

NEW DESCRIPTIONS

DESCRIPTION OF A NEW SPECIES *DROSOPHILA GANGOTRII* (DIPTERA: DROSOPHILIDAE) FROM SOUTH INDIA¹

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(With seven text-figures)

INTRODUCTION

Coorg district is a part of the humid belt of hilly or mountainous country of Western Ghats with variable altitudes ranging from 900—1200 metres. The mountainous range facing the Western side is on the threshold of south-west monsoon and receives a full blast of rainfall that has favoured the growth of thick tropical forests. The access to the interior is not easy since the valleys are surrounded by deep gorges. The sheltered locations of the gorges with rivulets provide many natural habitats for the colonisation by *Drosophila* species. The investigations carried out on the *Drosophila* fauna of such places has yielded number of *Drosophila* species in addition to a new species *Drosophila gangotrii* which is herein described.

Drosophila gangotrii sp. nov. (Figs. 1-7)

Body length: Males 2.2 mm, Females 2.4 mm.

Head, ♂ and ♀: Arista with 9 branches (6/3) including the terminal fork. Front pale brown. Antenna yellowish brown. Basal segment of the antenna dark tan. Carina narrow. Palpi yellowish with single stiff bristle. Greatest width of cheek 0.15 times greatest diameter

of eye. Orbital bristles in the ratio 3:1:3. Inner verticals longer, outer verticals small and three fourths the inner. Ocellar triangle broad with a pair of long ocellar bristles. Eyes red. *Thorax, ♂ and ♀:* Light brown, Acrostichal hairs in eight rows, regularly arranged. Ratio; anterior: Posterior dorsocentrals 0.5. Scutellum dark brown. Anterior scutellars convergent. Posterior scutellars crossed. Sterno-index 0.5. Prescutellars absent.

Wings, ♂ and ♀: Smoky and hyaline. *C*—index, 1.9, *4V*—index, 2.6, *5X*—index, 3.00, *M*—index, 1.00 (wing indices calculated after Bock, 1976). 3rd costal section with heavy setation on basal 0.5. Wing lengths 1.6 mm (male), 1.7 mm (female), Halteres small, yellowish.

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 26-29 teeth, basal teeth are small and contiguous, the distal two displaced from axis of remaining teeth. Comb on second tarsal segment with 13-17 uniform teeth. The distal teeth are contiguous.

Abdomen ♂ and ♀: Tergites of both sexes yellowish with five distinct narrow apical bands in female and three in male. The last tergite of female is yellowish while the remainder tergites of male are shiny black. The variability in the intensity of pigmentation of the apical bands in females is commonly observed.

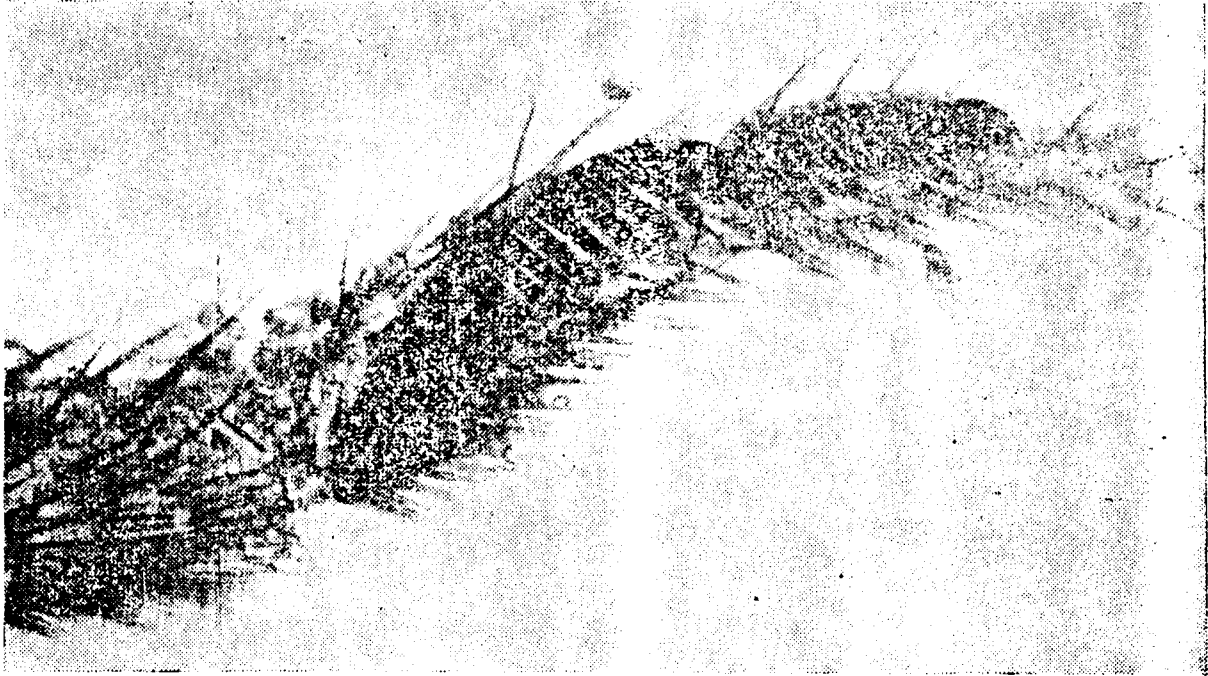
¹ Accepted December 1980.

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Periphallic organs (Fig. 2). Epandrium (Genital arch) broad and black dorsally, narrow and pale ventrally. Toe small, round with 4 bristles. Primary and secondary surstyli (clas-

rameres) long and slender reaching the tip of aedeagus. Caudal margin of novasternum with median truncate process, apically with a pair of submedian spines. Basal apodeme not pro-



Drosophila gangotrii sp. nov.

Fig. 1. Fore leg of male showing sex-combs.

pers) present. Primary surstylus yellow, broad with 5 regularly arranged lateral teeth and a ventromedial cluster of 7 teeth, inner one is long and curved. Secondary surstylus partially separated from cerci (anal plate) with 3 curved black teeth, of which lower one is short and a row of 5 chitinoid bristles on the dorso-lateral borders and 2 smaller bristles on the ventrolateral margin. Cerci light black with 16 bristles.

Phallic organs: (Fig. 3) Aedeagus yellow, non bifid, straight with denticles. Anterior gonapophyses (anterior parameres) triangular with sensilla. Posterior gonapophyses (posterior pa-

rameres) long and slender reaching the tip of aedeagus.

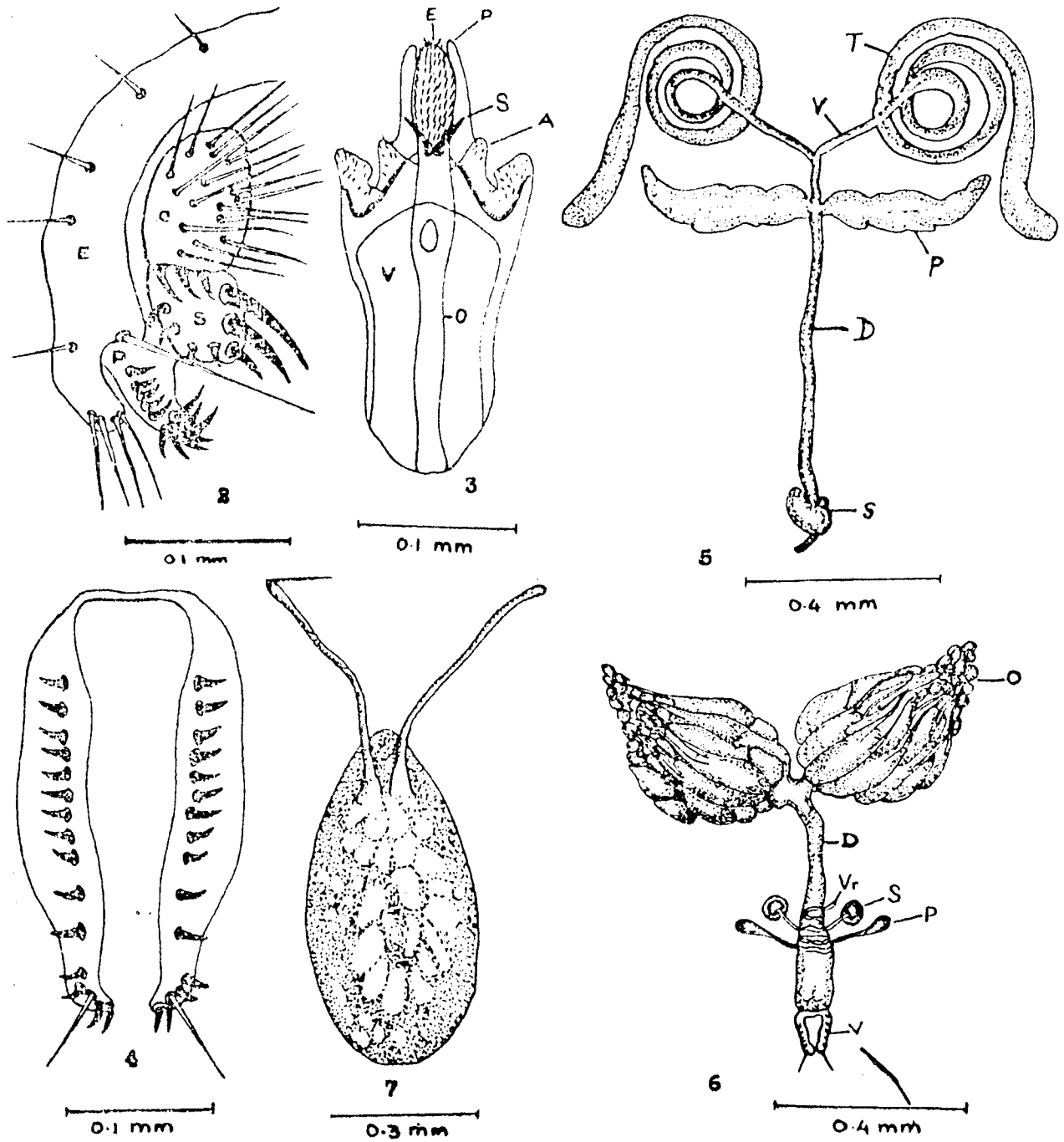
Egg-guide: (Fig. 4) Brown with 15 teeth and a sub-terminal hair.

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 2 pairs and free.

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

Pupae: Anterior spiracle with 9-10 branches.

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



Drosophila gangotrii sp. nov.

Fig. 2.Periphallallic organs: C=Cerci, E=Epandrium, S=Secondary surstylus, P=Primary surstylus. Fig. 3. Phallic organs: A=Anterior gonopophyses, E=Aedeagus, O=Ejaculatory apodeme, P=Posterior gonopophyses, S=Submedian spine of novasternum, V=Ventral fragma. Fig. 4. Egg guide. Fig. 5. Male Reproductive organs: D=Anterior ejaculatory duct, P=Paragonia, S=Sperm pump, T=Testes, V=Vas deferens. Fig. 6. Female Reproductive organs: D=Oviduct, O=Ovary, P=Para ovaria, S=Spermatheca, V=Vagina, Vr=Ventral receptacle. Fig. 7. Egg.

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Taxonomic status: The presence of 2 egg filaments, the nature of banding pattern of abdominal tergites and the puparia warrants its inclusion in the sub-genus *Sophophora*. The characters like the presence of long ventral receptacle, coiled testes, convergent scutellars and two pairs of malpighian tubules qualify its inclusion in the *melanogaster* species group (Patterson and Stone 1952). Further the prominent sex-comb extending beyond the tips of the tarsal joints, presence of 2 claspers in the male, secondary surstylus with curved black median teeth permit its inclusion in the *montium* sub group (Bock and Wheeler 1972).

Relationships and Remarks.

The new species shows certain similarities with *Drosophila punjabiensis* Parshad and Paika 1964, and *Drosophila jambulina* Parshad and Paika, 1964, but differs from them in several features (Okada personal communication, 1980). On comparison with other members of the *montium* sub group, it is found that it resembles *Drosophila nagarholensis* Prakash and Reddy, 1980 and *Drosophila agumbensis* Prakash and Reddy 1979, in the pattern and arrangement of sex-comb teeth and in the general features of periphallallic and phallic organs. Even though the new species resembles the above mentioned species in gross morphology, it not only differs from them in certain details in male genitalia, pattern of abdominal pigmentation, sex-comb and wing indices but is also found to be sexually isolated. Therefore it deserves the status of a new spe-

cies. The new species can be cultured in the laboratory with usual standard wheat cream agar medium. The specific name *Drosophila gangotrii* is coined after Manasa gangotri campus of the University of Mysore.

Holotype ♂, India, Karnataka, Coorg district (Western Ghats) 25.ii.1980. Coll. N. Muniyappa, G. Sreerama Reddy, H. S. Prakash, D. Theerthaprasad and B. M. Sekharappa. *Paratypes:* 10 ♂♂ and 10 ♀♀, same data as holotype. The holotype and some paratypes are deposited in the Department of Zoology, University of Mysore, Manasagangotri, Mysore. Other paratypes are also deposited in the Department of Biology, Tokyo metropolitan University, Setagayaku, Tokyo, Japan and in the Zoological survey of India, Calcutta and some will be deposited in the I.A.R.I., New Delhi.

ACKNOWLEDGEMENTS

We are grateful to Prof. N. B. Krishnamurthy, Head of the Department of Zoology, Manasa gangotri, University of Mysore, Mysore for providing necessary facilities and encouragement to carry out the work. We thank Prof. T. Okada, Tokyo, metropolitan University, Setagaya-ku Tokyo, Japan, for his help in confirming the identification and to M. Rajendra for the preparation of drawings. One of us (NM) is thankful to the University of Mysore for the award of Teacher fellowship under F.I.P.

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A NEW SPECIES OF HIGH ALTITUDE SPIDER OF THE GENUS
ERIGONE AUDOUIN (FAMILY: ERIGONIDAE) FROM INDIA¹

B. K. TIKADER²

(With six text-figures)

The spiders of the genus *Erigone* (Family Erigonidae) are little known from India. The only species *Erigone pseudoyagans* Caporiacco (1935) was described from Karakorum area. Holm (1960) has published a comprehensive study on spiders of the family Erigonidae from East African Mountains and Locket and Millidge (1935) have described many European species of this family. The spiders of this genus are small and inconspicuous and their webs are irregular, generally made in the hollows of stones at high altitudes. Only by moving the stones and with careful observation can these tiny spiders be seen on their irregular webs.

While examining the spider collections received from Dr. R. K. Varshney, Superintending Zoologist, Zoological Survey of India, Calcutta, which were collected by him from Rohtang Pass, I came across a new species of spider of the genus *Erigone*, which is described here. It is the second species of this genus from India.

The type specimen will in due course be deposited in the National Collections, Zoological Survey of India, Calcutta.

¹ Accepted October 1980.

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Erigone rohtangensis sp. nov.

(Figs. 1-6)

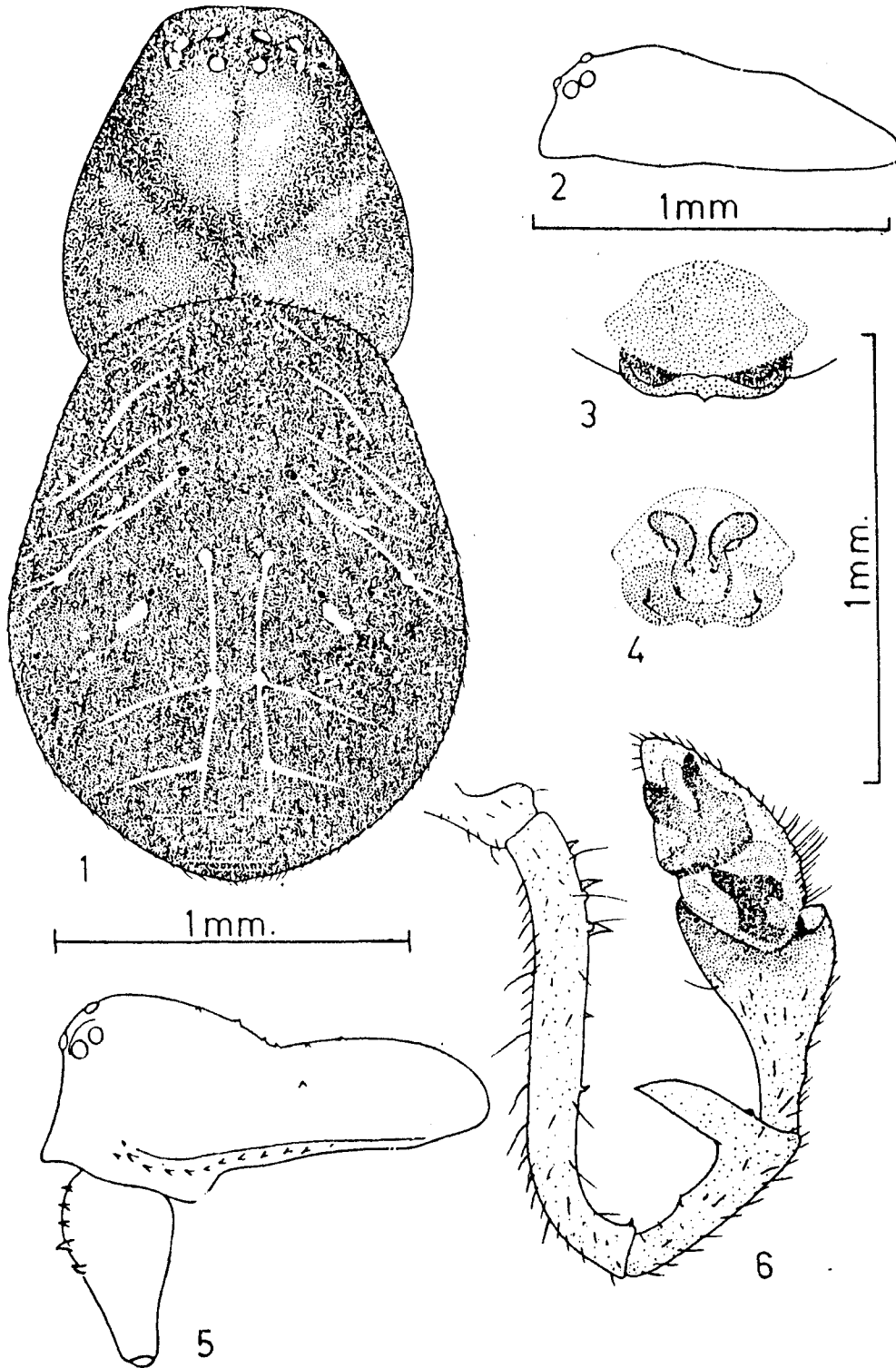
General: Cephalothorax and abdomen brown, legs brownish green. Total length 2.50 mm. Cephalothorax 1.00 mm long, 0.80 mm wide; abdomen 1.80 mm long; 1.20 mm wide.

Cephalothorax: Longer than wide, convex, cephalic region high, narrowing anteriorly. Eyes pearly white, eight in two rows. Anterior row strongly recurved and posterior row nearly straight or slightly procurved. Sternum reddish brown, nearly triangular or heart-shaped. Labium wider than long, maxillae longer than wide, clothed with fine pubescence. Legs moderately strong, clothed with hairs and spine-like hairs, legs formula 1423. Male cephalothorax high and clothed with some spines as in text-fig. 5. Ventral side of femur of male palp provided with teeth like spines extending from base to one half of length as in text-fig. 6. Male palp with well-defined tibial apophysis apically as in text-fig. 6.

Abdomen: Longer than wide, wider behind, clothed with fine pubescence and strongly overlapping cephalothorax in front. Dorsal side provided with pale rod like and rounded patches as in text-fig. 1. Ventral side shining reddish brown. Epigyne as in text-fig. 3 and internal genitalia as in text-fig. 4.

Type-specimen: *Holotype* one female, *paratype* ten females and *allotype* five males in spirit.

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Figs. 1-6. *Erigone rohtangensis* sp. nov. 1. Dorsal view of female, legs omitted; 2. Lateral view of cephalothorax of female; 3. Epigyne; 4. Internal genitalia; 5. Lateral view of cephalothorax of male; 6. Left palp outer side view.