

TWO NEW MEMBERS OF *SCAPTODROSOPHILA* FROM SIKKIM, INDIA (DIPTERA: DROSOPHILIDAE : *DROSOPHILA*)

A. KUMAR & J. P. GUPTA

Genetics Laboratory, Department of Zoology, Banaras Hindu University,
Varanasi, India 221 005

(Received 30 June 1991)

Description of two new species of *Drosophila*, *D. (Scaptodrosophila) zingiphila*, *D. (Scaptodrosophila) vazrae* is given. Their taxonomic relationship within the group is also discussed.

(Key words: new species, *Scaptodrosophila*)

Sikkim is a small mountainous Indian state in eastern Himalayas. Despite its remarkable physiography, the state remained unexplored for drosophilid fauna until now. It is only very recently some collections have been undertaken in this region. These studies have yielded the occurrence of several interesting species of Drosophilidae (Gupta and Gupta, 1990, 1991; Kumar and Gupta 1990a, b).

In order to procure maximum number of flies different methods of collection like bait-trap or net sweeping were employed. Occasionally flies were also collected using aspirator.

This paper deals with the description of two more new species recently collected from the vicinity of Gangtok in Sikkim.

Drosophila (Scaptodrosophila) zingiphila
sp. nov.

Average length of the body : 2.55 mm (♂),
2.87 mm (♀).

Head, ♂ ♀ : Arista with 3 dorsal and 2 ventral branches in addition to terminal fork. Antennae with second segment pale brown; third segment lighter. Frons

including ocellar triangle pale brown. Orbitals in ratio 7:2:8, anterior reclinate orbital closer to proclinate than to posterior reclinate. Vibrissa single, strong. Palpus yellow, with 3-4 marginal setae. Carina yellow, narrow and high. Face and cheek pale yellow; greatest width of cheek 1/5 greatest diameter of eye. Clypeus brownish. Eyes red.

Thorax, ♂ ♀ : Mesonotum and scutellum unicolorous, brownish yellow. Thoracic pleura brownish yellow, all 3 sternopleural bristles large. Acrostichal hairs in 8 regular rows. Anterior scutellars nearly parallel; posterior scutellars crossed each other. Prescutellar bristles well developed. Distance between anterior and posterior dorsocentrals 1/4 the distance between two anterior dorsocentrals.

Legs straw yellow. Preapicals on all three tibiae; apicals on first and second tibiae.

Wings, ♂ ♀ (Fig. 4) : Hyaline, posterior crossvein mildly fuscous. Approximate wing-vein indices: C-index 3.9-4.2; 4V-index 1.6-1.7; 4C-index 0.62-0.64; 5X-index 1.22-1.25; C₃ fringe 1/3. Haltere pale yellow.

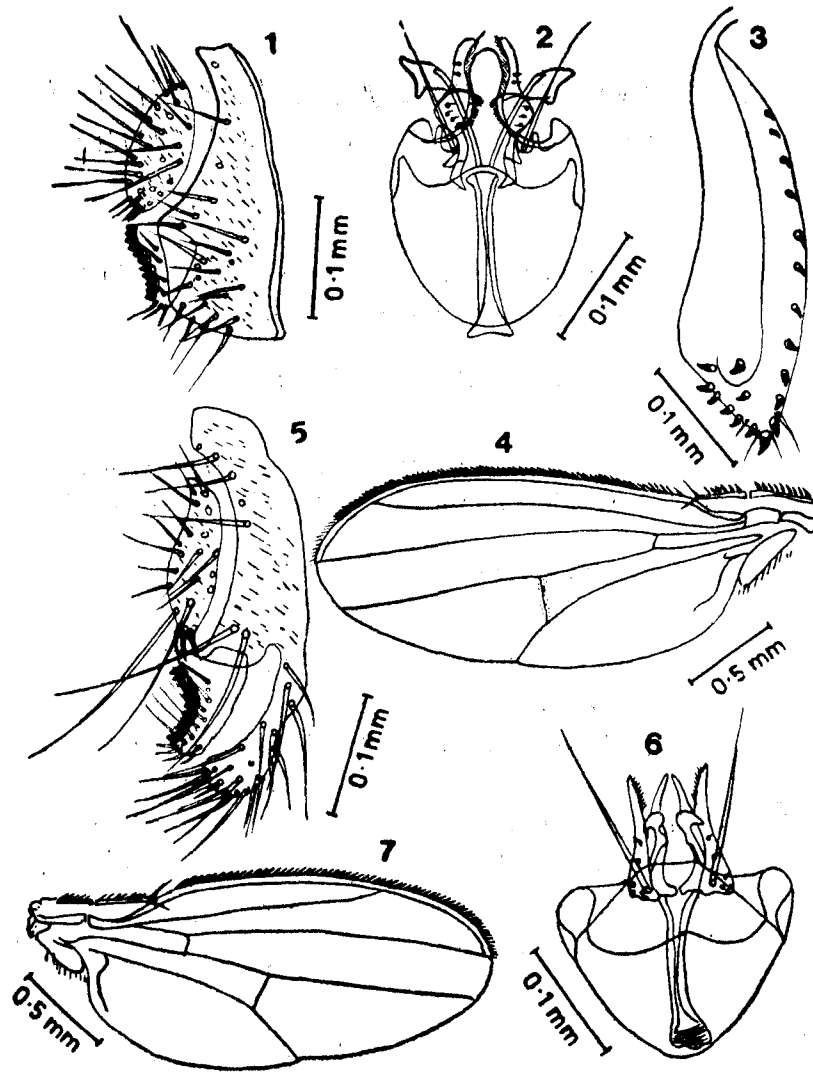


Fig. 1-4. *Drosophila (Scaptodrosophila) zingiphila* sp. nov.: 1. Periphallallic organs; 2. Phallic organs; 3. Egg-guide; 4. Male wing.

Figs. 5-7. *Drosophila (Scaptodrosophila) vazrae* sp. nov.: 5. Periphallallic organs; 6. Phallic organs; 7. Male wing.

Abdomen, ♂ ♀: Yellow, tergites with dark brown apical bands.

Periphallallic organs (Fig. 1): Epandrium pubescent, broad below, with about 23 bristles along posterior margin. Surstylus triangular, with about 11 black teeth arranged in a concave row and 6-7 small tough bristles. Cercus somewhat elliptical, pubescent, with about 25-27 bristles.

Phallic organs (Fig. 2): Aedeagus broad, straight, with tip rounded. Anterior gonapophysis large, apically narrow and

hairy, with about 6-7 sensilla on middle region. Posterior gonapophysis dilated basally, broadened apically. Novasternum with a pair of long apartly placed submedian spines. Ventral fragma rounded distally.

Egg-guide (Fig. 3): Lobe elongate, with about 17 marginal and 3 discal teeth.

Holotype ♂, INDIA, SIKKIM, Gangtok district, Ranipool, March 1989 (Kumar and Gupta). **Paratype**: 6 ♂♂, 5 ♀♀, same locality and collectors as holotype. Deposited in "*Drosophila* collection", Department

of Zoology, Banaras Hindu University, Varanasi, India and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan.

Relationships: This species closely resembles *Drosophila (Scaptodrosophila) elenthiensis* Sundaran and Gupta (1991, in press) in body colouration, number of arista branches and in the general pattern of male and female genital structures, but clearly differs from it in having posterior cross vein mildly fuscous (clear in *elenthiensis*), posterior gonapophyses dilated basally and broadened apically (absent in *elenthiensis*), and egg-guide lobe with 17 marginal and 3 discal teeth (with 20 marginal and 6 discal teeth in *elenthiensis*).

Distribution : INDIA

***Drosophila (Scaptodrosophila) vazrae* sp. nov.**
Average length of the body : 2.48 mm (♂), 2.76 mm (♀).

Head, ♂ ♀ : Arista with 3–4 dorsal and 2 ventral branches in addition to terminal fork. Antennae with second segment brownish yellow; third segment light brown. Frons including ocellar triangle orange brown. Orbitals in ratio 6:3:7, anterior reclinate close to proclinate than to posterior reclinate. Vibrissa single and strong. Palpus orange yellow, with 2 prominent setae. Face and cheek pale tan; greatest width of cheek 1/6 greatest diameter of eye. Carina narrow, high. Clypeus brownish. Eyes red.

Thorax, ♂ ♀ : Mesonotum and scutellum pale brown, much darker in old individuals. Thoracic pleura dark brownish. Acrostichal hairs in 8 regular rows. Anterior scutellars convergent; posterior scutellars crossed each other. Prescutellar bristles not distinguishable. Distance between anterior and posterior dorsocentral 3/5 the distance between two anterior dorsocentrals.

Legs dull yellow. Preapicals on all three; tibiae; apicals on first and second tibiae.

Wings, ♂ ♀ (Fig. 7) : Hyaline. Approximate wing-vein indices: C-index 1.8–2.0; 4V-index 2.35; 4C-index 1.4; 5X-index 1.85; C₃ fringe 2/3. Haltere white.

Abdomen, ♂ ♀ : 1T yellow, 2T with medially interrupted dark brown band, the remaining tergites completely dark brown.

Periphallalic organs (Fig. 5): Epandrium large, pubescent, narrowly projected at lower tip, upper portion with about 5 bristles; lower portion with about 23 bristles, 2 bristles placed near the insertion of surstylus much larger. Surstylus crescent, with about 13 black stout teeth and about 8 bristles behind teeth and 4–5 stout setae below. Cercus narrow, pubescent, with about 18 bristles, 2 lower bristles largest and 3–4 black stout setae at lower tip.

Phallic organs (Fig. 6) : Aedeagus bifid, apically narrowing and pointed. Anterior gonapophysis large, apically tapering and hirsute, with 3 sensilla on lower half. Posterior gonapophysis minute, fused with aedeagus. Novasternum with a pair of long submedian spines. Ventral fragma triangular.

Holotype ♂, INDIA, SIKKIM, Gangtok district, Ranipool, March 1989 (Kumar and Gupta). **Paratype**: 5 ♂♂ 1 ♀, same locality and collectors as holotype. Deposited in "Drosophila collection," Department of Zoology, Banaras Hindu University, Varanasi, India and Department of Biology, Tokyo Metropolitan University, Tokyo, Japan.

Relationships : This species closely resembles *Drosophila (Scaptodrosophila) ambiguifascia* Okada and Carson (1983) with respect to the colouration of antennae, palpi and legs, number of arista branches but distinctly differs from it in having mesonotum and

scutellum pale brown (pruinose grey in *ambiguifascia*), cercus with two unusually large lower bristles and 3–4 black stout setae at lower tip (absent in *ambiguifascia*), aedeagus bifid (fused in *ambiguifascia*), anterior gonapophysis apically hirsute and with 3 minute sensilla on lower half (bare and with 3 apical sensilla in *ambiguifascia*), and ventral fragma triangular (quadrate in *ambiguifascia*).

Distribution : INDIA.

ACKNOWLEDGEMENTS

Our sincere thanks are due to Dr. T. OKADA, Professor Emeritus, Department of Biology, Tokyo Metropolitan University, Japan, for his help in confirming the identifications and to the Head, Department of Zoology, Banaras Hindu University for facilities. Financial assistance is gratefully acknowledged to University Grants Commission, New Delhi in the form of a Teacher fellowship to AK under Faculty Improvement Programme.

REFERENCES

- GUPTA, K. K. & J. P. GUPTA (1990) Two new species of *Drosophila* Fallen 1823 associated with flowers in Sikkim, India. (Insecta; Diptera: Drosophilidae). *Senckenberg. biol.*, **71**, 59–63.
- GUPTA, K. K. & J. P. GUPTA (1991) Four new and two unrecorded species of Drosophilidae (Insecta: Diptera) from India. *Proc. Zool. Soc.* (In press).
- KUMAR, AJAI & J. P. GUPTA (1990a) Four new species of Drosophilidae (Diptera: Insecta) from Sikkim, India. *Proc. Zool. Soc.*, **43**, 25–30.
- KUMAR, AJAI & J. P. GUPTA (1990b) Further records of two new and two unrecorded species of Drosophilidae from Sikkim, India. (Insecta: Diptera). *Senckenberg. biol.*, (In press).
- OKADA, T. & H. L. CARSON (1983) Drosophilidae from banana trap over an altitudinal transect in Papua New Guinea. I. Description of new species with notes on newly recorded species. *Internat. J. Ent.*, **25** (2–3), 127–141.
- SUNDARAN, A. K. & J. P. GUPTA (1991) A revision of subgenus *Scaptodrosophila* from India. *Zool. Scripta*, (In press).