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 know-
ledge 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. Naturgsh 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 differentia-
ted. 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 dorsocentrais. An-
terior scutellars, nearly parallel; posterior
scutellars crossing each other. Anterior
dorsocentral one third the length of posterior
dorsocentral; distance between anterior and
posterior dorsocentrais one-third the dis-
tance between anterior pairs. Pre-scutellars
well developed. Mesonotum yellowish
brown, with dark patch posteriorly, scut-
tellum distally light. Thoracic pleura with
two broad dark brown stripes. Sterno-
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. [Diagram of insect parts.
Figs. 4—6. [Diagram of another insect parts.
Figs. 7—10. [Diagram of additional parts.
NEW LEUCOPHENA SPECIES FROM INDIA

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.

Periphalic 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 gonapophyses 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

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


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).

Periphalic 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, hy expended broad, narrowing basally.
Specimens examined: INDIA; Orissa, Kora-puit 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  
Hist) Ent. Suppl. 6:18 (Nepal).

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

Wings, ♂ (Fig. 10): As described by  

Legs and abdomen, ♂: As described by  

Periphalic organs (Fig. 7): Epandrium  
uniformly broad, truncate below, with 15  
setae along posterior margin, basal fragma  
large. Surstylus somewhat quadrate, pub- 
escent, 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 sen-
silla subapically. Ventral fragma slender,  
lateromedially somewhat swollen. Hypan- 
drium narrow, apically pointed, with a  
pair of submedian spines.

Specimens examined: INDIA, Orissa, Kora-
puit, 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 ......................................... albomaculata (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 fuscos apically .......................... neoangusta Godbole & Vaidya

   — Wings with oenime patches of amorous  
shapes and sizes ..................................... 6

5 Basal three abdominal tergites with sil- 
very effect and the remainder shiny black  
.......................................................... flavicosta Duda

   — Basal three abdominal tergites without sil-
very effect and the remainder not shiny  
hack ..................................................... 7

6 Mesonotum and basal tergites in the male  
covered with dense silvery pollinosity.  
Wing with a basal diagonal stripe ..........  
......................................................... subpolilliosa (de Meijere)

   — Mesonotum and basal tergites in male not  
covered with dense silvery pollinosity.  
Wing without a basal diagonal stripe ......... 8

7 Abdominal tergites with broad black bands,  
projecting medially and laterally ............. shillongensis Dwivedi & Gupt
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Abdominal tergites with black spots.......................... 9

Wings with a dark area extending across costal margin, crests interrupted just beyond second costal break.............................. Interrupta Duda

Wings not with a dark area extending across costal margin but with defined patches.............................................................................. 10

Thoracic pleura yellow with scattered black patches............. rimbeckana Singh & Gupta

Thoracic pleura yellowish orange, slightly clouded in male........................... bellula (Bergroth)

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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REFERENCES


