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Phallabaffi

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DESCRIPTION OF A NEW SPECIES *DROSOPHILA SEPTACOILA*  
(DIPTERA: DROSOPHILIDAE) FROM SOUTH INDIA<sup>1</sup>

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(With seven text-figures)

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INTRODUCTION

South Kanara is a district located between 12.37° and 13.58°N latitude and 74.35° and 75.40° E longitude. It is essentially a forest district with heavy rainfall responsible for a variety of luxuriant flora and hence congenial for a variety of insect fauna. The forests are of evergreen and deciduous types.

Little information is available on the *Drosophila* fauna of this district, but with its congenial environment it may hold several *Drosophila* species which await discovery. This prompted us to undertake a collection trip to Dharmastala, a part of South Kanara, and its surrounding areas. The collections revealed rich fauna of *Drosophila* in addition to a new species *Drosophila septacoila*, a member of the *montium* subgroup which is described in this paper.

*Drosophila septacoila* sp. nov. (Figs. 1-7)

*Body length.* Male 2.02 mm, Female 2.19 mm.

*Head, ♂ and ♀.* Arista with 9 branches (5/4) including terminal fork. Front brown. Antenna dark brown. Carina narrow, slightly convex. Palpi yellow with 1 bristle. Orbital bristles in the ratio of 3:1:3. Inner verticals longer, outer verticals shorter than inner. Ocellar triangle small, brown, with a pair of long bristles, proclinate. Eyes red.

*Thorax, ♂ and ♀.* Brown. Acrostichal

hairs in 8 rows, regularly placed. Ratio anterior; posterior dorsocentrals 0.5. Scutellum brown. Anterior scutellars convergent, posterior scutellars convergent and crossed. Prescutellars absent. Sterno index 0.5.

*Wings, ♂ and ♀.* Translucent.

	C-	4V-	4C-	5X-	M-
	index	index	index	index	index
Male	1.66	0.4	0.65	2.63	0.38
Female	1.94	0.38	0.58	2.5	0.38

(Wing indices calculated after Okada 1956 and Bock 1976).

Third costal section with heavy setation on basal-male and female 0.5. Wing lengths: 1.56 mm (male) and 1.69 (female). Halteres small, pale yellowish.

*Legs.* Preapicals on all tibiae. Apicals on first and second tibiae. Sex comb of male (Fig. 1) longitudinal along entire length of metatarsus and second tarsal segment. Metatarsal comb consisting of 18 teeth, smaller above and longer below, the distal two displaced from axis of remaining teeth. Comb on second tarsal segment with 11 uniform teeth.

*Abdomen, ♂ and ♀.* Tergites of male yellow with dark apical bands. Pigmentation is broader on the mid dorsal portion of the tergites and is narrowed laterally. Abdominal pigmentation in females is similar to males except that the apical bands are slightly broader.

*Periphallic organs* (Figure 2). Light yellow. Epandrium round. Toe with 5 bristles. Pri-

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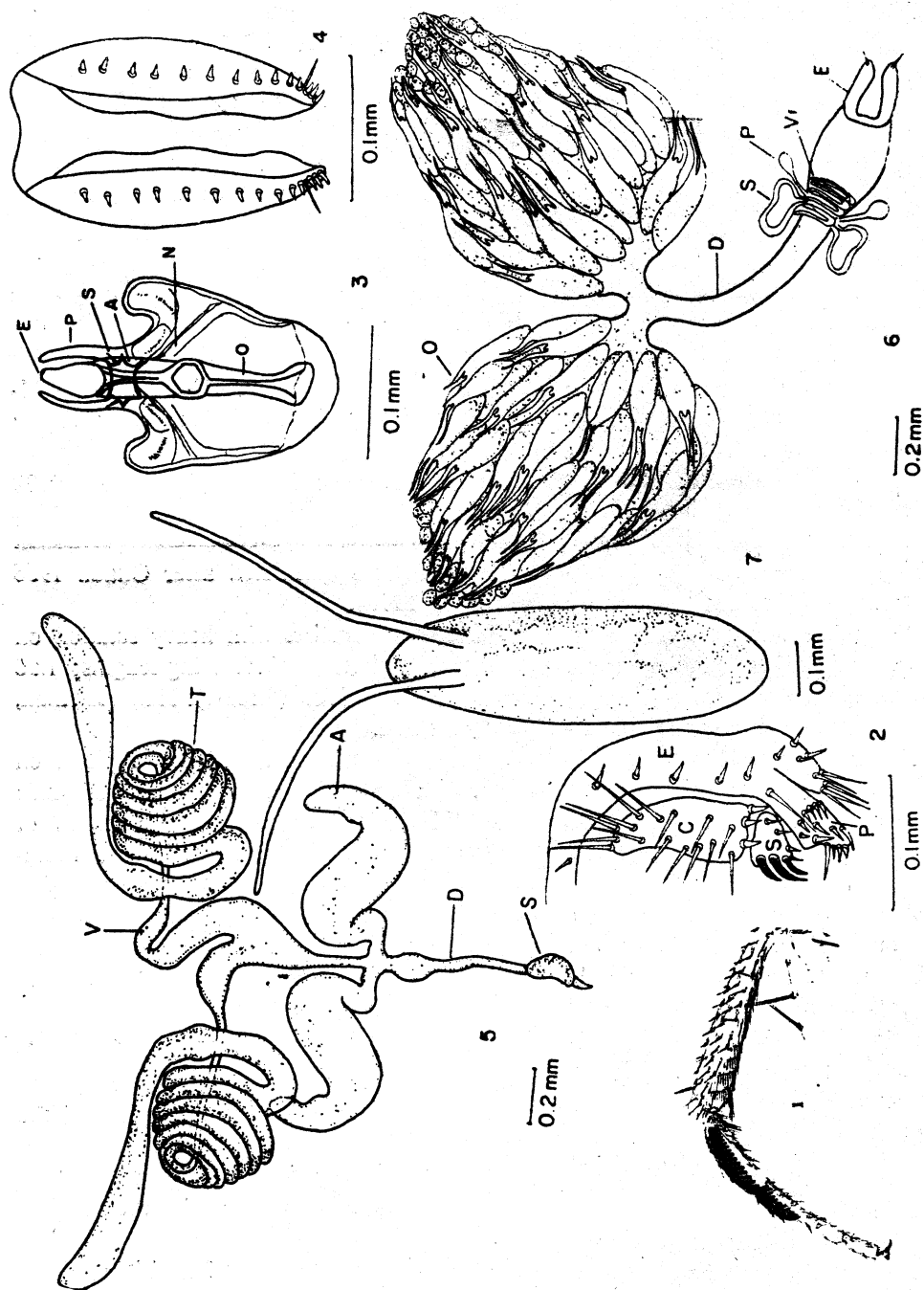


Fig. 1. Fore leg of male showing sex-comb. Fig. 2. Periphallallic organs: C = Cerci, E = Epiandrium, S = Secondary Surstylus, P = Primary Surstylus. Fig. 3. Phallic organs: A = Anterior gonopophyses, E = Aedeagus, N = Novasternum, O = Ejaculatory apodeme, P = Posterior gonopophyses, S = Submedian spine of novasternum, V = Ventral fragma. Fig. 4. Egg guide. Fig. 5. Male Reproductive Organs: A = Accessory glands, D = Anterior Ejaculatory Duct, S = Vagina, O = Ovary, P = Paraovaria, S = Spermatheca, Vr = Ventral receptacle. Fig. 7. Egg.

## NEW DESCRIPTIONS

mary and secondary surstylii present. Primary surstylus yellow, with a row of 4-5 teeth and a ventro-medial cluster of 7-9 teeth, one of which is elongated. Secondary surstylus separated from cerci, with 3 black teeth, the centre one being the longest. Secondary surstylus also bears 4 bristles on the ventro lateral margin. Cercus bears about 15 bristles in addition to 3 stumpy bristles on the ventral side.

*Phallic organs* (Fig. 3). Aedeagus yellow, hirsute and non-bifid. Anterior gonopophyses pointed. Posterior gonopophyses long, reach tip of aedeagus. Caudal margin of novasternum with prominent median convexity and bears a pair of spines. Novasternum bears sensilla towards the dorsal side. Basal apodeme does not project beyond ventral fragma.

*Egg guide* (Fig. 4). Yellow with 14 teeth and sub-terminal hair on each side.

*Internal structures*. Testes (Fig. 5). Yellowish with seven coils. Accessory glands large. Spermathecae (Fig. 6) large, paraovaria small, ventral receptacle long, tightly coiled. Malpighian tubules 2 pairs and free.

*Egg filaments* (Fig. 7). Two long slender filaments.

*Pupae*: Anterior spiracle with 11 branches.

*Distribution*. South Kanara District (Western Ghats), Karnataka, India.

*Taxonomic status*. The presence of egg with 2 blunt filaments, ventral receptacle that is not finely coiled, malpighian tubules free, presence of banded abdominal tergites qualify its inclusion in melanogaster species group of the Subgenus *Sophophora* (Sturtevant 1939, Patterson and Stone 1952). The presence of a large tooth bearing secondary surstylus separated from the cerci; presence of sex comb along entire length of metatarsus and second tarsal segment permits its inclusion in the

*montium* subgroup (Bock and Wheeler 1972).

### *Relationships and Remarks.*

On comparison with other members, this species shows resemblance to *D. vulcana* (Okada, pers. com.). This species resembles *D. vulcana* (Graber 1957) in gross morphological structures such as shape of the epandrium; cerci; in arrangement of teeth on primary surstylus, secondary surstylus; bristles on cerci and flattened egg filaments. However, the new species differs from *D. vulcana* with regard to the pigmentation of abdominal tergites (Shiny yellowish brown in males and shiny dark brown in females in *D. vulcana*); colour of the periphallic organ (black in *D. vulcana*); secondary surstylus completely separated from the cerci (partially separated in *D. vulcana*) and in the structure of the phallic organ. Further, the new species is characterized by having 18 teeth in the first set and 11 teeth in the second set in the sex comb, whereas *D. vulcana* has 19 teeth and 14 teeth respectively. A unique feature of this species is that the testis is made up of 7 coils whereas in the other members of the *montium* subgroup, it is usually 3 coils. This unique character along with others demands the status of a new species and hence it is named as *Drosophila septacoila* after the 7 coils of the testis.

*Holotype* ♂. INDIA. Karnataka, South Kanara District (Western Ghats) 4.x.82. Coll. P. G. Gai, N. B. Krishnamurthy and S. N. Hegde. Deposited in the museum of the Department of Zoology, University of Mysore, Manasagangotri, Mysore.

*Paratypes*. 5 ♂♂ and 5 ♀♀ (data same as above) 4 ♂♂ and 3 ♀♀ deposited in the Department of Biology, Tokyo Metropolitan University, Setagaya-ku, Tokyo, Japan.

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