

BRIEF COMMUNICATION

THE SUBGENUS *HIRTODROSOPHILA* OF THE GENUS  
*DROSOPHILA* (DIPTERA : DROSOPHILIDAE)  
IN INDIA

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(Received 9 June 1989)

Taxonomic account of one new species, *Drosophila longiphallus* and new distribution records of two other species and one subspecies, *D. latifrontata*, *D. paralatifrontata*, and *D. latifrontata yakuensis* respectively are given. Key to the Indian species of *Hirtodrosophila* is also provided.

(Key words: New species, *Hirtodrosophila*)

The subgenus *Hirtodrosophila* Duda, 1923 of the genus *Drosophila* Fallen, 1823 comprises mostly fungivorous species. This subgenus, as now understood, contains over 100 species of *Drosophila* (Frota-Pessoa, 1945; Okada, 1967; Bock, 1982). Despite its cosmopolitan distribution, our knowledge of Indian species of *Hirtodrosophila* still remains very scanty and fragmentary. Altogether only four species namely *D. confusa* Staeger, *D. fascipennis* Okada, *D. neokurokawai* Singh & Gupta and *D. pentavittata* Gupta & Ray-Chaudhuri are known from India to-date (Gupta, 1981, 1985). This report deals with the description of three more species and one subspecies of this subgenus from India.

The species for the present study were collected from western ghats (S. India). Since species of *Hirtodrosophila* are fungivorous, all collections were therefore, made by net sweeping over a variety of mushrooms and other fungi or by aspirating them directly. The collected flies were then preserved in 70% alcohol on the spot itself. The taxonomic study was made following the procedure adopted by Gupta (1969).

Genus *Drosophila* Fallen

*Drosophila* Fallen, 1823, Diptera Sueciae Geomyz, 2:4. Type species: *Musca funebris* Fabricius, Sweden.

Subgenus *Hirtodrosophila* Duda

*Hirtodrosophila* Duda, 1923, Mus. Nat. Hungarici Ann. 22:41. Type species: *Drosophila latifrontata* Frota-Pessoa, Taiwan.

Third antennal segment considerably large and with unusually long bristles, arista with usually one ventral branch, anterior reclinate orbital fine, ventral receptacle in the form of loops folded flat against the ventral surface of vagina. Fungivorous species.

26247

*Drosophila longiphallus* sp. nov.

Average length of the body: 3.22 mm (♂), 3.33 mm (♀).

*Head*, ♂♀: Arista with three dorsal and one ventral branches besides a large terminal fork. Antennae with second segment yellow; third segment elongate, brownish, with unusually long bristles. Frons including ocellar triangle pale to tan. Orbitals in

ratio of 2:1:2. Anterior reclinate orbital equally distinct from proclinate and posterior reclinate orbitals. Vibrissa single, strong; second oral not developed. Palpi pale yellow, distally somewhat darker, with only one prominent apical seta. Carina yellowish brown, low. Face brown. Cheek pale, brownish at margin, greatest width of the cheek  $1/5$  the greatest diameter of the eye. Clypeus dark brown. Eye dark red.

Thorax ♂♀: Mesonotum yellowish brown with three pairs of dark brown stripes, one pair of stripes along dorsocentral lines, another pair outside dorsocentral lines, incomplete, reaching anteriorly up to suture line and the outermost pair of stripes partially interrupted in middle. Thoracic pleura with three dark brown stripes. Acrostichal hairs in 8 irregular rows between dorsocentrals. Anterior scutellars convergent, posterior scutellars crossing each other. Distance between the anterior and posterior dorsocentrals about  $1/3$  the distance between the two anterior dorsocentrals. Humeral two, subequal. Sterno index 0.7.

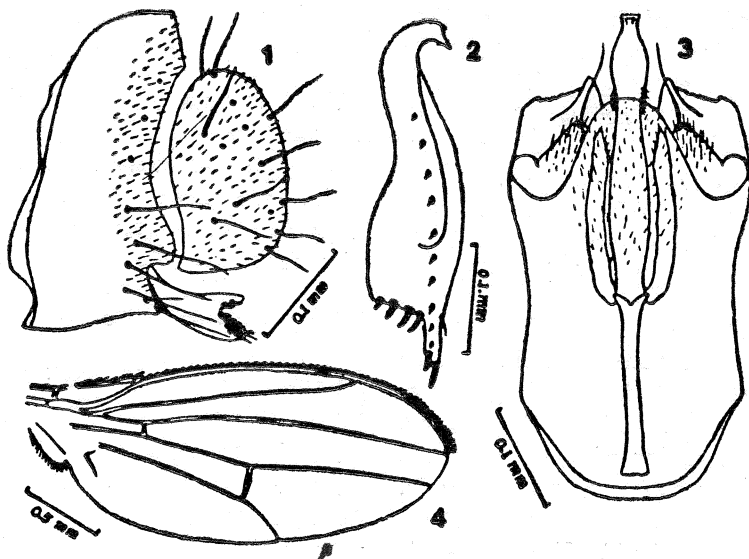
Legs pale yellow. Preapicals on all three tibiae; apicals on second tibia.

*Wings*, ♂♀ (Fig. 4): Clear. Approximate wing vein indices: C-index 2.0; 4V-index 1.6; 4C-index 1.0; 5X-index 1.5. C3 fringe 2/5. Halteres yellow.

*Abdomen*, ♂♀: Tergites yellowish, with brownish bands, protruding upward laterally.

*Periphallic organs* (Fig. 1): Epandrium broad, pubescent, with a small invagination at the insertion of surstylus and with 9 long bristles along posterior margin. Cercus oval, pubescent, with about 15 large bristles. Surstylus narrow, longer than broad, with 2 + 4 teeth arranged in a concavity.

*Phallic organs* (Fig. 2): Aedeagus unusually long, straight with a blunt tip, somewhat swollen submedially and with several fine hairs on dorsal surface; basal apodeme of aedeagus straight, smaller than aedeagus. Anterior gonapophyses elongate, apically with a few sensilla. Novasternum with a pair of long submedian spines. Ventral fragma longer than broad, distally rounded.



Figs. 1-4. *Drosophila longihallus* sp. nov.: 1. Periphallic organs; 2. Phallic organs; 3. Egg-guide; 4. Male wing.

*Egg-guide* (Fig. 3): Lobe orange yellow, long, abruptly narrowing apically and terminating in two stout unequal black teeth, with four obliquely placed discal teeth and about 10 minute marginal teeth. Basal isthmus short.

**Holotype** ♂, INDIA, KARNATAKA, Coorg district, Virajpet, June 1988 (Sundaran and Gupta). **Paratype**: 19 ♂♂ 33 ♀♀, same locality and collectors as holotype.

Deposited in the Museum of Department of Zoology, Banaras Hindu University, Varanasi, India and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan. , 2♂, 2♀.

*Relationships*: The presence of considerably large third antennal segment with unusually long bristles, arista with one branch ventrally and the fine anterior reclinate orbital in this species justify its inclusion in the subgenus *Hirtodrosophila* of the genus *Drosophila*, wherein it closely resembles *D. mediohispidata* Okada (1967) in general morphology, but clearly differs from it in having surstylus with 2+4 teeth (surstylus with 16 pointed black bristles irregularly arranged in *mediohispidata*), unusually long aedeagus with a blunt tip (aedeagus narrowly pointed apically in *mediohispidata*) and in many other characters of genitalia.

*Distribution*: INDIA.

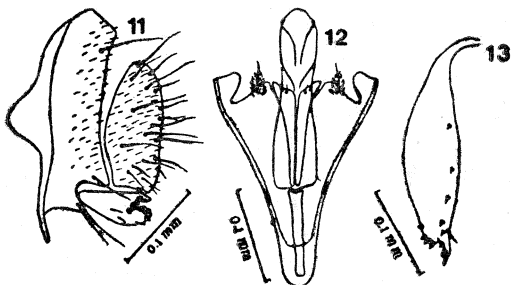
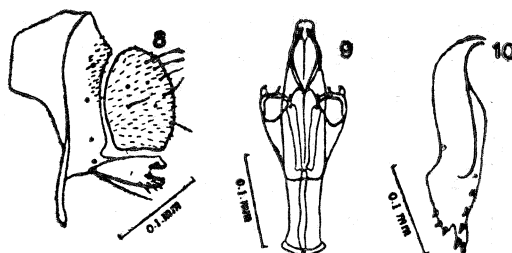
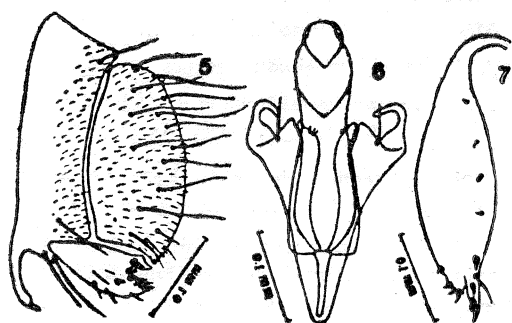


Fig. 5-7. *Drosophila latifrontata*: 5. Periphallalic organs; 6. Phallic organs; 7. Egg-guide. Figs. 8-10. *Drosophila paralatifrontata*: 8. Periphallalic organs; 9. Phallic organs; 10. Egg-guide. Figs. 11-13. *Drosophila latifrontata yakuensis*: 11. Periphallalic organs; 12. Phallic organs; 13. Egg-guide.

<sup>26245</sup> ***Drosophila latifrontata*** Frota-Pessoa.

*D. latifrontata* Frota-Pessoa, 1945, Rev. Brasil. Bio. 5: 469-483.

*Head*, ♂ ♀: Orbitals in ratio of 2:1:2. Face yellow. Clypeus pale brown. Vibrissa single.

*Thorax*, ♂ ♀: Distance between anterior and posterior dorso-centrals 1/2 the distance between the two anterior dorsocentrals.

*Abdomen*, ♂ ♀: Tergites whitish yellow.

Other details of morphological characters as well as male and female genital structures (Figs. 5-7) as described by Okada (1967).

*Specimen examined*: INDIA, KARNATAKA, Coorg district, Virajpet, 8 ♂♂ 2 ♀♀, June 1988.

*Distribution*: Formosa, Sumatra, Japan, India (New record).

26245 ✓ *Drosophila paralatifrontata* Bachli.

*D. paralatifrontata* Bachli, 1973, Mitt. Zool Mus. Berlin, Bd. 49, Heft 2.

*Head*, ♂ ♀: Orbitals in ratio of 2:1:2. Greatest width of cheek 1/4 the greatest diameter of the eye.

*Thorax*, ♂ ♀: Distance between anterior and posterior dorsocentrals 1/2 the distance between the two anterior dorsocentrals.

Other details of morphological characters as well as male and female genitalia (Figs. 8–10) as described by Bachli (1973).

*Specimen examined*: INDIA, KARNATAKA, Coorg district, Virajpet 18 ♂♂ 23 ♀♀, June 1988.

*Distribution*: Formosa, Okinawa, India (New record).

26280 ✓ *Drosophila latifrontata yakuensis* Okada.

*D. latifrontata yakuensis* Okada, 1967, Mushi, 41: 1–36.

This species closely resembles *D. latifrontata* Frota-Pessoa, but can be easily separated from the latter in having all the abdominal tergites uniformly dark, distally more gently dilated aedeagus and novasternum with a pair of spiny processes (Figs. 11–13).

Other details as described by Okada (1967).

*Specimen examined*: INDIA, KARNATAKA, Coorg district, Virajpet, 12 ♂♂ 25 ♀♀, June 1988.

*Distribution*: Japan, India (New record).

*Remarks*: The Indian form of this subspecies differs from the Japanese form des-

cribed by Okada in having uniformly dark abdominal tergites (abdominal bands narrower and sharply demarcated in Japanese form.).

Key to Indian species of *Hirtodrosophila*

- 1 Wing with black patches ..... *fascipennis* Okada
- Wing without black patches ..... 2
- 2 Mesonotum striped ..... 3
- Mesonotum not striped ..... 4
- 3 Abdomen with longitudinal stripes .....
- ..... *pentavittata* Gupta & Ray-Chaudhuri
- Abdomen without longitudinal stripes ..... 5
- 4 Abdominal tergites with medially and laterally interrupted bands..... *confusa* Staeger
- Abdominal tergites with brownish uninterrupted bands ..... *neokurokawai* Gupta & Singh
- 5 Thoracic pleura with three brown longitudinal stripes ..... *longiphallus* sp. nov.
- Thoracic pleura without longitudinal stripes ... 6
- 6 Novasterum with a pair of spiny process .....
- ..... *latifrontata yakuensis* Okada
- 7 Abdominal tergites whitish yellow ..... *latifrontata* Frota-Pessoa
- Abdominal tergites black except two yellow terminal tergites ..... *paralatifrontata* Bachli

## ACKNOWLEDGEMENTS

The authors are indebted to Dr. T. Okada, Emeritus Professor, Department of Biology, Tokyo Metropolitan University, Tokyo, Japan for his kindness to confirm the identifications of the species and to Head of the Zoology Department, Banaras Hindu University for providing facilities. Thanks are also due to University Grants Commission, New Delhi for providing a Junior Research Fellowship to A. K. S. under Centre of Advanced Study in Zoology, Banaras Hindu University.

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