

Entomon, 1980, Vol. 5, No. 4, pp. 331 to 334

✓ A NEW SPECIES OF THE *MONTIUM* SUBGROUP OF GENUS *DROSOPHILA* (DIPTERA : DROSOPHILIDAE)

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(Received 22 March 1980)

A new species *Drosophila sampagensis*, a member of the *montium* subgroup of *melanogaster* species group collected from Sampage Ghats (Coorg District) is described. The taxonomic status and relationships are discussed.

(Key words: *Drosophila sampagensis*, new species, *montium* subgroup)

Judging from the reports on *Drosophila* taxonomy from other parts of the world, it appears that the number of species reported thus far from the Indian subcontinent is too small and is not commensurate with the luxuriant flora and diverse climatic conditions of the country providing many natural habitats for colonisation by *Drosophila* species. Still many parts await exploration to get a comprehensive knowledge on the *Drosophila* species inhabiting the subcontinent. In view of this the authors have chosen the unexplored area of the tropical rain forests of Coorg district situated on the summit of Western Ghats in the south-western part of Karnataka State between north latitude 11° 56' and 12° 50' and east longitude 75° 22' and 76° 11' to get an insight into the *Drosophila* species inhabiting this region. It is a picturesque high land clothed with primeval forests or grassy lands broken by a few cultivated valleys. This part of Western Ghats with its tropical flora and moderate to heavy rainfall offers an abode for the members of genus *Drosophila*. A maiden collection trip to Sampage Ghats, about 20 km to the west of Madakeri, has yielded several known species in addition to a new species, *Drosophila sampagensis* which is herein described.

✓ ***Drosophila sampagensis*, sp. nov.**

Body length: Male 2.46 mm; Females 2.72 mm.

Head: ♂ and ♀ : Arista with 9 branches (5/4) including the terminal fork. Front light brown. Antenna dark brown. Basal segment of the antenna light yellow. Carina narrow. Palpi yellow and slender. Ocellar triangle small and light brown. Ocellar bristles long, proclinate. Inner verticals longer, outer verticals slightly shorter than inner ones. Orbital bristles in the ratio of 2:1:2. Eyes red.

Thorax: ♂ and ♀ : Brownish yellow, Acrostichal hairs in 8 rows, regularly placed. Ratio anterior: posterior dorsocentrals 0.5. Scutellum light brown. Anterior scutellars convergent, posterior scutellars crossed. Sternoindeces 0.5. Pre-scutellars absent.

Legs: Pre-apical bristles on all tibiae. Apicals on first and second tibiae. Sex comb of male (Fig. 1) longitudinal, along the entire length of metatarsus and second tarsal segment. Metatarsal comb consisting of about 11 to 14 teeth, smaller above, longer below. Comb on second tarsal segment with about 5 to 9 uniform teeth.

Wings: ♂ and ♀ : Smoky and hyaline.

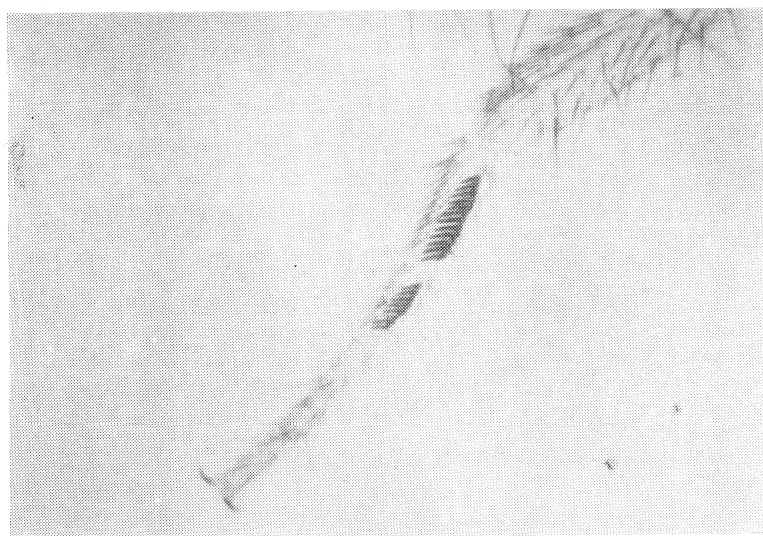


Fig. 1. Foreleg of male showing sex-combs.

C-index, 2.31; *4V*-index, 2.47; *5X*-index, 2.33; *M*-index, 0.9. Third costal section with heavy setation on basal 0.5. Wing lengths 2.76 mm (male): 2.96 mm (females).

Abdomen: ♂ and ♀ : Tergites of both sexes yellowish brown with dark apical bands which become darker in females with age.

Periphallic organs (Fig. 2) : Epandrium (Genital arch) broad dorsally and laterally; the round, heel with about 6 bristles. Primary and secondary surstyli present. Primary surstylus (primary clasper) broad, yellowish devoid of teeth but with a lateral row of about 6 irregularly arranged bristles, and a cluster of about 10 bristles on the lower border. Secondary surstylus (secondary clasper) fused with the cerci (anal plate), and carry 2 large curved black median teeth; the upper tooth is smaller than the lower. Cerci brownish, oval with about 16 bristles.

Phallic organs (Fig. 3): Aedeagus long apically pointed, recurved and barc. An-

terior gonopophyses (anterior parameres) triangular with hairy sensilla, not articulated to aedeagus. Posterior gonopophyses (posterior parameres) long, reaching the tip of the aedeagus. Caudal margin of novasternum with elongate median truncate processes, apically with a pair of submedian spines. Basal apodeme not projecting beyond the fragma.

Egg guide (Fig. 4): Brown with about 13 teeth and a subterminal hair.

Internal structures: Testes (Fig. 5) yellowish with 3 coils. Accessory glands large and transparent. Spermathecae (Fig. 6) vestigial. Paraovaria small, ventral receptacle long, tightly coiled. Malpighian tubules two pairs, free.

Egg filaments (Fig. 7): 2 long slender filaments.

Pupae: Black, anterior spiracle with about 8 9 branches.

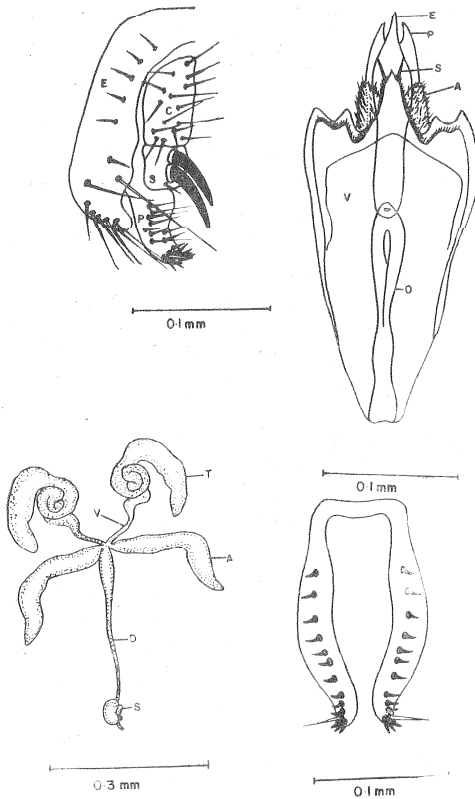


Fig. 2. (Upper left) Periphallallic organs; C—Cerci; E—Epandrium; P—Primary surstylus; S—Secondary surstylus. Fig. 3. (Upper right) Phallic organs. A—Anterior gonopophyses; E—Aedeagus; O—Basal apodeme of aedeagus; P—Posterior gonopophyses; S—Submedian spine of novasternum; V—Ventral fragma. Fig. 4. (Lower left) Male reproductive organs. A—Accessory gland; D—Anterior ejaculatory duct; S—Ejaculatory bulb; T—Testes; V—Vas deferens.

Distribution: Coorg district (Western Ghats), Karnataka, India.

Taxonomic status: The nature of the banding pattern of abdominal tergites, sex comb pattern, structure of periphallallic and phallic organs, long coiled ventral receptacle and spiral testes qualify its inclusion in the *melanogster* species group of the subgenus

Sophophora. The yellowish abdominal tergites with distinct apical bands, presence of sex combs in male along the entire length of metatarsus and second tarsal segment, secondary sur-stylus with curved black median teeth permit its inclusion in the *montium* subgroup (Bock and Wheeler, 1972.)

Relationships and remarks: Okada (Personal Communication, February 1980) has pointed out that the new species resembles *D. barbata* (Bock and Wheeler, 1972) but differs from it in details. On comparison with other members of the *montium* subgroup it is found that the new species also resembles *D. mysorensis* (Reddy and Krishna Murthy, 1970) in the structure of periphallallic organs. However, the new species distinctly differs from both *D. barbata* and *D. mysorensis* in the intensity of pigmentation of apical bands in males, number and pattern of teeth in the sex combs and in the structure of anterior parameres. Further, the combination of characters such as the pattern and number of teeth in the sex combs, the structure of periphallallic and phallic organs are unique to this species and are not found together in any known species of the *montium* subgroup. Therefore, it deserves the status of a new species.

The new species can be cultured in the laboratory for two generations. The progenies obtained were very few and were used for the analysis of wing indices and other morphological characters.

The specific name *Drosophila sampagensis* is coined to denote the place, Sampage Ghats, where it was collected for the first time.

Holotype: ♂, INDIA, KARNATAKA, Coorg district (Western Ghats): Sampage Ghats, 12-i-1980. Coll. N. Muniyappa, G. Sreerama Reddy and H.S. Prakash. Deposited

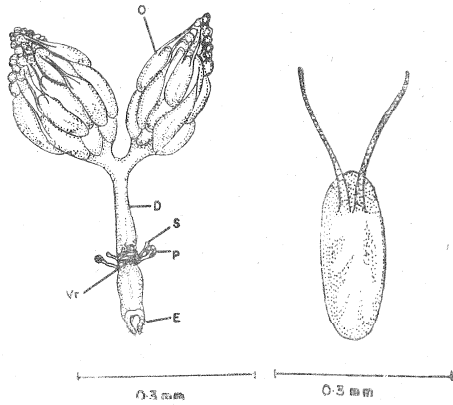


Fig. 6. (left) Female reproductive organs. D—Oviduct; E—Egg guide; O—Ovary; P—Paraovaria; S—Spermatheca; Vr—Ventral receptacle. Fig. 7. (right) Egg.

in the museum of the Department of Zoology, Manasa Gangotri, University of Mysore, Mysore. **Paratypes:** 10 ♂♂ and 10 ♀♀, data as above. Deposited in the Department of Biology, Tokyo Metropolitan University, Setagaya-ku, Tokyo, Japan and some will

be deposited in the Zoological Survey of India, Calcutta and Indian Agricultural Research Institute, New Delhi.

Acknowledgements:—The authors are grateful to Professor N.B. KRISHNA MURTHY, Head of the Department of Zoology, Manasa Gangotri, Mysore, for providing necessary facilities and constant encouragement to carry out the work. We are highly thankful to Professor T. OKADA, Tokyo Metropolitan University, Setagaya-ku, Tokyo, Japan, for his help in confirming the identification, and to H.S. PRAKSH for the preparation of drawings. One of us (NM) is thankful to the University of Mysore for awarding the Teacher Fellowship under the Faculty Improvement Programme.

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