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DROSOPHILA NEOTRAPEZIFRONS - A NEW SPECIES FROM PORT BLAIR, ANDAMAN ISLANDS

H. A. RANGANATH, N. B. KRISHNAMURTHY & S. N. IEGDE

Department of Post-Graduate Studies and Research in Zoology
University of Mysore, Manasa Gangotri, Mysore, India 570 006

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The new species *Drosophila neotrapezifrons* collected from Port Blair, Andamans has been taxonomically described. The interrelationships with other similar species are discussed.

(Key words: *Drosophila*, Port Blair, *D. neotrapezifrons*)

INTRODUCTION

Many workers have contributed to our knowledge on the *Drosophila* fauna of the mainland India (Gupta, 1974; Reddy, 1994; Gowda, 1979; Prakash, 1979). But thus far only one attempt has been made to screen *Drosophila* species of the neighbouring Andaman and Nicobar Islands (Gupta and Raychaudhuri, 1970). As islands are considered to be fertile regions for population differentiation and speciation, a project was undertaken to explore *Drosophila* fauna present in Andaman and Nicobar Islands. These are tropical island groups of Bay of Bengal forming an accretive chain of 1120 km. These islands with their humid climate, harbour evergreen forests with sparsely cultivated fields and plantations. The present paper deals with the description of a species collected from Port Blair (Andamans).

Drosophila neotrapezifrons sp. nov.

Male and female:- Brownish yellow flies, females larger than males. Mean length, males 1.71 mm (range 1.63—1.83 mm) females 2.00 mm (range 1.93—2.07 mm).

Head, male and female:- Arista with 7 branches (4/3) including the fork; An-

tenna yellowish brown; cheek light yellow with vibrissae having three large bristles with a group of small bristles. Palpi yellowish with a stiff bristle. Carina narrow. Eyes orange red. Anterior orbital small proclinate, middle and posterior orbitals reclinate, orbital bristles in the ratio of 1:2:1. Inner verticals small reclinate, outer verticals large reclinate. Outer verticals $1\frac{1}{2}$ times larger than inner ones ocellar triangle small shiny with two long bristles.

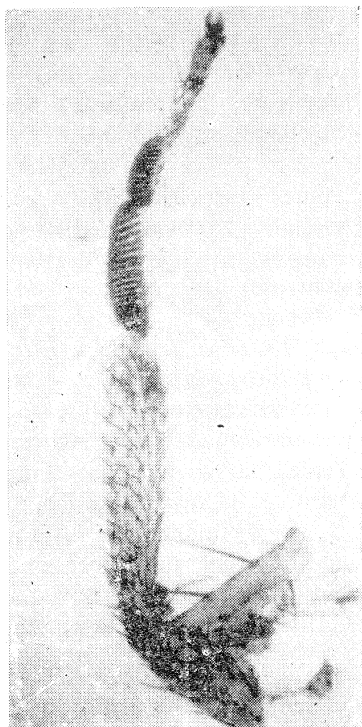
Thorax, males & females:- Brownish yellow. Axillary hairs in 8 regular rows. Anterior dorsocentrals $\frac{3}{4}$ the posterior. Anterior scutellars convergent. Posterior scutellars convergent and crossed. Sternopleurals with three large bristles and 5 to 8 smaller ones. Anterior sternopleural $\frac{3}{4}$ the posterior; and the middle one is the smallest. Both anterior and posterior alars are of same length.

Wings, males and females:- Transparent, mean length of the wings in males 1.16 mm (range 1.10—1.23 mm) and that of females 1.27 mm (range 1.23—1.33 mm). The wing indices are given in Table 1. These are calculated following the formulae of Okada (1956).

TABLE 1. Wing indices of *D. neotrapezifrons*.

	Costal index	4V index	4C index	5X index
Male	1.76 1.68-1.87	2.70 2.50-3.15	1.66 1.50-1.92	2.69 2.33-3.00
Female	1.61 1.70-1.74	2.66 2.33-2.84	1.72 1.53-1.85	2.65 2.40-3.25

Legs:- Preapicals on all tibiae and apicals on first and second. First tarsal segment of the foreleg in male carry two sets of sex combs, proximal set with 22 longitudinal teeth and the distal set with 16 teeth. Few anterior teeth of the proximal set are united (Fig. 1).

Fig. 1. *D. neotrapezifrons*: Sex comb.

Abdomen:- Males and females: Brownish yellow. Only the borders of the tergites are pigmented.

Periphallic organs:- (Fig. 2). Epandrium (Genital arch) brownish yellow, broad dorsally and laterally. Epandrium carries about 20-25 bristles. Both primary and secondary surstylus (claspers) present. Primary surstylus with a set of short teeth arranged in a row and a set of 8 irregularly arranged teeth. Secondary surstylus continuous with cerci (anal plate), and carries 3 large curved black medium teeth and 3 small teeth arranged in a row along the anterior margin. Cerci brownish with 11-13 bristles.

Phallic organs:- Aedeagus brownish yellow, long, broader basally, not hirsute and apically rounded. Anterior gonapophyses (parameres) are small with a few apical sensilla. Posterior gonapophyses are large with a chitinous spine which is directed posteriorly. Ejaculatory apodeme long, ventral fragma broad dorsally and laterally.

Egg guide:- (Fig. 4) Brown with about 12 to 14 teeth.

Internal characters:- Testes yellow with 5 coils. Paragonia relatively smaller than testes. Ejaculatory duct tubular without any enlargement (Fig. 6). In females the spermatheca is small, ventral receptacle is tightly coiled. Paragonia small (Fig. 5). Malpighian tubules 2 pairs and free.

Egg filaments: Two slender filaments. Slightly flattened apically.

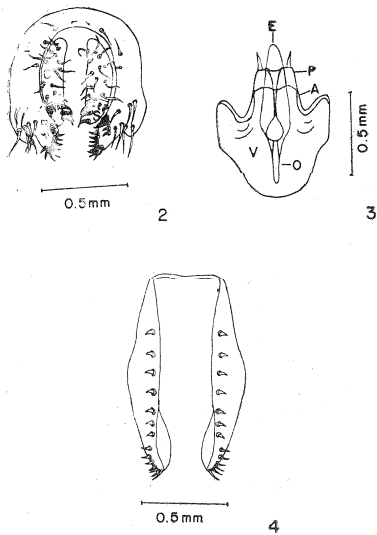


Fig. 2—4. *D. neotrapizifrons*. 2. Periphallallic organ: C. Cerci E. Epandrium P. Primary surstylus, S. Secondary surstylus. 3. Phallic organ: A. Anterior gonapophyses, E. Aedeagus P. Posterior gonapophyses O. Apodeme V. Ventral fragma. 4. Egg guide.

Pupae: Brownish yellow, Anterior spiracle with 8—22 branches. The species can be cultured only for two to four generations on wheat cream agar medium.

Holotype: Male: India, Andamans, Port Blair 14 × 19/9 Coll Ranganath. H. A. & Krishnamurthy. N. B. Deposited in the museum of Department of Zoology, Manasagangotri, University of Mysore, Mysore, India 570 006. **Allotype:** ♀, same as above. **Paratypes:** 5♂♂ and 5♀♀ India, Andamans, Port Blair Coll Ranganath, H. A. & N. B. Krishnamurthy, Deposited in the Department of Biology, Tokyo Metropolitan University, Setagaya-Ku, Tokyo, Japan and some will be deposited in Zoological Survey of India, Calcutta.

Distribution:- India, Andamans, Port Blair,

Relationships and Remarks:- The species under description posses coiled ventral receptacle, eggs with two blunt

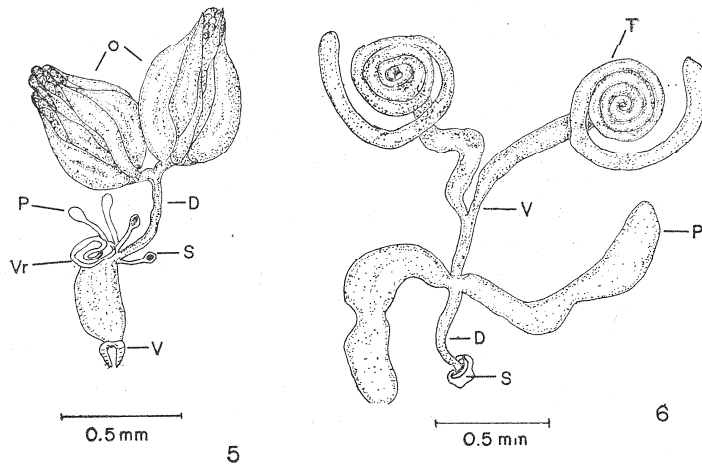


Fig. 5—6. 5. Female reproductive system: D. Oviduct; O. Ovary; P. Paragonia; S. Spermathecae; V. Egg guide; Vr. Ventral receptacle; 6. Male reproductive system; D. Anterior ejaculatory duct; P. Accessory gland; S. ejaculatory bulb; T. Testis; V. Vas deferens.

filaments and the nature of its abdominal banding pattern and these features justify its inclusion under the subgenus *Sophophora*. Further, because of the following features, namely presence of sex-comb, periphalllic organs with well developed epandrium, surstylus with teeth, phallic organs with anterior and posterior gonapophyses and coiled testes warrant its inclusion in the *melanogaster* species group. The contiguous nature of the cerci and secondary clasper, presence of black medium teeth on the latter and the bare tip of the aedeagus are characteristics of the *montium* species subgroup (cf. Bock and Wheeler, 1972). So the species under description comes under *montium* subgroup of the *melanogaster* species group of the subgenus *Sophophora*.

Prof. Okada (Personal communication) has remarked that this new species is close to *D. trapezifrons*, Okada (1966) but distinct from it. The species under description resembles *D. trapezifrons* in the shape of head; sex comb in two sets with same number of teeth, presence of preapicals on all tibiae, the distribution of bristles on genital arch and cerci. However it differs from *D. trapezifrons* in having 8 rows of acrosticals, irregularly arranged teeth on the primary surstylus, with three large teeth and in the organization of phallic organ. Hence this

species is christened as *Drosophila neotrapezifrons*.

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