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

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A new species *Drosophila jagri*, a member of the *takahashii* subgroup of the *melanogaster* species group, collected from Western Ghats is described. The taxonomic status and relationships are discussed.

(Key words: *Drosophila jagri*, new species, *takahashii* subgroup)

Western Ghats harbour numerous and diverse species of the genus *Drosophila*, many of which are still undescribed. The *Drosophila* fauna of this region contains a majority of species belonging to either *melanogaster* or *immigrans* species group (Prakash and Sreerama Reddy, 1978). Recent collections of *Drosophila* in Jagra valley, near Muthodi about 40 km to the west of Chikmagalur (a part of second phytogeographical region of Western Ghats), have yielded several known species in addition to a new species, *Drosophila jagri*, which is herein described.

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Drosophila jagri sp. nov.

Male and female: Bright yellow. Abdomen of male apically black. Mean body length, males 2.1 mm; females 2.4 mm.

Head, ♂ and ♀: Arista with 9 branches (5/4) including terminal fork. Front brownish yellow in male, dark brown in female. Antenna light yellow. Cheek with 2 medium sized vibrissae along with number of smaller ones. Palpi pale yellow. Carina narrow. Eyes orange red. Anterior orbitals same size as that of the posterior orbitals, middle half the size of the anterior. Inner and outer verticals are of same size and

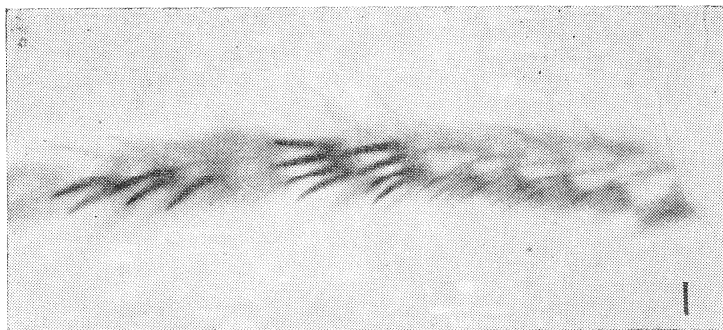
recline. Ocellar triangle small, brownish, with two long ocellar bristles.

Thorax, ♂ and ♀: Brown. Acrostichal hairs in 8 rows, regularly placed. Anterior dorsocentrals three-fourth the posterior. Scutellum light brown. Anterior scutellars convergent, posterior scutellars larger than the anterior and crossed. Posterior sternopleurals largest, anterior sternopleurals half the size of the posterior. In addition to small middle sternopleurals, 4 to 5 much smaller bristles are also present.

Wings, ♂ and ♀: Slightly dusky. Wing lengths: ♂ 1.9 mm; ♀ 2.2 mm. Halteres small yellowish. Approximate indices: Costal index 2.1; 4V index 2.3; 4C index 1.3; and 5X index 2.6.

Legs: Preapical bristles on all tibiae; apicals on first and second tibiae. Sex-comb of male (Fig. 1) in transverse rows of stout black bristles; two to three metatarsal rows of (from above down) 0-1, 2-4, and 3-5 teeth; and three to four rows on the second tarsal segment of (from above down) 0-2, 1-2, 2-3 and 2-3 teeth.

Periphallie organs, (Fig. 2): Epandrium (Genital arch) dark above, light below, broad laterally with a median dorsal



Drosophila jagri sp. nov. : Fig. 1. Foreleg of male showing sex-combs.

constriction. Toe elongate and narrow with 7-8 bristles. Primary surstylus (primary clasper) only present, large, with 5 sets of teeth—dorsolaterally with 2 black teeth; ventrolaterally with a comb of 5-6 long black teeth; dorsomedially with a row of 3-4 well spaced pointed ventrally recurved bristles; ventromedially with 1-2 thin black dorsally recurved bristles; and between these and the ventrolateral comb (on lower border of surtylus) 3-4 dusky, basally broad and apically pointed teeth. Cerci (anal plate) with long fine bristles above, and a cluster of smaller bristles below.

Phallic organs (Fig. 3): Aedeagus bare, apically rounded; basal apodeme long. Anterior gonapophyses (anterior parameres) large, crescentic, apically pointed, distally black. Posterior gonapophyses (posterior parameres) large, apically round with basal branches sclerotized and marginally serrate. Novasternum with lateral conical expansion bearing sensilla and a pair of submedian spines on caudal margin.

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

Internal structures : Testes yellow, with about 4 outer and 2-3 inner coils. Accessory glands large and transparent. Ejaculatory bulb globular (Fig. 5). Spermathecae bell

shaped, snuff coloured, paraovaria ovoid. ventral receptacle tightly coiled (Fig. 6). Malpighian tubules 2 pairs, free.

Egg filaments (Fig. 7) : 2 long slender filaments, slightly flattened apically.

Pupae : Anterior spiracles with about 8-9 branches.

Chromosomes : Male metaphase plate consists of 2 pairs of V's, a rod shaped X-chromosome, and a short Y.

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

Holotype ♂, INDIA : WESTERN GHATS : Karnataka : Jagra valley, 8. ix. 1977. Coll. H. S. Prakash and G. Sreerama Reddy. Deposited in the museum of Department of Zoology, Manasa Gangotri, University of Mysore, Mysore. **Allotype** ♀, data as above. **Paratypes** : 10 ♂♂ and 10 ♀♀, INDIA : WESTERN GHATS : Karnataka : Jagra Valley, Coll. H.S. Prakash and G. Sreerama Reddy. Deposited in the Department of Biology, Tokoyo Metropolitan University, Setagayaku, Tokyo, Japan and some will be deposited in Zoological Survey of India, Calcutta and Indian Agricultural Research Institute, New Delhi.

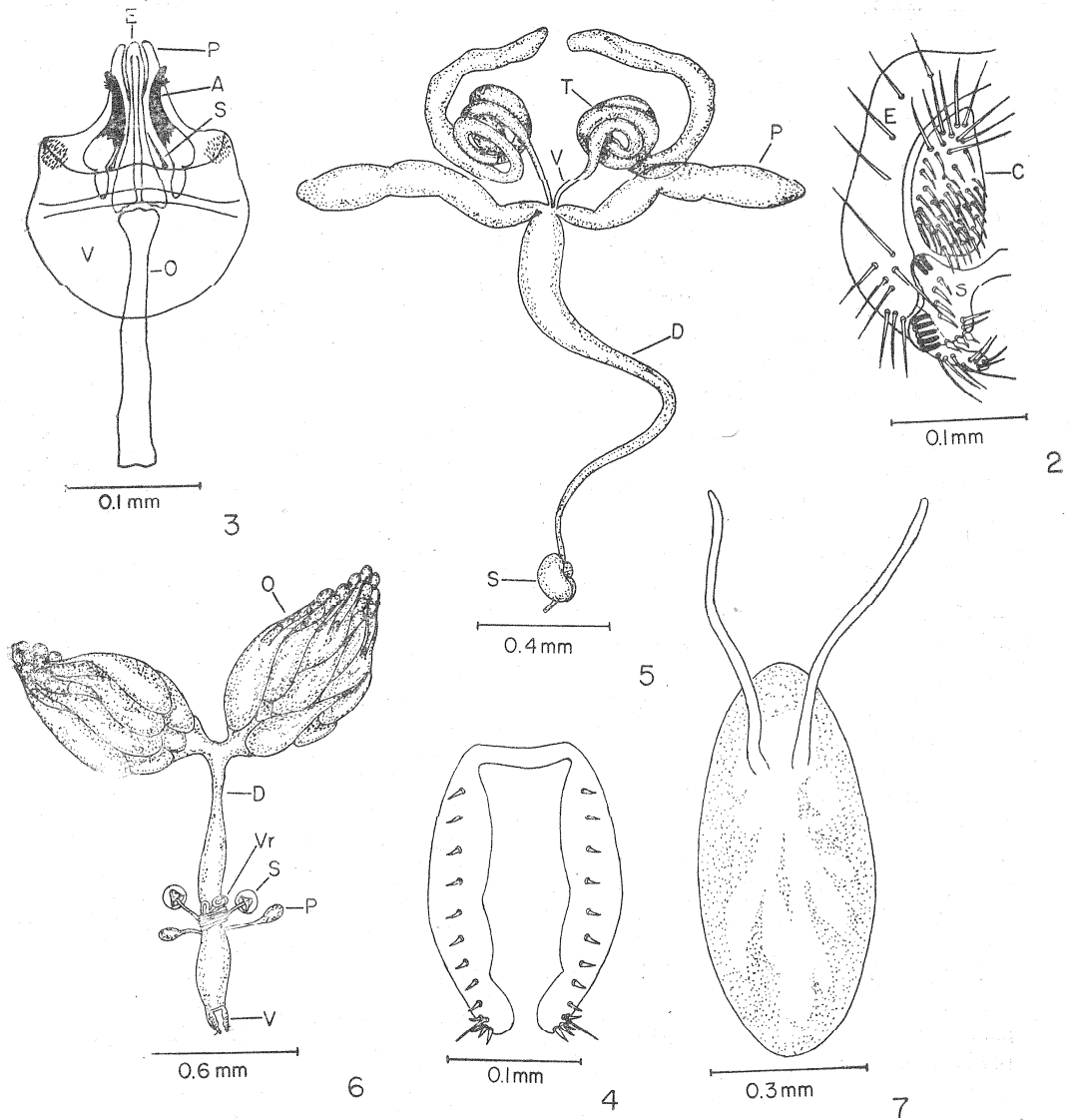


Fig. 2. Periphallallic organs : C - Cerci, E - Epandrium, S - Surstylus; Fig. 3. Phallic organs : A - Anterior gonapophyses, E - Aedeages, O - Ejaculatory apodeme, P - Posterior gonapophyses, S - Submedian spine of novasternum, V - Ventral fragma; Fig. 4. Egg guide. Fig. 5. Male Reproductive organs : D - Anterior ejaculatory duct, P - Accessory gland, S - Ejaculatory bulb, T - Testes, V - Vas deferens; Fig. 6. Female Reproductive organs : D - Oviduct, O - Ovary, P - Paraovaria, S - Spermatheca, V - Egg guide, Vr - Ventral receptacle; Fig. 7. Egg.

Distribution: India: Western Ghats : Karnataka.

Relationships and remarks : The nature of the banding pattern of abdominal tergites, egg with 2 filaments, presence of posterior pair of malpighian tubules which are free and the type of puparia warrants its inclusion in the subgenus *Sophophora*. The characters like yellowish abdomen which is distally shiny black in males; presence of sex-comb; periphallallic organs with well developed epandrium; surstylus with teeth (sctigerous clasper); phallic organs with anterior and posterior gonapophyses; long coiled ventral receptacle and spiral testes qualify its inclusion in the *melanogaster* species group (Bock and Wheeler, 1972). Further, the sex-comb in short transverse rows of stout black bristles on the first 2 tarsal segments; periphallallic organs with a surstylus possessing a ventrolateral comb of long rounded black teeth and a few black teeth dorsolaterally; phallic organs with large anterior and posterior gonapophyses, the anterior being apically black and pointed, and posterior having basal branches; and the presence of submedian spines on the caudal margin of novasternum permit its inclusion in the *takahashii* subgroup (Bock and Wheeler, 1972).

D. jagri sp. nov., resembles *D. giriensis* (Prakash and Sreerama Reddy, 1977) in general features of phallic organs and periphallallic organs. However, the two species differ from one another in the number of sex-comb rows, number of teeth in the ventrolateral comb of primary surstylus and in the shape of the aedeagus. Further, the new species differs from other members

of *takahashii* subgroup in having several sets of distinctly different teeth in the primary surstylus and possessing the lowest number of teeth (5-6) in the ventrolateral comb; arrangement of bristles on the cerci (long fine bristles above, cluster of small bristles below); number of sex-comb rows and teeth in each row and in the wing indices. The combination of these features in this species makes it distinctly different from other known members of *takahashii* subgroup, and therefore deserves the status of a new species.

The specific name, *Drosophila jagri*, is coined to denote the place, Jagra valley, from where it was collected for the first time.

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