

Reprinted from :  
The Indian Journal of Zootomy  
Vol. XV, No. 1, 1974  
pp. 23-26

**The Genus *Leucophenga* (Diptera : Drosophilidae) in India**

**B. K. Singh and J. P. Gupta**  
Genetics Laboratory  
Department of Zoology  
Banaras Hindu University  
Varanasi, India

**ABSTRACT**

Altogether only five species of *Leucophenga* have so far been recorded from India, of which *L. interrupta* Duda is reported for the first time from this country. An account and key to Indian species is given.

**INTRODUCTION**

This is the third largest genus in the family, with about 170 described species. Although the genus is worldwide in distribution, but it is especially rich in tropical areas. Based on the extensive studies of *Leucophenga* by Bächli (1971) from Ethiopia (Africa), the genus has been divided into 8 species groups, namely : *ornata*, *cuthbertsoni*, *proxima*, *flavopuncta*, *subpollinosa*, *flaviseta*, *mutabilis* and *argentata*. Lin and Wheeler (1972) pointed out that all but 3 of these groups are known to have representatives in Asia.

Unfortunately the knowledge of the *Leucophenga* species of the oriental region is still very poor. Until rather recently, only four species have been recorded from India, of which *L. guttiventris* and *L. albicincta* reported by Gupta (1970) from the eastern parts of Uttar Pradesh. Godbole and Vaidya (1973) reported *L. subpollinosa* from Mahabaleshwar (Maharashtra). In the same year Bächli (1973) recorded *L. flavicosta* from Kanha National Park, M. P. The present paper deals with one more species, *L. interrupta* to be reported for the first time from India.

**TAXONOMIC ACCOUNT**

Genus *Leucophenga* Mik

*Leucophenga* Mik, 1886. Wiener Ent. Zeitung 5 : 317 (type : *Drosophila maculata* Dufor; Europe).

Arista plumose, with numerous branches; carina low or absent; acrostichal hairs in numerous rows; prescutellars well developed; posterior reclinate typically nearer to inner vertical than to proclinate; third costal section with a row of minute thorn-like spines; fungivorous species.

**KEY TO INDIAN SPECIES OF LEUCOPHENGA**

- 1 Wings without darkened regions .....2.
- Wings with darkened regions .....3.
- 2 Male third abdominal tergite completely milky white and bare.....*albicincta* de Meijere.
- Male third abdominal tergite not milky white and bare .....4.
- 3 Wings clouded over first vein and with a weak darker stripe below it.  
Darker stripes in dorsocentral lines.....*subpollinosa* (de Meijere).

- Wings with a broad dark region across costal margin, clearly interrupted just beyond 2nd costal break, and wider apically. No dark stripes in dorsocentral lines.....*interrupta* Duda.
- 4 Basal three abdominal tergites yellow with silvery effect while the remaining shiny black.....*flavicosta* Duda.
- Basal first abdominal tergite yellow while the remainder with several spots.....*guttiventris* (de Meijere).

✓ *Leucophenga albicincta* de Meijere, 1908

*L. albicincta* de Meijere, 1908. Tijd. Ent. 15 : 156.

Type locality : Java.

Indian localities : Chandraprabha, Sirsi (U.P.), Kanha National Park (M.P.).

Distribution : Java, Africa, New Guinea and India.

✓ *Leucophenga guttiventris* (de Meijere), 1911

*D. guttiventris* de Meijere, 1911 Tijd. Ent. 54 : 414.

*L. guttiventris* (de Meijere) Sturtevant, 1921. Carn. Inst. Publ. 301 : 131.

Type locality : Java.

Indian localities : Chandraprabha, Varanasi (U.P.), Kanha National Park (M.P.), Mahabaleshwar (Maharashtra).

Distribution : Java, Formosa, Japan, Fiji, Africa, Nepal and India.

✓ *Leucophenga subpollinosa* (de Meijere), 1914.

*D. subpollinosa* de Meijere, 1914. Tijd. Ent. 57 : 263.

*L. subpollinosa* (de Meijere) Duda, 1923. Ann. Mus. Nat. Hung. 30 : 28.

Type locality : Java.

Indian localities : Varanasi, Sirsi (U.P.), Mahabaleshwar (Maharashtra).

Distribution : Java, Sumatra, Japan, Taiwan, Africa, Indonesia, Veit-Nam, Caroline Is., Micronesia, Nepal and India.

✓ *Leucophenga flavicosta* Duda, 1926

*L. subpollinosa* var. *flavicosta* Duda, 1926. Suppl. Ent. 14 : 42-116.

Type locality : Sumatra.

Indian localities : Kanha National Park (M.P.).

Distribution : Sumatra, New Guinea, Taiwan, Micronesia and India.

✓ *Leucophenga interrupta* Duda, 1924

*L. interrupta* Duda, 1924a. Arch. Naturg. 90A. (3) : 187; 1924b. Arch. Naturg. 90A (3) : 237.

Type locality : Formosa.

General features of male and female.

Arista with about 7 dorsal and 3 ventral branches in addition to the terminal fork. Antennae pale yellow. Frons tan. Ocellar triangle brownish. Orbitals in the ratio 11 : 8 : 11. Second oral not differentiated. Palpus pale yellow, with 5-6 marginal setae. Face yellow. Clypeus brownish. Greatest width of cheek from base of oral to eye border about one-fifteenth greatest diameter of eye. Eyes bright red.

Acrostichal hairs irregular, probably in 14 rows between dorsocentrals. Anterior scutellars large and slightly convergent. Distance from anterior dorsocentral to posterior dorsocentral about one-third distance between two anterior dorsocentrals. Mesonotum and scutellum unicolorous, pale yellow. Thoracic pleura pale yellow. Sterno-index about 0.7. Legs yellow, preapicals on all three tibiae; apicals on first and second tibiae.

Wings with a broad dark region across costal margin, clearly interrupted just beyond 2nd costal break, and wider apically reaching little beyond third vein (Fig. 1C). C-index about 2.6; 4V-index about 1.9; 4C-index about 1.0; 5X-index about 1.0. Two stout and equal bristles at the apex of first costal section; heavy bristles on about basal seven-eighths of third costal section.

Abdominal tergites yellow, 2nd tergite with a dark brown apical band; 3rd tergite with a broad dark band enclosing two yellow spots medially; 4th and 5th tergites with five dark spots each; 6th tergite completely dark brown (Fig. 1D). In female abdominal pattern slightly differs from male (Fig. 1E).

Periphallalic organs (Fig. 1B): Genital arch narrowing above, broadly truncate below, pubescent, with about 21 bristles scattered over the genital arch. Clasper large, pubescent and with about 40 short setae covering both surfaces. Anal plate elongate elliptical, pubescent, with about 22 bristles.

Phallic organs (Fig. 1A): Aedeagus slender, apically narrowing and hooked, with several strong basal processes having serrated margins. Anterior parameres large, with distal margin folded, and with about 4 sensilla. Posterior parameres with spine-like projection distally. Ventral fragma narrow and rounded.

Indian locality:—Kusmahi Forest, Gorakhpur (U.P.).

Distribution:—Formosa, Japan, Nepal, Ceylon and India (New record).

Remarks:—Differs from Japanese form described by Okada (1956) in having scattered bristles on genital arch, apically hooked aedeagus and its basal processes with serrated margins, and very large anterior parameres.

#### ACKNOWLEDGEMENTS

The authors are grateful to Dr. G. Bächli, Zoologisches Museum der Universität Zurich, Switzerland for providing valuable informations regarding *L. interrupta*. Thanks are also due to Prof. M. S. Kanungo, Head of the Department for facilities and to the U. G. C. for financial assistance.

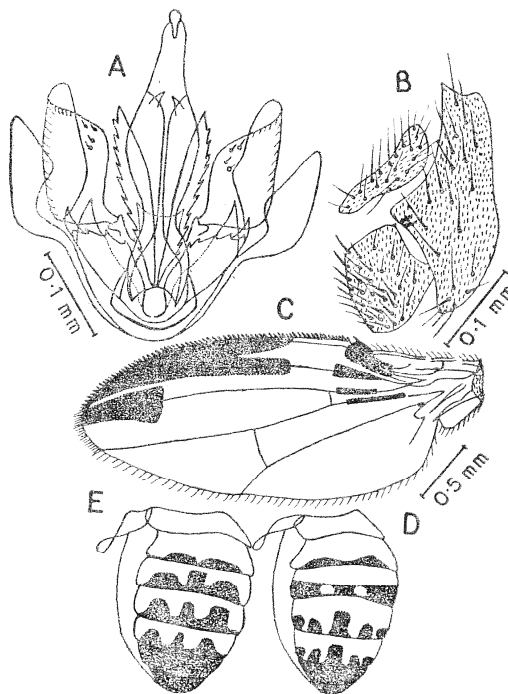


Fig. 1. *Leucophenga interrupta* Duda: A, phallic organs; B, periphallalic organs; C, male wing; D, male abdomen; E, female abdomen.

## REFERENCES

- Bächli, G. 1971. *Leucophenga* and *Paraleucophenga* (Diptera : Brachycera). In Exploration du Parc National de l'Upemba. Mission G. F. de Witt 71 : 1-192.
- Bächli, G. 1973. Drosophilidae of Kanha National Park, M.P., India. Drosophila Inform. Serv. 50 : 159.
- Godbole, N. N. and V. G. Vaidya 1973. Drosophilid survey of Mahabaleshwar. Drosophila Inform. Serv. 50 : 141.
- Gupta, J. P. 1970. Description of a new species of *Phortlicella*; *Zaprionus* (Drosophilidae) from India. Proc. Indian Natn. Sci. Acad. 36B (1) : 62-70.
- Lin, F. J. and M. R. Wheeler. 1972. The Drosophilidae of Taiwan, Univ. Texas Publ. 7213 : 237-256.
- Okada, T. 1956. Systematic study of Drosophilidae and allied families of Japan. Gihodo, Tokyo.