

## The genus *Microdrosophila* MALLOCH 1921 in India (Insecta: Diptera: Drosophilidae).

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With 11 figures.

**Abstract:** Altogether five species of *Microdrosophila* are reported from India including the present three species. This paper provides taxonomic account of two new species, *Microdrosophila neodistincta* and *M. virajpetiensis* and also gives new distribution record of one more known species, *M. elongata* OKADA 1965 from India. Key to the Indian species of *Microdrosophila* is constructed.

From the perusal of literature it seems that the Drosophilidae are fairly distributed throughout the subcontinent of India. However, many of its genera are still poorly represented in India (GUPTA 1981, 1985). The genus *Microdrosophila*, comprising a total of 48 species (OKADA 1985), is represented only by two Indian species, *M. purpurata* OKADA 1956 and *M. pleurolineata* WHEELER & TAKADA 1964 (VAIDYA & GODBOLE 1976; OKADA 1985). Besides this, SINGH (1970) claims the record of one more species of *Microdrosophila* from South Andamans, but the name of this species is not known to-date. Since then no further species of *Microdrosophila* has been added to the Indian Drosophilidae. This paper deals with the description of three more species of *Microdrosophila* from India.

**Acknowledgements:** The authors are grateful to Dr. T. OKADA, Emeritus Professor, Dept. of Biology, Tokyo Metropolitan University, Setagaya-Ku, Tokyo, Japan, for his help in confirming the identifications of species and to the Head of the Zoology Dept., Banaras Hindu University, for providing laboratory facilities. One of us (A.K.S.) is also thankful to the University Grants Commission, New Delhi, for providing a fellowship under Centre of Advanced Study in Zoology, Banaras Hindu University.

### *Microdrosophila* MALLOCH 1921.

*Microdrosophila* MALLOCH, Ent. News, 32: 312.

Type species: *Drosophila quadrata* STURTEVANT 1916, Terr. typ. Alabama, USA.

Arista plumose; periorbit large and much broadened anteriorly; cheek relatively narrow, only two strong orbitals; anterior dorsocentrals placed near suture; posterior scutellars divergent; wing with distal costal break deep, C-index not over 1.5.

Figs. 1-4.

Holotype: ♂ (Accession No. VK-101), Virajpet, Coorg Distr., Karnataka, India, VI.1988, SUNDARAN & GUPTA leg.

Paratypes: 2♂♂ 11♀♀ (Accession No. VK-102, Genetics Lab. Varanasi). 1♂ 2♀♀ (SMF D 3446), ♂♀ (*Drosophila*-Collection, Dept. Biol., Tokyo Metropolitan Univ.), all same data as holotype.

The remaining alcohol preserved specimens of the paratype series along with the mounted slides of genitalia and other taxonomic structures are at present deposited in the Genetics Lab., Zool. Dept., Banaras Hindu Univ. Varanasi.

Diagnosis:  $C_3$  fringe reaching apex of 3rd vein; ♂ genitalia with two long bristly processes.

Description: Head (♂♀): Arista with 6 branches above and 1-2 below in addition to the small terminal fork. Antennae with 2. segment pale brown; 3. segment little lighter. Frons pale. Anterior reclinate orbital minute, other two strong and closely placed. Vibrissa large and single. Palpi yellowish, with 3-4 prominent setae. Carina yellowish brown, high and broadened below. Cheek yellowish, greatest width of the cheek  $\frac{1}{9}$  greatest diameter of eye. Clypeus yellow. Eyes dark red.

Thorax (♂♀): Mesonotum and scutellum unicolorous, pale yellow, with three obscure longitudinal stripes. Thoracic pleura brown on upper half. Acrostichal hairs in 8 irregular rows between dorsocentrals. Posterior scutellars divergent. Distance between anterior and posterior dorsocentrals  $\frac{3}{4}$  distance between two anterior dorsocentrals.

Wings (♂♀): Hyaline, distal costal incision rather deep, costa protruding as a thin lappet. Approximate indices: C-index 1.0; 4V-index 4.5; 4C-index 3.3; 5X-index 3.9. Two bristles at the apex of the first costal section.  $C_3$  fringe reaching apex of the third vein. Halteres yellowish brown.

Abdomen (♂♀): Uniformly brown.

Legs (♂♀): Whitish yellow, preapicals on all three tibiae; apicals on fore and mid tibiae.

Average length of the body: 2.1 mm (♂), 2.4 mm (♀).

Periphallalic organs: Epandrium narrowing below; surstylus without setae. Cercus separate, with about 10 small bristles; lower protruded portion with 7-8 scattered fine setae.

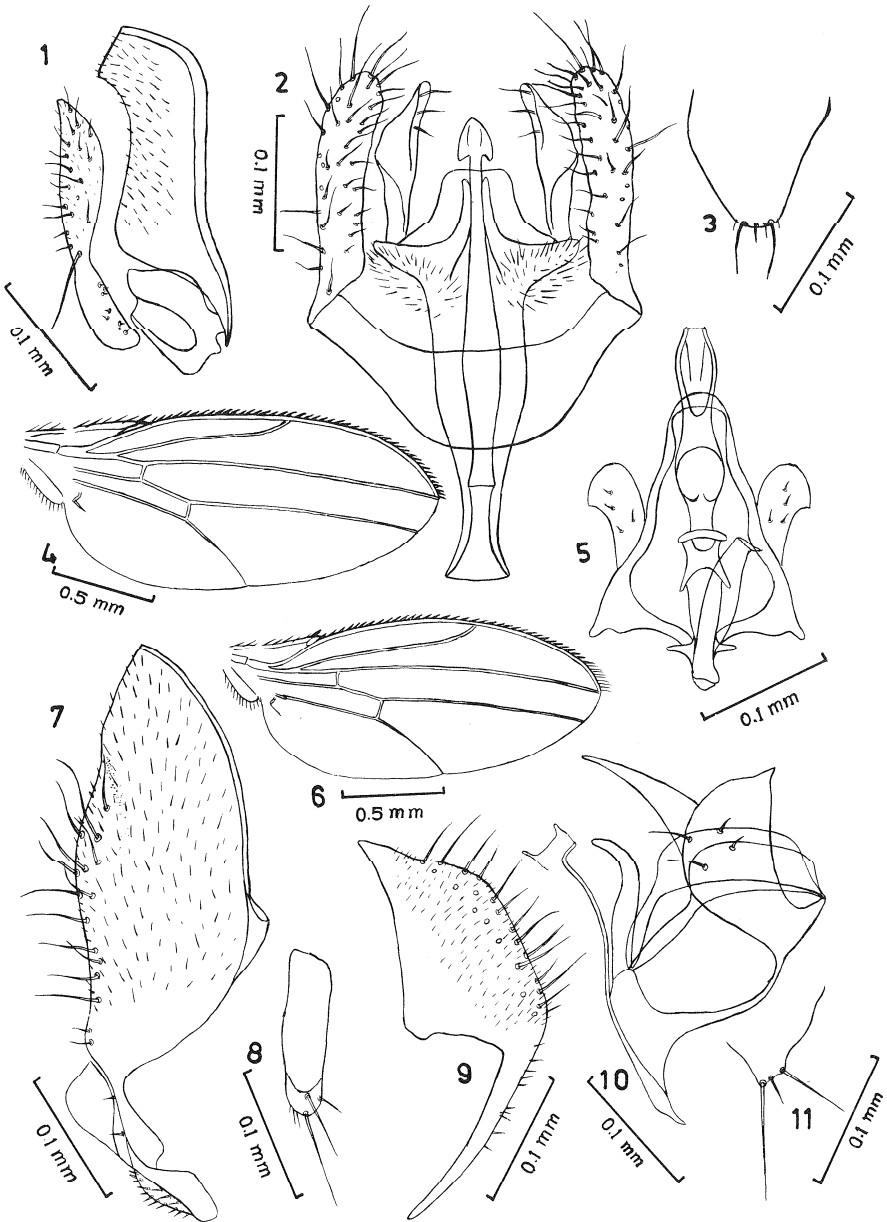
Phallic organs: Aedeagus stout. Gonapophyses large and medially somewhat broadened, with three bristles on upper half. Novasternum with long bristly lateral processes clearly seen without dissection.

Egg-guide: Lobe triangular, with two long bristles and few fine setae.

Figs. 1-4. *Microdrosophila neodistincta* n. sp. (Accession No. VK-102). — 1) Periphallalic organs; 2) phallic organs; 3) egg-guide; 4) ♂ wing.

Figs. 5-8. *Microdrosophila virajpetiensis* n. sp. (Accession No. VK-104). — 5) Phallic organs; 6) ♂ wing; 7) periphallalic organs; 8) egg-guide.

Figs. 9-11. *Microdrosophila elongata* OKADA 1965. — 9) Periphallalic organs; 10) phallic organs; 11) egg-guide.



Remarks: This species superficially resembles *M. distincta* WHEELER & TAKADA 1964 in having ♂ genitalia with two long bristly processes, but clearly differs from the latter in having scattered rows of bristles on cerci (1 row in *distincta*), surstylus without setae (setae present in *distincta*), and in several other details of the phallic organs.

26249 J *Microdrosophila virajpetiensis* n. sp.

Figs. 5-8.

Holotype: ♂ (Accession No. VK-103), Virajpet, Coorg Distr., Karnataka, India, VI.1988, SUNDARAN & GUPTA leg.

Paratypes: 7♂♂ 16♀♀ (Accession No. VK-104, Genetics Lab. Varanasi), 2♂♂ 3♀♀ (SMF D 3447), ♂♂♀♀ (*Drosophila*-Collection, Dept. Biol., Tokyo Metropolitan Univ.), all same data as holotype.

The remaining alcohol preserved specimens of the paratype series along with the mounted slides of genitalia and other taxonomic structures are at present deposited in the Genetics Lab., Zool. Dept., Banaras Hindu Univ. Varanasi.

Diagnosis: Mesonotum with four broad brown longitudinal stripes. Epanthrium with a bifurcated process below.

Description: Head (♂♀): Arista with about 6-7 branches above and 2 below in addition to the terminal fork. Antennae with 2. segment brown; 3. segment little lighter. Frons including ocellar triangle brown. Anterior reclinate orbital not distinguishable, other two orbitals placed closely. Vibrissa large and single. Palpi dark brown, with 2-3 prominent setae. Carina brown and broadened below. Cheek yellowish brown, greatest width of cheek  $\frac{1}{7}$  greatest diameter of eye. Clypeus yellowish brown. Eyes dark red.

Thorax (♂♀): Mesonotum with four broad longitudinal brown stripes. Thoracic pleura brown on upper half. Acrostichal hairs in 8 irregular rows. Distance between anterior and posterior dorsocentrals  $\frac{2}{3}$  distance between two anterior dorsocentrals.

Wings (♂♀): Hyaline. Approximate indices: C-index 1.2; 4V-index 4.3; 4C-index 3.0; 5x-index 4.0. C<sub>1</sub> fringe  $\frac{5}{6}$ . Haltere's knob dark, stalk lighter.

Abdomen (♂♀): Tergites dark brown.

Legs (♂♀): Yellowish brown, preapicals on all three tibiae; apicals on fore and mid tibiae.

Average length of the body: 2.2 mm (♂), 2.5 mm (♀).

Periphallallic organs: Epanthrium broad, pubescent, with bifurcated process below bearing several short setae on inner side. Cercus fused to epanthrium.

Phallic organs: Aedeagus large, with ventral recurved process. Paramere broad with 2-3 subapical sensilla.

Egg-guide: Lobe oblong, with two large bristles and few fine setae.

Remarks: This species somewhat resembles *M. bicornua* OKADA 1985 in having bifurcated epanthrium, but clearly differs from the latter in having several short setae on inner side of bifurcated epanthrium process (no setae in *bicornua*), mesonotum with four broad, longitudinal stripes (mesonotum mat brownish black in *bicornua*) and in the shape of paramere, and several other details of phallic organs.

✓ *Microdrosophila elongata* OKADA 1965.

Figs. 9–11.

1965 *Microdrosophila elongata* OKADA, Kontyu, 33 (3): 327; loc. typ. Iriomote, Shirahama, Hiroshima, Japan.

Material: 3♂♂ 1♀♀ (Accession No. VK-105, Genetics Lab. Varanasi), 2♂♂ 1♀ (SMF D 3448), Virajpet, Coorg Dist., Karnataka, India, VI.1988, SUNDARAN & GUPTA leg.

Distribution: Ryukyus, Taiwan, Sri Lanka, Philippines, India (new record).

Description (♂♀): General morphology as described by OKADA (1965).

Periphallallic organs: Epandrium pubescent, fusiform and basally with a long curved pointed process. Cercus fused with epandrium and with about 20 bristles and a few fine setae on the curved process. Surstylus absent.

Phallic organs: As described by OKADA (1965).

Egg-guide: Lobe somewhat triangular with 2–3 apical bristles.

Key to Indian species of *Microdrosophila*:

1. C<sub>3</sub> fringe reaching apex of the third vein; ♂ genitalia with two long bristly processes clearly seen without dissection. . . . . *neodistincta* n. sp.
- C<sub>3</sub> fringe not reaching apex of the third vein; ♂ genitalia without bristly processes. . . . . 2.
2. Cercus separated from the epandrium and narrowly prolonged downward and swollen apically. . . . . *purpurata* OKADA 1956.
- Cercus fused with epandrium and not narrowly prolonged and swollen apically. . . . . 3.
3. Ventral tip of the epandrium broadly rounded. *pleurolineata* WHEELER & TAKADA 1964.
- Ventral tip of the epandrium narrowly tapering or pointed. . . . . 4.
4. Palpi dark brown, egg-guide lobe oblong. . . . . *virajpetiensis* n. sp.
- Palpi yellow, egg-guide lobe triangular. . . . . *elongata* OKADA 1965.

Zusammenfassung.

*Microdrosophila* war in Indien bisher mit zwei Arten (*purpurata* und *pleurolineata*) vertreten; eine von den Andamanen erwähnte Form ist nicht beschrieben. *M. elongata* wird erstmals nachgewiesen (Karnataka). *M. neodistincta* n. sp. und *M. virajpetiensis* n. sp. erhöhen die Zahl zu fünf Arten, für die ein Bestimmungsschlüssel erstellt wurde.

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