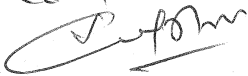


Dr Prof. Okada
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FURTHER RECORDS OF TWO NEW SPECIES OF *DROSOPHILA* FROM ORISSA, INDIA

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The description of two new species of *Drosophila* from Orissa, *D. (Sophophora) microdenticulata* and *D. (Scaptodrosophila) bansadharae* are given. Their taxonomic status and relationships are discussed.

(Key words: new *Drosophila*)

INTRODUCTION

Orissa is also one of the several states in India whose Drosophilid faunal composition is yet to be furnished. Some recent collections in this region have however yielded several interesting species of Drosophilidae (Gupta, 1972; Dasmohapatra *et al.*, 1981; Panigrahy and Gupta (in press). This paper embodies the results of our further surveying studies carried out in this region.

1. *Drosophila microdenticulata* sp. nov.

Mean body length : 2.16 mm (♂);
2.38 mm (♀).

Head, ♂ and ♀: Arista with 3 branches above and 1-2 below in addition to terminal fork. Antenna with second segment yellowish orange; third segment yellow. Frons including ocellar triangle pale brown. Orbitals in ratio of 6:3:8; anterior reclinate orbital thin, nearer to proclinate than posterior reclinate. Vibrissa strong, second oral thin, about one-third of vibrissa. Palpi pale, with one apical seta. Carina pale, narrow and high. Face and cheek yellowish brown, greatest width of cheek 1/6 greatest diameter of eye. Post-vertexals long, ocellars of moderate length. Clypeus black. Eyes dark red.

Thorax, ♂ and ♀: Acrostichal hairs regular, in 8 rows. Anterior scutellars convergent; posterior scutellars crossing each other. Anterior dorsocentral three-sevenths length of posterior dorsocentral; distance from anterior dorsocentral to posterior dorsocentrals about two-fifth the distance between two anterior dorsocentrals. Mesonotum and scutellum unicolorous, shiny yellow. Humeral two nearly equal. Thoracic pleura blackish brown. Sterno-index about 0.66.

Legs (Fig. 4): Coxae and femorae of all legs prominently brown, tibiae and tarsal segments yellow. Fore femora with a posteromedial row of about 9-10 long bristles. Sex combs of male with two moderately thick claw-like black teeth on the distal end of foremetatarsus. Pre-apical setae on all three tibiae; apical setae on first and second tibiae.

Wings, ♂ and ♀ (Fig. 5): Hyaline. Mean length of wing 2.04 mm (♂); 2.22 mm (♀). Approximate indices: C-index 2.11; 4V-index 2.0; 4C-index 1.18; 5X-index 1.8.

Two small equal setae at the apex of first costal section; heavy setae near basal 1/2 of third costal section. Halteres white.

Abdomen, ♂ and ♀: Abdominal tergites uniformly brown to black. Sternites brown.

Periphalllic organs (Fig. 1): Epandrium yellow, broad and somewhat narrowing ventrally with 21 long bristles; upper portion with 5 and lower with 16 bristles. Surstyles triangular, with two sets of teeth—upper one with 2 moderately curved long black teeth; lower one with 4 sparsely placed, short, stout, black teeth in a row; and with a few fine seta medially and ventrally. Cerci large, with 21 upper large bristles and 8 closely placed small bristles ventrally.

Phallic organs (Fig. 2): Aedeagus pale, non-bifid, medioventrally swollen and narrowing apically with dense hairs in middle. Basal apodeme of aedeagus nearly as long as aedeagus. Anterior gonapophyses broad and with 4 small sensilla

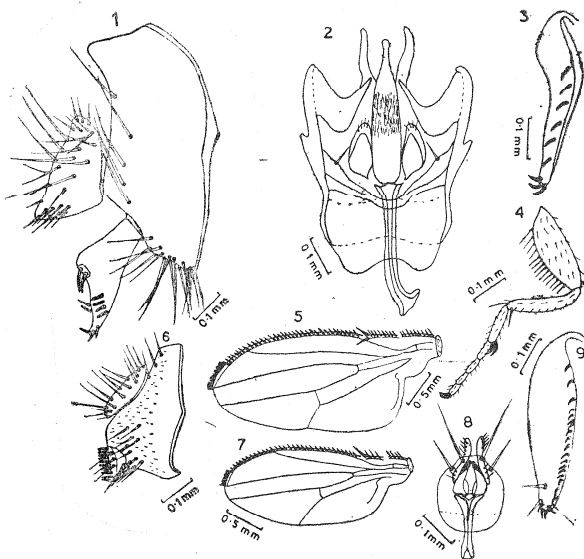
apically. Posterior gonapophyses large, narrow and dilated basally. Hypandrium with a pair of small submedian spines. Ventral fragma nearly quadrate and deeply incised ventrally.

Egg-guides (Fig. 3): Lobe yellow, elongate, with 6 equidistantly placed upper marginal teeth and 3 closely placed apical teeth. Basal isthmus short and narrow.

Holotype ♂ INDIA: ORISSA: Koraput district, Narayanpur, April 1981 (Panigrahy and Gupta).

Paratypes: 4 ♂♂, 6 ♀♀ same locality and collectors as **holotype**. Deposited in Department of Zoology, Banaras Hindu University, Varanasi, India and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan.

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Figs 1—5. *Drosophila microdentculata* sp. nov. 1.Periphalllic organs; 2. Phallic organs; 3. egg-guide; 4. Male fore leg; 5. Male wing. Figs. (6—9) *Drosophila bansadkharae* sp. nov. 6.Periphalllic organs; 7. Male wing; 8. Phallic organs; 9. egg-guide.

Relationships: This species belongs to *denticulata* subgroup of the *melanogaster* species-group of the subgenus *Sophophora*. It closely resembles *D. denticulata* Bock and Wheeler in having fore femora with a postero-medial row of 9-10 long bristles and two claw like black teeth on the distal end of fore metatarsus; but distinctly differs from it in having pleura with no broad dark brown stripe (a broad dark longitudinal brown stripe with diffuse margins in *D. denticulata*); surstylus with distinct upper and lower sets of teeth (only 2 lower sets of teeth in *denticulata*); cerci with 8 closely placed bristles ventrally (with several short and pointed teeth in *denticulata*); aedeagus non-bifid (bifid in *denticulata*); male foremetatarsus with 2 moderately thick, claw-shaped teeth (unusually large claw-shaped teeth in *denticulata*).

Distribution: India.

(Pc.)
2. *Drosophila bansadharae* sp. nov.

Mean body length: 1.99 mm (♂); 2.18mm (♀).

Head ♂ and ♀: Arista with 4 branches above and 2 below in addition to terminal fork. Antennae with second segment brown; third segment pale yellow. Frons with a pale brown median stripe; margin along orbit yellow. Ocellar triangle dark brown. Orbitals in ratio of 6:2:8. Vibrissa present, second oral not differentiated. Palpi pale, with one apical seta and 1-2 fine setae. Carina brown, greatest width of cheek 1/7 greatest diameter of eye. Postverticals long. Ocellars very minute. Clypeus brown. Eyes bright red.

Thorax, ♂ and ♀: Acrostichal hairs regular, in 8 rows. Anterior scutellars nearly convergent; posterior scutellars crossing each other. Anterior dorso-central half the length of posterior dorso-central; distance from anterior dorso-central

to posterior dorso-central about half the distance between two anterior dorso-centrals. Mesonotum with a dark brown dorso-median stripe; basally swollen squarishly and with two brown dark spots on either side. Scutellum dark brown with whitish tip. Humerals two, equal. Thoracic pleura dark brown. Sterno-index about 0.6.

Legs: Pale brown, femorae and tibiae of all legs with dark bands. Pre-apicals on all three tibiae; apicals on first and second tibiae.

Wings, ♂ and ♀ (Fig. 2): Hyaline. Mean length of wing 1.88mm (♂); 2.02 mm (♀). Approximate indices: C-index 2.0; 4V-index 2.75; 4C-index 1.66, 5X-index 2.0. One seta at the apex of first costal section; heavy setae near basal 1/3 of third costal section. Halteres white.

Abdomen, ♂ and ♀: 1T Pale yellow, 2-3T with dark brown medially interrupted bands, 4-5T with broad and medially projected bands, 6T uniformly dark.

Periphallial organs (Fig. 1): Epanandrium yellowish-brown, pubescent, broadened below, projected at heel, with 3 bristles on upper half and 12 bristles on lower half. Surstylus small with 8 similar black teeth and 2 lower bristles arranged in a straight row on outer margin and with 3 dorso-median and a few setae ventrally. Cerci yellowish brown, with 14 bristles.

Phallic organs (Fig. 3): Aedeagus pale, short; bifid, apically narrowing and hirsute. Basal apodeme of aedeagus straight and longer than aedeagus. Anterior gonapophyses pale, narrow, finger like having several marginal sensilla, Hypandrium medially somewhat elevated, with 2 pairs of submedian spines, inner pair longer. Ventral fragma rounded distally.

Egg-guides (Fig. 4): Lobe yellow, elongate with 18 marginal teeth, 4 closely placed apical thick teeth and 2 discal bristles. Basal isthmus short and thick.

Holotype ♂, INDIA : ORISSA, Loraput district, Narayanpur, April 1981 (Panigrahy and Gupta).

Paratypes : 6♂♂, 12♀♀ same locality and collectors as holotype. Deposited in Department of Zoology, Banaras Hindu University, Varanasi, India and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan. 268642828

Relationships : This species belongs to the subgenus *Scaptodrosophila*. It somewhat resembles *D. neomedleri* Gupta and Panigrahy (unpublished) in the details of male genital structures but distinctly differs from it in having mesonotum with a broad dark brown dorso-median stripe; basally swollen squarishly and with two brown dark spots on either side (no stripe and spots in *D. neomedleri*); surstylus with 8 similar black teeth arranged in a row (9 dissimilar black teeth in *neomedleri*); hypandrium with 2 pairs submedian

spines of moderate length (2 pairs of unusually long spines in *neomedleri*); egg-guide with 18 marginal and 4 apical teeth (6 marginal and 3 apical teeth in *neomedleri*).

Distribution : India

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REFERENCES

- DASMOHAPATRA, D. P., N. K. TRIPATHY & C. C. DAS (1981) Distribution of different species of *Drosophila* in Khallikote Ghats, Ganjam. *D. I. S.*, **56**, 45.
- GUPTA, J. P. (1972) *D. orissaensis*, A new species of *Drosophila* from Orissa, India. *Oriental Ins.*, **11** (2), 237—241.
- PANIGRAHY, K. K. & J. P. GUPTA (1983) Description of a new species and records of two known species of the genus *Leucophenga* (Diptera : Drosophilidae) from India. *Entomon* (in press).