximately straight. *Abdomen* shining black with terminal portion somewhat rufous; 8th tergum subequal in length to 5th, 5th 1½ × 8th; well-developed membranous area extending slightly over right side of apex; surstyli large, black, expanded and convex on outer margin but straight on inner one (Fig. 10).

Length of body: 3 mm. Expansion of wing: 3.5 mm.

♀. Unknown.

Types. Holotype ♂, INDIA: Himachal Pradesh: Subathu, 23.X.1982 (L.S. Arya) (NPC). 1♂ paratype, same data as holotype (USNM).

Etymology. This species was named for its peculiar wing venation.

Remarks. This species comes close to *D. quartaria* (Brunetti) and shares the small body size and mostly black abdomen and legs. It differs by the position of crossvein r-m, which is at ⅔ of the discal cell (Fig. 8), and the structure of the surstyli, which are more expanded in *pterae*.

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REFERENCES

- Albrecht, A. 1979. Descriptions of seven new species of *Dorylomorpha* Aczél from Europe (Diptera: Pipunculidae). *Entomol. Scand.* **10**: 211–18.

- Delfinado, M.D. & D.E. Hardy.** 1975. *A catalogue of the Diptera of the Oriental Region*. Vol. 2. Univ. Press Hawaii. 459 p.
- Hardy, D.E.** 1943. A revision of Nearctic Dorilaidae (Pipunculidae). *Univ. Kansas Sci. Bull.* **29**: 1-231.
1968. Bibionidae and Pipunculidae of the Philippines and Bismarck Islands (Diptera). *Entomol. Medd.* **36**: 417-507.
1972. Studies on Oriental Pipunculidae (Diptera). *Orient. Insects Suppl.* **2**: 1-76.