

THE GENUS *HYPSELOTHYREA* FROM INDIA (DIPTERA : DROSOPHILIDAE)

ABHIJIT DE AND J. P. GUPTA

Genetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi 221005, India

ONE TEXT-FIGURE

Abstract

The description of two new species of the genus *Hypselothyrea*, *H. rotata* and *H. bengalensis* is provided. Taxonomic status and relationships of these two species are discussed. A key to the species recorded so far from India is also included.

Index key words : Taxonomy, Diptera, Drosophilidae, *Hypselothyrea rotata* n. sp., *Hypselothyrea bengalensis*, n.sp.

Introduction

The genus *Hypselothyrea* is also one of the little known interesting genera of the family Drosophilidae. It is represented by nineteen species only and distributed throughout the world (Gupta, 1974 ; Okada, 1980 ; Wheeler, 1981, 1986 ; Bock, 1982). Out of them, only four species are known from India (Gupta, 1993). This paper deals with the description of two more new species of *Hypselothyrea* from India.

The type specimens are deposited in the "Drosophila collection" of the Department of Zoology, Banaras Hindu University, Varanasi, India.

Material and Methods

The material for the present study was obtained from two different geographic localities namely Chinsura in West Bengal and Varanasi in Uttar Pradesh. Flies were collected with the help of an aspirator as well as by net sweeping over wild habitats. The specimens were then preserved in 70% alcohol on the spot. A detailed taxonomic study was made following the procedure adopted by Gupta (1969).

Taxonomic account

Genus *Hypselothyrea* de Meijere
Hypselothyrea de Meijere, 1906, *Annals. hist.-nat. Mus. natn. hung.*, 4 : 193. Type- species: *H. dimidiata* de Meijere; New Guinea.

Arista plumose; anterior reclinate orbital much reduced or absent; only one large katapisternal seta

present; scutellum typically pointed and strongly upturned ; anterior scutellar setae small or absent ; wing elongate with no anal vein.

Subgenus *Deplanothyrea* Okada

Acrostichal setulae present ; scutellum not upturned ; wing exceedingly narrowing proximally ; C-index less than 1.0.

Hypselothyrea (Deplanothyrea) rotata n.sp.

Average body length : 2.0-2.1 mm ♂ ; 2.4-2.5 mm ♀

Male and Female

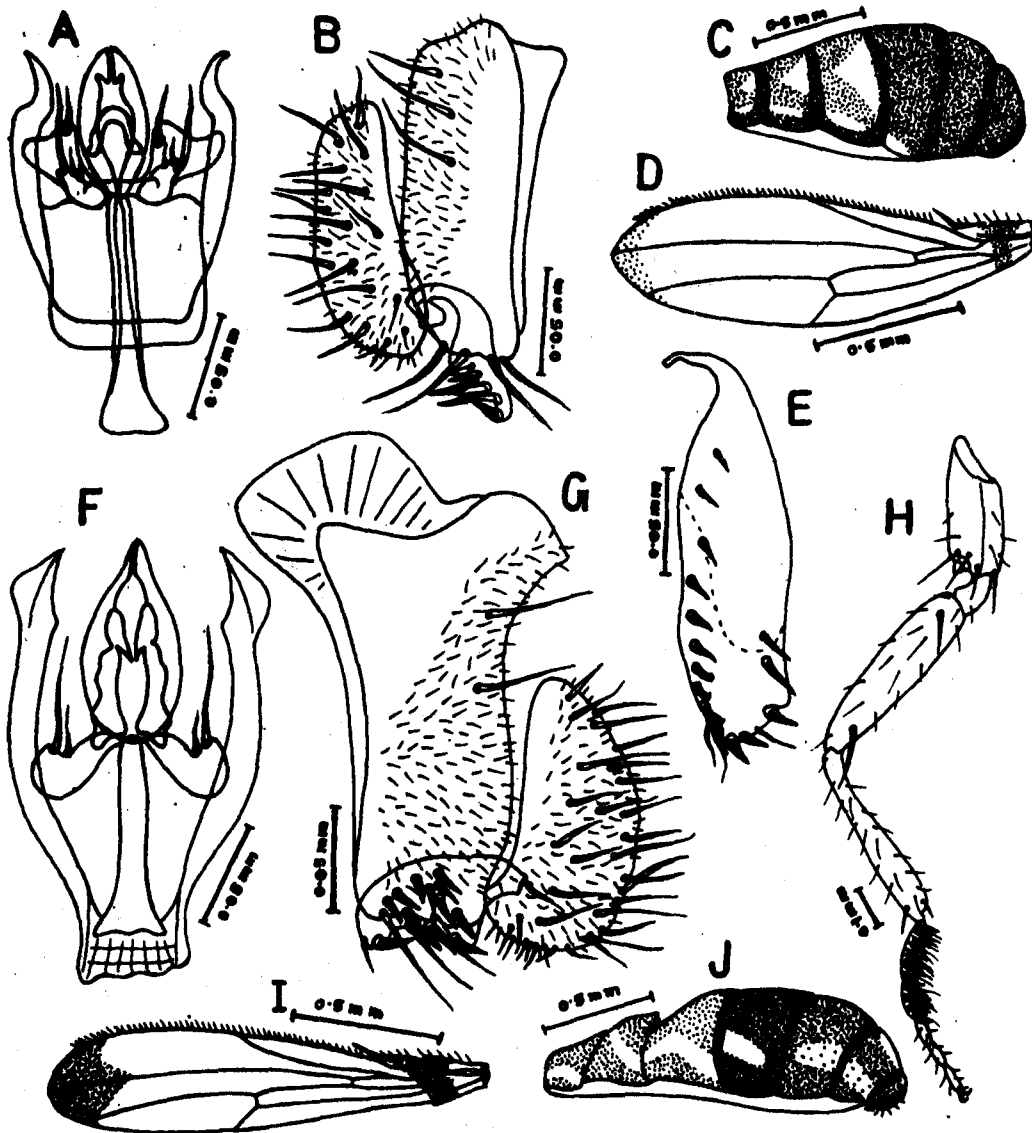
Head : Arista with 5-6 upper and 2 lower branches in addition to the large terminal fork. Antennae with pedicel and first flagellomere brownish dorsally and yellowish ventrally. Frons brown. Fronto-orbital plate little darker. Facial carina brown , narrow and low. Clypeus brown and broad. Palpus brown, lighter apically, with one seta. Vibrissa single and large. Gena brownish ; greatest width of gena about 1/6 the greatest diameter of eye. Anterior reclinate orbital absent, proclinate orbital 5/8 as long as posterior reclinate orbital. Eyes bright red.

Thorax : Mesonotum pale brown, light laterally, with two pairs of narrow dark bands, one pair along dorsocentral lines, another relatively lighter pair between the lines. Scutellum yellow.

Acrostichal setulae in 2 regular rows. Anterior dorsocentral setae small, posterior large and strong; distance between anterior and posterior dorsocentrals $4/5$ distance between the two anterior dorsocentrals. Anterior scutellars minute; posterior scutellars large, strong and directed upward. Thoracic pleura with a broad yellow stripe. Katepisternum dark brown, with only one large seta.

Legs : Fore and mid-pairs yellow, fore-femora with a strong subapical spine, hind-pair with black ring before middle on femora, the remaining lower portion of femora and tibiae brown.

Wings (Text-fig. 1D) : Hyaline, narrow, with a dark basal stripe and dusky at tip. Approximate wing vein indices : C-index 0.53 ; 4V-index 2.0 ; 4C-index 2.36 ; 5X-index 2.25. C₃ fringe $4/5$. Halter stem brown, lobe whitish .



TEXT-FIGURE 1. *Hypselothyrea (Deplanothyrea) rotata* De and Gupta (A-E). A, Phallic organs ; B, Periphallallic organs ; C, Dorsolateral view of male abdomen ; D, Male wing ; E, Egg-guide. *Hypselothyrea (Deplanothyrea) bengalensis* De and Gupta (F-J). F, Phallic organs ; G, Periphallallic organs ; H, Male fore leg ; I, Male wing ; J, Lateral view of male abdomen.

Abdomen (Text-fig. 1C) : I-III tergites yellow, with dark bands projected forward laterally, and backwardly projected diffused markings enclosing yellow areas ; the remaining tergites uniformly dark brown.

Periphalllic organs (Text-fig. 1B) : Epandrium brown, pubescent, with 3 upper and 4 basal setae. Cercus elongate, pubescent, with about 22 setae. Surstylus narrow, with 2 large, 1 apical small black teeth and 2 large, 2 small yellow teeth like setae.

Phallic organs (Text-fig. 1A) : Aedeagus bifid, basal apodeme longer than aedeagus. Anterior paramere small, with 1 large and 2 small sensilla. Novasternum with a pair of small submedian spines. Ventral fragma quadrate.

Egg-guide (Text-fig. 1E) : Elongate, with 13 marginal and 2 discal teeth.

Holotype ♂ : INDIA, WEST BENGAL, Chinsura, November, 1993. Coll. A.De and J.P.Gupta. Paratypes 2 ♂♂, same data as holotype; 3 ♀♀, INDIA, UTTAR PRADESH, Varanasi, April, 1993. Coll. A.K.Sundaran.

Relationships : This species closely resembles *H. varanasiensis* Gupta (1974) in the morphology of periphalllic organs and also having similar number of rows of acrostichal setulae and two pairs of dorsocentrals, but distinctly differs from it in having wing dusky at tip (clear in *varanasiensis*), and mesonotum pale brown, with two pairs of dark longitudinal stripes (mesonotum without longitudinal stripes in *varanasiensis*).

Distribution : India.

Etymology : *rotata* because of the characteristic wing rotation.

Hypselothyrea (Deplanothyrea) bengalensis n.sp.

Average body length: 1.75-1.8 mm ♂; 2.2 mm ♀

Male and Female

Head : Arista with 5-6 upper and 2 lower branches in addition to the large terminal fork.

Antennae with pedicel yellowish brown ; first flagellomere dorsally black and ventrally yellowish. Frons and fronto-orbital plate reddish brown. Facial carina brown, moderately ridged and somewhat broadened below. Clypeus large and brown. Vibrissa single, small. Palpus brown, lighter apically, with single seta. Gena brown ; greatest width of gena about 1/4 the greatest diameter of eye. Anterior reclinate orbital absent ; proclinate orbital 2/3 as long as posterior reclinate orbital. Eyes bright red.

Thorax : Mesonotum brownish yellow. Scutellum shiny yellow. Acrostichal setulae in 2 regular rows. Two pairs of dorsocentral setae present ; distance between anterior and posterior dorsocentrals 6/7 the distance between two anterior dorsocentrals. Anterior scutellars obscure ; posterior scutellars large, upright and highly convergent. Thoracic pleura with a broad yellow stripe, katapisternum brown, with single seta.

Legs (Text-fig. 1H) : Yellow ; fore femora with a strong subapical black seta, fore first and second tarsal segments somewhat swollen and with numerous setae, mid and hind tibiae as well as lower half of hind femora dark brown.

Wings (Text-fig. 1I) : Narrow, exceedingly at basal end, with one basal dark stripe and a distinct patch at tip. Approximate wing vein indices : C-index 0.64 ; 4C-index 2.18 ; 4V-index 1.9 ; 5X-index 2.25. C₃ fringe 0.8 . Halter stem brownish on upper surface, lobe white.

Abdomen (Text-fig. 1J) : Narrowing basally. Tergites dark brown, with laterally enclosing yellow areas, terminal tergites also with mid-dorsal yellow area. I-III tergites in male with faint colour, IVth tergite relatively darker.

Periphalllic organs (Text-fig. 1G) : Epandrium brown, pubescent, truncate below, with 2 upper and 3-4 basal setae. Cercus broadened below, pubescent, with about 25 large setae above and 5-6 small setae below. Surstylus antero-ventrally not clawed, with about 11-12 scattered stout black teeth.

Phallic organs (Text-fig. 1F) : Aedeagus bifid, narrowing apically, with medioventrally hooked

processes. Novasternum with lateral processes and two pairs of unequal submedian spines. Ventral phragma triangular.

Holotype ♂ : INDIA, WEST BENGAL, Chinsura, November, 1993. Coll. A. De and J. P. Gupta. *Paratypes* 2 ♂♂ 1 ♀, same data as holotype.

Relationships : This species closely resembles *Hypselothyrea breviscutellata* Duda (1928) in general morphology and the pattern of male genital structures, but clearly differs from it in having two pairs of dorsocentrals (one pair in *breviscutellata*), wing with one basal stripe and a dark apical patch (wing clear in *breviscutellata*), anterior scutellars obscure (anterior scutellars very fine in *breviscutellata*), and surstylus with 11- 12 scattered stout black teeth (6-7 teeth in two rows in *breviscutellata*).

Distribution : India.

Etymology : *bengalensis* named after the state of type locality.

Key to Indian species of Genus *Hypselothyrea*

1. Scutellum upturned subgenus- *Hypselothyrea* 2
—Scutellum not upturned . . . subgenus-*Deplanothyrea* 3
2. Frontal shield smooth and broad. C-index 2.0
. *fascipennis* de Meijere
—Frontal shield glossy and quadrate C-index 0.8
. *guttata* Duda
- 3 Wings absent *aptera* Papp
—Wings present 4
4. Wings clear at tip *varanasiensis* Gupta
—Wings dusky or with distinct dark patch at tip 5
5. Mesonotum with two pairs of longitudinal dark stripes
. *rotata* n.sp.
—Mesonotum without longitudinal dark stripes
. *bengalensis* n.sp.

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