

DESCRIPTION OF A NEW SPECIES AND RECORD OF TWO
KNOWN SPECIES OF THE GENUS *LEUCOPHENGA*
(DIPTERA : DROSOPHILIDAE) FROM INDIA

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Description of *Leucophenga pentapunctata*, a new species and two newly recorded species
L. regina and *L. abbreviata* are given. Key to Indian species of *Leucophenga* is also provided.

(Key words: species, *Leucophenga*)

Leucophenga constitutes the third largest genus of the family Drosophilidae, with about 170 described species (Lin & Wheeler, 1972). Several more species have since been described from different parts of the world. Unfortunately our knowledge regarding *Leucophenga* species inhabiting the Oriental region is still very scanty and fragmentary. Altogether eight species have been recorded from India (Singh & Gupta, 1981). The present paper deals with the description of three species of *Leucophenga* from India one of which is new to science.

Genus *Leucophenga* Mik

Leucophenga Mik 1886; Wzener Ent. Zeitung 5:317. Type—Species: *Drosophila maculata* Dufour, Europe; Duda 1924, Arch. Naturgesch A, 90 (3) : 185.

***Leucophenga pentapunctata* sp. nov.**

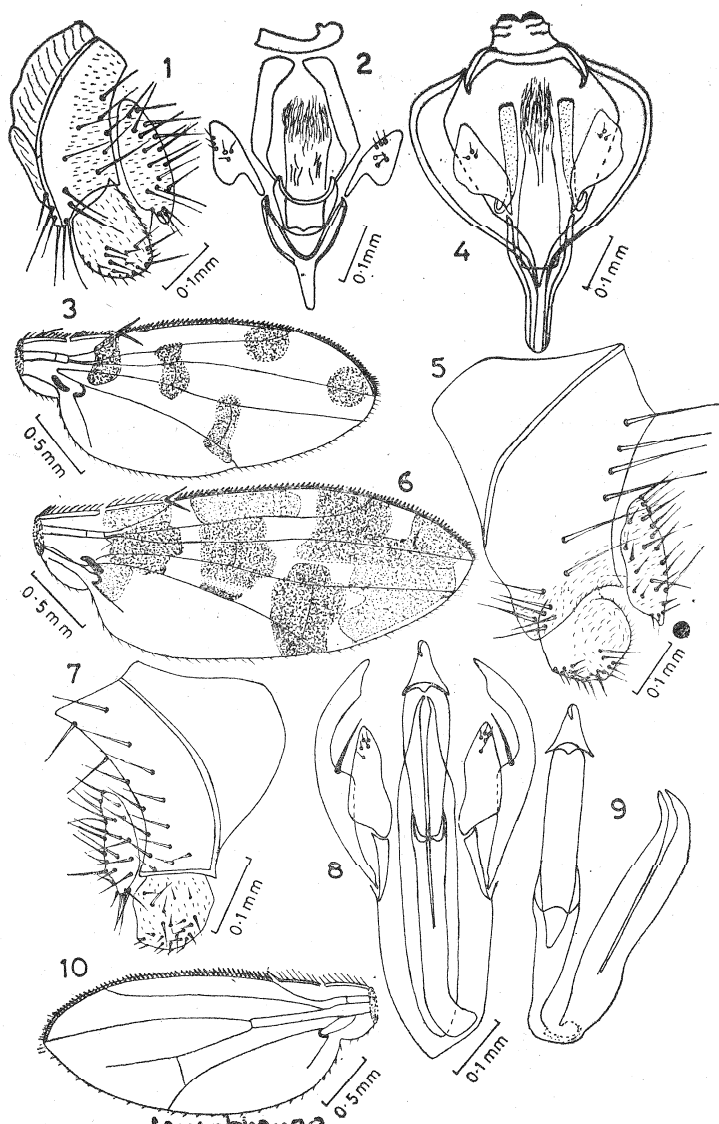
Body length : 3.74 mm (♂)

Head, ♂: Arista with 7-8 branches above and 3 below in addition to small terminal fork. Antennae with second segment pale; third segment somewhat brownish. Frons including ocellar triangle

pale brown. Orbitals in ratio 10:9:13; vibrissa long, second oral not differentiated. Palpi slender, brown distally, with several marginal setae. Carina absent. Face and cheek yellowish brown, greatest width of cheek 1/9 greatest diameter of eye. Post-vertical and ocellars moderate in size. Clypeus dark brown. Eyes dark red.

Thorax, ♂: Acrostichal hairs regular, in ten rows in front of dorsocentrals. Anterior scutellars, nearly parallel; posterior scutellars crossing each other. Anterior dorsocentral one third the length of posterior dorsocentral; distance between anterior and posterior dorsocentrals one-third the distance between anterior pairs. Pre-scutellars well developed. Mesonotum yellowish brown, with dark patch posteriorly, scutellum distally light. Thoracic pleura with two broad dark brown stripes. Sternite index about 0.6.

Legs yellow, femora of all legs with a brown small dorsal patch basally; second and third tibiae with similar basal patch. Pre-apicals on all three tibiae; apicals on first and second tibiae.



Figs. 1-3 *Drosophila pentapuncta* sp. nov.: 1. Peripheral phallic organs; 2. Phallic organs; 3. male wing. Figs. 4-6 *Drosophila regina*: 4. Phallic organs; 5. Peripheral phallic organs; 6. male wing. Figs. 7-10 *Drosophila abbreviata*: 7. Peripheral phallic organs; 8. Phallic organs; 9. Aedeagus with basal recurved process; 10. male wing.

Wings, ♂ (Fig. 3) With five conspicuous dark brown patches. One at first costal break; two elliptical patches, one on each cross vein, one each of the remaining patches on the tip of second and third longitudinal veins. Length about 3.12 mm. Approximate indices: C-index 1.55; 4V index 2.15; 4C-index 1.78; 5X-index 1.34; Two equal setae at the apex of first costal section; heavy setae near basal 1/11 of third costal section. Halteres entirely white.

Abdomen, ♂: With IT-2T yellow, the remainder tergites with dark brown bands projected medially and laterally enclosing six-yellowish areas.

Periphallic organs (Fig. 1): Epandrium yellowish brown, pubescent, broadened below, with 7 setae on posterior margin and 8 similar setae on lower tip, basal fragma narrow. Surstylus large, pubescent, slightly longer than broad with 6 stout and 14-16 fine setae. Cerci yellow, pubescent, elongate with 18 setae.

Phallic organs (Fig 2): Aedeagus pale, straight and broad, apically hairy. Anterior gonopophyses narrow and apically triangular, each with 6 median sensilla. Posterior gonapophyses long, dagger shaped, slightly broadened distally. Ventral fragma narrow.

Holotype ♂, INDIA, ORISSA, Koraput district, Narayanpur, April 1981 (Panigrahy and Gupta). **Paratypes**: 4 ♂♂, same locality and collectors as holotype. Deposited in Museum of Department of Zoology, Banaras Hindu University, Varanasi, India and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan.

Relationships: This species closely resembles *L. quinquemaculipennis* Okada (1966) in having wings with five dark patches;

but distinctly differs from it in having narrow basal fragma (large in *quinquemaculipennis*), broad and apically hairy aedeagus (fusiform and pubescent on apical half in *quinquemaculipennis*), anterior gonapophyses triangular with 6 sensilla (elongate with 4 sensilla in *quinquemaculipennis*), posterior gonapophyses dagger shaped, slightly broadened distally (apically slender and medially thick in *quinquemaculipennis*), and also in the abdominal pattern.

Distribution: INDIA

- *Leucophenga regina* Malloch

L. regina Malloch, 1935, Aust. Zool. 8, 90 (Mt. Molloy, north Queensland)

L. regina—Bock, 1979 Aust. J. Zool. Suppl. Ser., 71:34.

Head, ♂: Palpi with 3-4 marginal setae. Vibrissa present second oral not differentiated. Greatest width of cheek 1/9 greatest diameter of eye. Clypeus dark brown.

Thorax, ♂: Anterior scutellars divergent; posterior scutellars crossing each other. Humerals two, unequal. *wings*, ♂: (Fig. 6). As described by Bock (1979).

Legs and abdomen, ♂: As described by Bock (1979).

Periphallic organs (Fig. 5): Epandrium brown, broadened dorsally with 6 long setae along posterior margin and 6 smaller setae at lower tip. Surstylus ovoid, pubescent, having 18 small setae. Cerci brown, pubescent, elongate with 23 setae

Phallic organs (Fig. 4): Aedeagus brown, straight broadened dorsally and hairy apically. Anterior gonapophyses brown, somewhat triangular, with 3 subapical sensilla. Posterior gonapophyses long narrowing basally. Ventral fragma narrow, hypandrium broad, narrowing basally.

Specimens examined: INDIA; Orissa, Koraput district, Narayanpur, 9 ♂♂, April 1981.

Distribution: Australia, India (New record).

Remarks: This species has so far been considered as very rare and confined to its type locality only (Queensland, Australia). But interestingly this beautiful and rare species has also been recorded from India.

Leucophenga abbreviata (de Meijere)

Drosophila abbreviata de Meijere, 1911: 400 (Java).

Drosomyiella abbreviata Hendel, 1914: 114 (Java, Taiwan).

Leucophenga abbreviata Duda, 1924 a: 185 (Java), Okada, 1966, Bull. Brit. Mus. (Nat. Hist) Ent. Suppl. 6:18 (Nepal).

Head and Thorax, ♂: Orbitals in the ratio of 10:9:15. Other details as described by Okada (1966).

Wings, ♂ (Fig. 10): As described by Okada (1966).

Legs and abdomen. ♂: As described by Okada (1966).

Periphallic organs (Fig. 7): Epandrium uniformly broad, truncate below, with 15 setae along posterior margin, basal fragma large. Surstylus somewhat quadrate, pubescent, with 20 small setae and a few fine setae. Cerci elongate, with 24 setae.

Phallic organs (Figs. 8 and 9): Aedeagus brown, elongate, bifurcated at upper half, basally with a long recurved process, hooked apically. Anterior gonapophyses large having narrow stalk and with 5 sensilla subapically. Ventral fragma slender, lateromedially somewhat swollen. Hypandrium narrow, apically pointed, with a pair of submedian spines.

Specimens examined: INDIA, Orissa, Koraput, district Narayanpur, 10 ♂♂, April 1981.

Distribution: Java, Taiwan, Nepal, India (New record).

KEY TO INDIAN SPECIES OF THE
GENUS *LEUCOPHENGA*

The authors have included all the species recorded so far from India, although not all of them were examined by the authors.

- 1 Media distally abbreviated, not reaching wing margin *abbreviata* (de Meijere)
- Media distally not abbreviated and reaching wing margin 2
- 2 Third abdominal tergite in male bare and milky-white *albofasciata* (Macquart)
- Third abdominal tergite in male not bare and milky-white 3
- 3 Wings with darkened areas 4
- Wings without darkened areas 5
- 4 Wings largely fuscous apically *neoangusta* Godbole & Vaidya
- Wings with definite patches of different shapes and sizes 6
- 5 Basal three abdominal tergites with silvery effect and the remainder shiny black *flavicosta* Duda
- Basal three abdominal tergites without silvery effect and the remainder not shiny black 7
- 56 Mesonotum and basal tergites in the male covered with dense silvery pollinosity. Wing with a basal diagonal stripe *subpollinosa* (de Meijere)
- Mesonotum and basal tergites in male not covered with dense silvery pollinosity. Wing without a basal diagonal stripe 8
- 97 Abdominal tergites with broad black bands, projecting medially and laterally *shillongensis* Dwivedi & Gupt

- Abdominal tergites with black spots..... 9
- 6 8 Wings with a dark area extending across costal margin, clearly interrupted just beyond second costal break.....
.....*interrupta* Duda
- Wings not with a dark area extending across costal margin but with defined patches..... 10
- 10 9 Thoracic pleura yellow with scattered black patches*rimbickana* Singh & Gupta
- Thoracic pleura yellowish orange, slightly clouded in male.....*bellula* (Bergroth)
- 7 10 Wings with extensive brown markings of irregular outline. Abdominal tergites with bristles arising from distinct black spots
.....*regina* Malloch
- Wings with five conspicuous dark brown areas. Abdominal tergites with bristles not arising from distinct black spots.....
.....*pentapunctata* sp. n.

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