

**Two new and one unrecorded species of Drosophilidae
from Uttarakhand, India**
(Insecta: Diptera).

By

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With 12 figures.

Abstract: *Amiota (Phortica) bandes* n. sp. and *Paraleucophenga neojavanaii* n. sp. are described and *Gitona distigma* MEIGEN 1830 is recorded from India.

The Drosophilid fauna of most countries are now well established in view of the great significance of Drosophilidae in genetic and evolutionary studies. The Indian subcontinent, however still remains an exception. Although recent surveys have yielded considerable data on Indian Drosophilid species (SINGH & GUPTA 1977, 1981; GUPTA & SINGH 1979; DWIVEDI & GUPTA 1979, 1980; KUMAR & GUPTA 1988; GUPTA & KUMAR 1986; SINGH & BHATT 1988; SINGH & NEGI 1989) many parts of the Indian subcontinent still await exploration. The present paper deals with the results of surveying studies undertaken in Uttarakhand region of Uttar Pradesh, previously unexplored.

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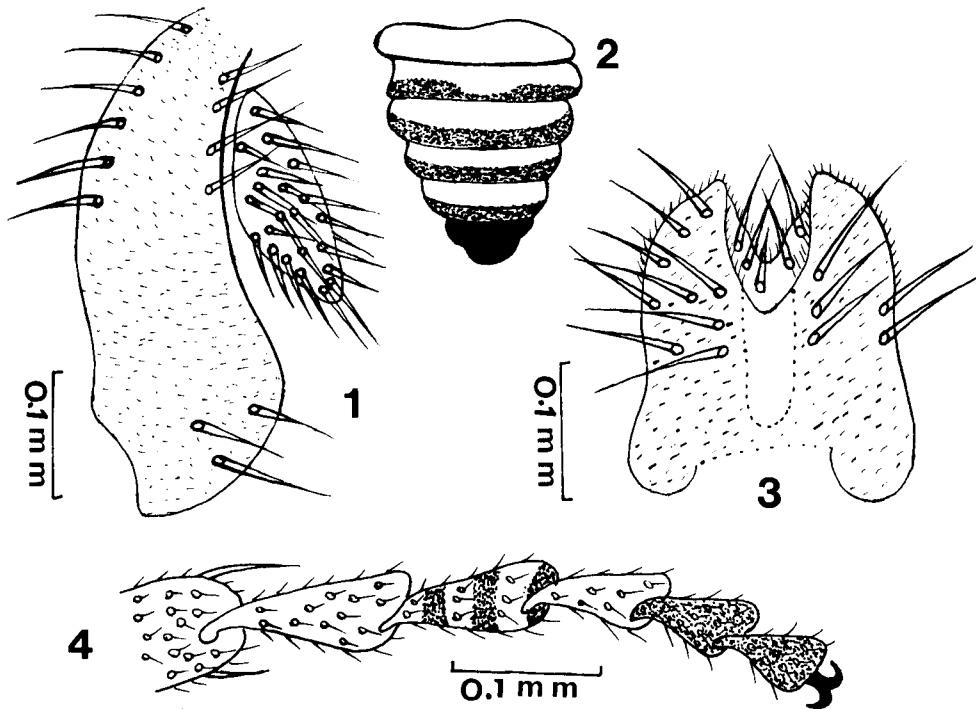
Amiota (Phortica) bandes n. sp.

Figs. 1-4.

Holotype: ♂ (Accession No. NTL-51), Govt. House, Nainital Distr., Uttar Pradesh, India, VI.1988, SINGH & NEGI leg.

Paratypes: 2♂♂ 1♀ (Cytogenetics Laboratory, Nainital), 1♂ 1♀ (*Drosophila* collection, Dept. Biol., Tokyo Metropolitan Univ.), all same data as holotype.

The remaining alcoholic preserved specimens of the paratype series (Accession No. NTL-52) along with the mounted slides of genitalia and other taxonomic structures are deposited in the Cytogenetics Laboratory, Zool. Dept., Kumaun University, Nainital, and in the Senckenberg Museum, Frankfurt a. M. (SMF GP Dipt. 7426-9).



Figs. 1-4. *Amiota (Phortica) bandes* n. sp. — 1) Periphthallic organs; 2) abdomen; 3) phallic organs; 4) fore leg, ♂.

Diagnosis: 1st abdominal tergite with black apical band interrupted in the middle. Fore metatarsal segment with three black bands (Fig. 4).

Description: Head (♂♀): Arista with about 7 dorsal branches only. Antennae with 2 segment brown; 3 segment yellowish brown. Orbitals in the ratio of 22:9:21. Second oral not differentiated. Palpi yellowish with one apical seta. Face and cheek brown, greatest width of cheek $\frac{1}{7}$ greatest diameter of eye. Clypeus light brown. Eyes bright red.

Thorax: (♂♀): Acrostichal hairs in 8 regular rows in front of dorsocentrals. Anterior scutellars convergent; posterior ones crossing each other. Anterior dorsocentral $\frac{3}{4}$ length of posterior dorsocentral; distance between anterior and posterior dorsocentral $\frac{1}{3}$ of distance between two anterior dorsocentrals. Mesonotum and scutellum pale yellow. Thoracic pleura dark brown. Sterno-index about 0.92.

Wings (♂♀): Transparent. Approximate indices: C-index 2.52; 4V-index 3.33; 4C-index 1.1; 5X-index 0.97. Two equal bristles at the apex of 1. costal section; heavy bristles on about basal $\frac{3}{4}$ of 3. costal section. Halteres yellowish brown.

Legs (♂♀): Light brown, preapicals on all three tibiae; apicals on fore and mid tibiae. Fore metatarsal segment with three black bands (Fig. 4).

Abdomen (♂♀): Yellowish, tergites with broad, black apical bands. 1st interrupted in the middle, 5th and 6th black (Fig. 2).

Average length of body: 4.3 mm (♂), 5.6 mm (♀).

Periphallallic organs (Fig. 1): Genital arch dark brown, dorsally narrow, ventrally broadened, pubescent and with about 10 marginal bristles at the upper half. Surstylus fused with genital arch and with three large bristles. Cerci yellow, somewhat oval and with about 22 large bristles.

Phallic organs (Fig. 3): Aedeagus brown, V-shaped with 5 large bristles. Anterior and posterior gonapophyses fused with the hypandrium with about 8–9 large bristles. Basal apodeme of aedeagus short and subequal to ventral fragma. Ventral fragma somewhat quadrate.

Remarks: This species is a member of the subgenus *Phortica* of the genus *Amiota* and is unique in having first abdominal band broken and first metatarsal segment of the ♂ fore leg with three dark bands.

Paraleucophenga neojavanaii n. sp.

Figs. 5–9.

Holotype: ♂ (Accession No. NTL-53), D.S.B. College, Nainital Distr., Uttar Pradesh, India, VII.1989, SINGH & NEGI leg.

Paratypes: 1♂ 1♀ (Cytogenetics Laboratory, Nainital), 1♂ 1♀ (*Drosophila* collection, Dept. Biol., Tokyo Metropolitan Univ.), all same data as holotype.

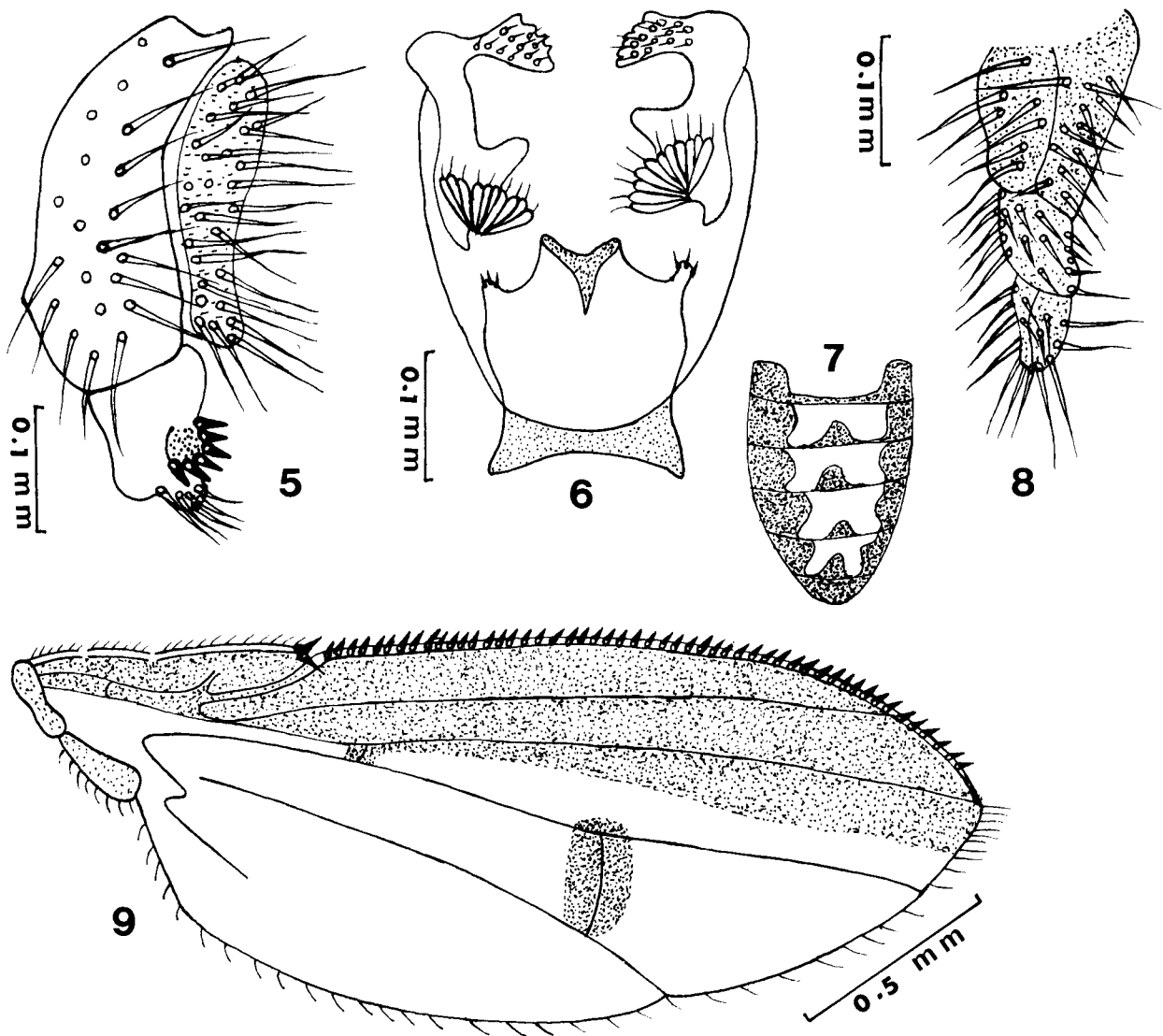
The remaining alcoholic preserved specimens of the paratype series (Accession No. NTL-54) along with the mounted slides of genitalia and other taxonomic structures are deposited in the Cytogenetics Laboratory, Zool. Dept., Kumaun University, Nainital, and in the Senckenberg Museum Frankfurt a. M. (SMF GP Dipt. 7430–4).

Diagnosis: First and second longitudinal veins along with anterior and posterior cross veins fuscous. ♂ and ♀ abdominal tergites with narrow black apical bands, 2nd–5th abdominal tergites slightly projected in the middle, 6th abdominal tergite black.

Description: Head (♂♀): Antenna yellowish grey. Antenna with about 8–9 dorsal long and 7–8 very short ventral branches in addition to small terminal fork. Palpus yellowish grey, with a long apical and a few shorter ventral setae. Clypeus yellowish grey. Ocellar triangle mat black. Periorbitals mat yellowish white. Frons mat yellowish, white parallel sided, slightly narrower than median length anteriorly. Face yellowish white, unicolorous. Carina undeveloped, very weakly convexed. Cheek yellowish white. Anterior reclinate orbital slightly longer than proclinate, three times nearer to proclinate than to posterior reclinate, which is twice as long as proclinate. Vibrissa very long, other orals fine. Eyes dark red.

Thorax (♂♀): Mesonotum and scutellum mat orange brown, silvery shining, humeral collus paler. Scutellum laterally with a few rather long setae beside scutellars. Thoracic pleura pale yellow, white pruinose. Humeral 1, long. Aerostichal hairs in about 10 irregular rows. Anterior dorsocentrals $\frac{1}{5}$ the length of posterior dorsocentrals, distance between anterior and posterior dorsocentral $\frac{2}{7}$ of distance between two anterior dorsocentrals. Lateral scutellars divergent, apicals nearer to each other than to laterals. Sterno-index 0.7; median sternopleural slightly shorter than anterior.

Wings (♂♀): Wings fuscous along 1st and 2nd longitudinal veins. Anterior and posterior crossveins clouded (Fig. 9). Approximate indices: C-index 5.7; 4V-



Figs. 5–9. *Paraleucophenga neojavanaii* n. sp. — 5) Periphallallic organs; 6) phallic organs; 7) abdomen; 8) egg-guide; 9) wing.

index 1.09; 4C-index 0.4; 5X-index 1.8. C_3 fringe $\frac{5}{9}$. Halteres yellow, knob fuscous.

Legs (σ ♀): Legs yellow. Knee joint of hind leg black.

Abdomen (σ ♀): Abdominal tergites yellowish with narrow black apical bands, 2nd–5th abdominal bands medially projected, 6th abdominal tergite black (Fig. 7).

Average length of body: 4.33 mm (σ), 4.5 mm (♀).

Periphallallic organs (Fig. 5): Genital arch yellow, narrow above and broad below with about 22 large bristles. Surtylus dark brown triangularly pointed below with about 6 blunt black teeth subventrally and 6–7 small bristles. Cerci large covering entire length of genital arch with about 25–30 large bristles.

Phallic organs (Fig. 6): Aedeagus yellow, broad and short, Y-shaped at the tip with three sensilla on the sides. Anterior gonapophyses large with a comb of about

11 small black teeth. Hypandrium broad with a number of sensilla. Ventral fragma nearly triangular.

Egg-guide (Fig. 8): Lobe pale yellow with a number of small bristles.

Remarks: This species is very close to *Paraleucophenga javana* OKADA 1988, but distinctly differs from it by abdominal patterns and several other structures of phallic organs.

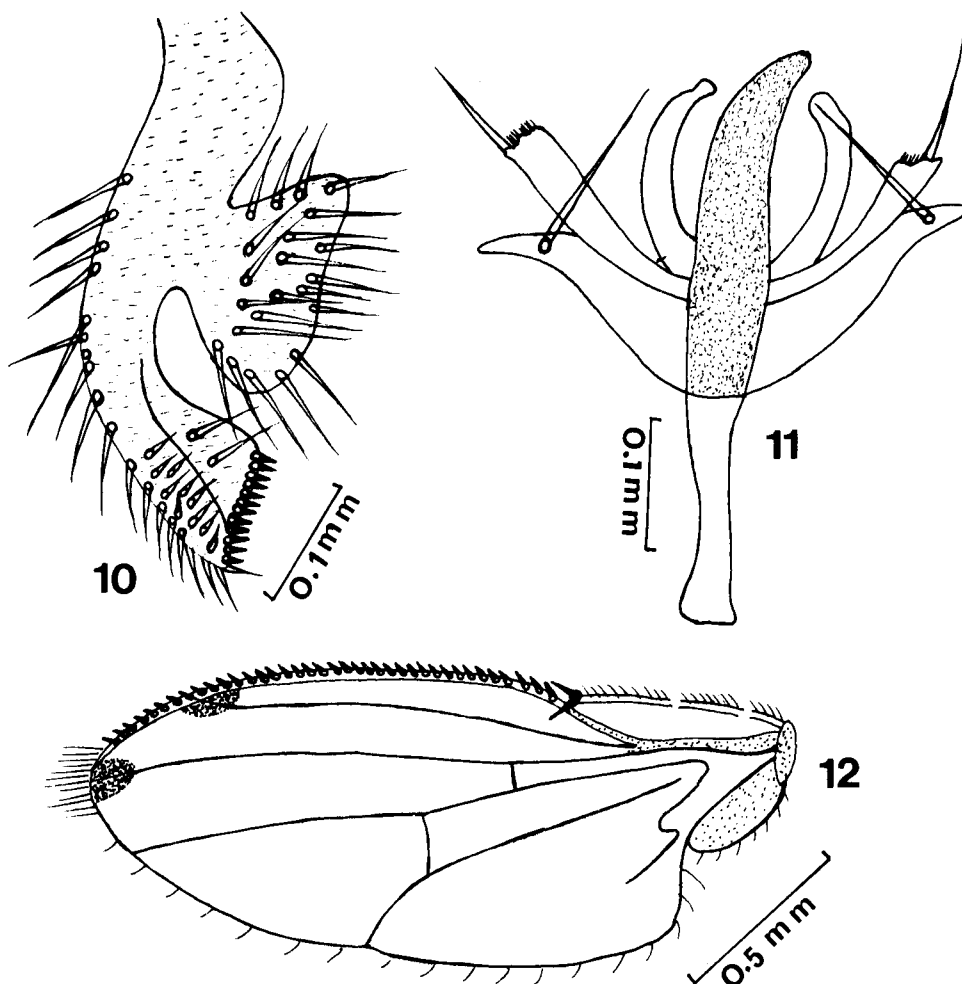
Gitona distigma MEIGEN 1830.

Figs. 10–12.

1830 *Gitona distigma* MEIGEN, 30:130.

Material: 3♂♂ 2♀♀ (Cytogenetics Laboratory, Nainital), 2♂♂ 2♀♀ (SMF D. 3627), Maikoti, Chamoli district, Garhwal, Uttar Pradesh, VIII.1988, SINGH & NEGI leg.

Distribution: Europe; Asia (new record).



Figs. 10–12. *Gitona distigma* MEIGEN 1830. — 10) Peripheral phallic organs; 11) phallic organs; 12) wing.

Description: Head (σ φ): Arista with 9–10 dorsal and 7–8 ventral branches in addition to terminal fork. Antennae with 2 segment dark brown; 3 segment black. Frons including ocellar triangle dark brown. Orbitals in the ratio of 6:3:8. Second oral thin, half the length of vibrissa. Palpi dark brown, with one prominent apical and 2–3 marginal setae. Carina black, narrow and high. Face and cheek light brown, greatest width of cheek $\frac{1}{2}$ greatest diameter of eye. Clypeus dark brown. Eyes bright red.

Thorax (σ φ): Acrostichal hairs in 8 regular rows between dorsocentrals. Anterior scutellars convergent, posterior ones crossing each other. Anterior dorsocentral $\frac{1}{2}$ length of posterior dorsocentral; distance between anterior and posterior dorsocentral $\frac{2}{5}$ of distance between two anterior dorsocentrals. Mesonotum and scutellum unicolorous brown. Thoracic pleura black. Sterno-index 0.35.

Wings (σ φ): Hyaline. Tips of 1st and 2nd longitudinal vein deeply fuscous. Approximate indices: C-index 3.07; 4V-index 2.35; 4C-index 1.00; 5X-index 1.50. Two bristles at the apex of first costal section; heavy bristles on about basal $\frac{2}{3}$ of third costal section (Fig. 12). Halteres dark brown.

Legs (σ φ): Black, preapicals on all three tibiae; apicals on 1 and 2 tibiae.

Abdomen (σ φ): Tergites yellowish brown. 1st and 2nd tergites with narrow, black apical bands; 3rd–5th abdominal tergites with broad, black apical bands.

Average length of body: 4.5 mm (σ), 5.3 mm (φ).

Periphallalic organs (Fig. 10): Genital arch yellowish brown, pubescent, dorsally and ventrally broadened, lower portion with about 14–15 large and 10 thick short bristles. Surtylus black, broad at the tip, with 12 small black teeth arranged in a row. Cerci large, fused with genital arch, with numerous bristles.

Phallic organs (Fig. 11): Aedeagus yellow, stout and slender. Basal apodeme of aedeagus subequal to aedeagus. Anterior gonapophyses leaf-like and curved. Posterior gonapophyses large with one large apical sensilla. Hypandrium with a pair of apartly placed submedian spines. Ventral fragma very short.

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