

**DROSOPHILA (HIRTODROSOPHILA) CHANDLERI**  
**(DIPTERA: DROSOPHILIDAE) A NEW SPECIES FROM**  
**SRI LANKA WITH BROAD-HEADED MALES**

DAVID GRIMALDI

Department of Entomology, American Museum of Natural History,  
Central Park West at 79th Street, New York, New York 10024-5192

*Abstract.*—A new species from Sri Lanka, closely related to *Drosophila (H.) caputudis* (Grimaldi, 1986), is described and named *Drosophila chandleri*. Males have two very distinctive morphological features: a broad head, which is a result of expanded frontal-orbital plates and face, and a patch of very large, scaliform, interfacetal setulae in the middle of each eye.

*grimaldi in state sp. pr.*

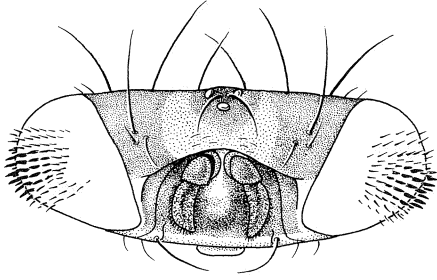
The purpose of this paper is to describe a new species of drosophilid so as to make the name available for a paper being prepared on the repeated evolution of broad-headed males in the Drosophilidae and other Diptera.

**Drosophila (Hirtodrosophila) chandleri**, new species  
Figs. 1-2b

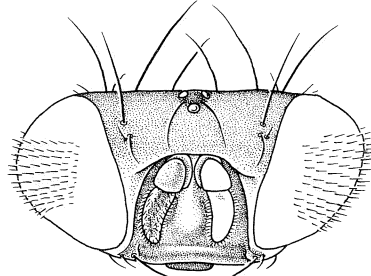
*Diagnosis.* Very similar to *Drosophila caputudis* with the exception of the following: in both sexes abdomen completely dark black-brown, halter knob light brown and blended into pleural stripe; all of notum, postscutellum, postnotum, and most of scutellum dark brown; front of head mostly dark brown, face dark brown with light cream-colored, modest carina. In males oral margin with light stripe; clypeus, kat-episternum, and all legs light cream-colored. In the females oral margin, clypeus, and portions of kat-episternum and legs brown. Males with patch of long, stout, scaliform interfacetal setulae on eye, head about 1 1/3 times the width of female head. Male and female terminalia as figured and discussed in description.

*Description.* Male head width 1 1/3-1 1/2 times the thorax width; head of female only slightly wider than thorax. Head in both sexes almost entirely dark brown; carina barely present, light yellow. Oral margin light in male, dark in female, rest of face (except carina) dark brown. Eyes dark red, with dense interfacetal setulae. Male with apical patch of interfacetal setulae modified into scales. Clypeus dark brown in female, light yellow in male. In both sexes palpi, proboscis, and cheeks light yellow; gena, postoccipt, and antenna dark brown. Arista with 6-7 dorsal and 2 ventral branches. Ratio of lengths of orbital setae: anterior reclinate (1); proclinate (2); posterior reclinate (6). Proclinate medial to anterior reclinate by distance one-half length of anterior reclinate. Postoccellars cruciate.

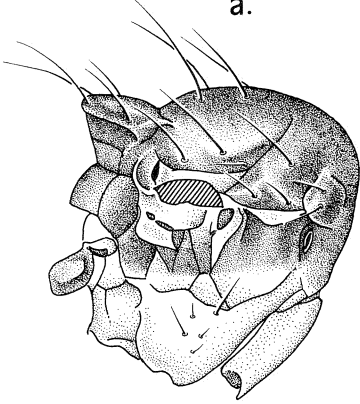
Male legs unicolorous light yellow; pleura mostly light yellow, with brown band at notopleural suture, running length of thorax. Female with middle three-fifths of femur diffuse brown, remaining portion of legs light yellow; most of pleuron dark brown. In both sexes, halter, notum, scutellum, subscutellum, and postnotum dark brown; all abdominal tergites black, sternites yellow. Wing hyaline, without markings. Spermathecal capsule subspherical and smooth, introvert annulate, slight swelling



a.



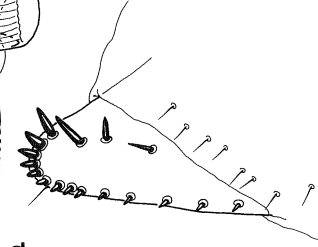
b.



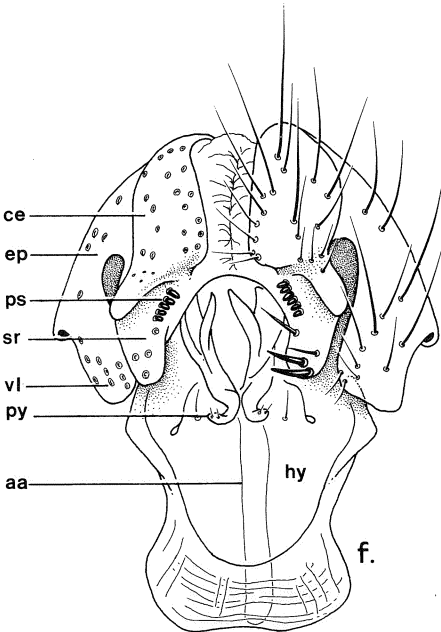
c.



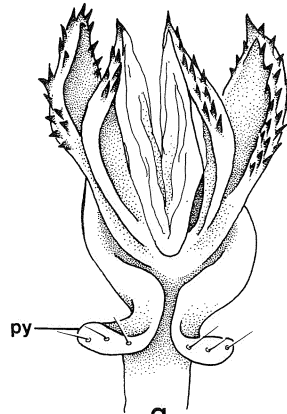
d.



e.



f.



g.

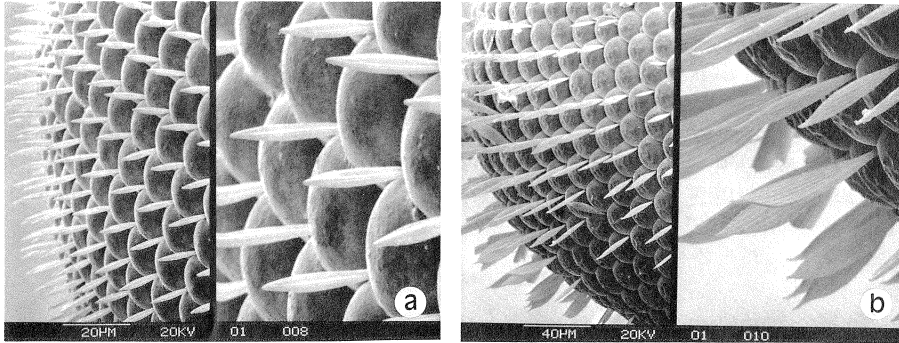


Fig. 2. Scanning electron micrographs of male *Drosophila* (*Hirtodrosophila*) species eye setulae: a. *Drosophila* (*H.*) sp. from Guyana, near *D. (H.) thoracis*. b. *D. (H.) chandleri*. Magnified view for each specimen taken of setulae at apex of eye. Note that magnification for *D. chandleri* is one-half that of specimen in Fig. 2a.

present on neck of spermathecal duct near opening to introvert. Oviscape short and broad in lateral view, with 17 ovisensilla pegs: 8 short ones on ventral margin anterior to sensilla hair, 5 equally short and longer ones posterior to sensilla hair, and 4 long ones near dorsal surface.

Epandrium and cercus, dark brown, each with well-developed ventral lobe. Surstylus about as large as ventral epandrial lobe, with 2 types of prenisetae separated into 2 fields: a dorsal row of 5–6 short, stout ones and 4 long, thin ones ventrally. Lateral margins of hypandrium deeply indented, anterior margin less so. Paraphysis small, with 3 minute setulae. Aedeagal apodeme extended to anterior margin of hypandrium. Distiphallus with 4 lobes and each bearing minute scales on apical half.

*Measurements.* Holotype male: Head Width (HW) = 1.09 mm, Thorax Length (THL) = 0.88. Paratype male: HW = 1.33, THL = 0.88. Paratype female: HW = 1.04, THL = 0.98.

*Holotype.* Male: Sri Lanka: Labugama, 18/II/74, P. J. Chandler "Forest," (not dissected) in the American Museum of Natural History.

*Paratypes.* One male, one female (terminalia of each dissected), collected at same time and locality as holotype (also in AMNH).

*Etymology.* Patronym, named for the collector, Mr. Peter J. Chandler of Weston Research Laboratories, Maidenhead, Berks, England.

*Discussion.* The features of *D. chandleri* that show it has a close relationship with *D. caputudis* are the following: the manner in which the male head is broadened, and the extent of the modification; proclinate orbital seta considerably medial to the

←

Fig. 1. *Drosophila (H.) chandleri*: a. Male head. b. Female head. c. Lateral view of male thorax (wing is removed). d. Spermatheca. e. Lateral view of oviscape. f. Ventral view of male terminalia. aa, aedeagal apodeme; ce, cercus; ep, epandrium; hy, hypandrium; ps, prenisetae; py, paraphysis; vl, ventral lobe (of epandrium). g. Detail of distiphallus, showing lobes and scalation.

anterior reclinate and at about the same level; posterior reclinates very long; notum dark, both species with at least a portion of the pleura near the wing darkened; oviscape with ovisensilla pegs at dorsal margin much longer than the ones on the ventral margin; in the male, the ventral epandrial lobe is well-developed, 2 types of prensisetae exist (a row of short, stout ones, and some long, narrow ones at the surstylar apex), distiphallus has 4 lobes and bears minute scales. Scaliform eye setulae are autapomorphic for the Drosophilidae. To my knowledge, this trait occurs only in *Diopsosoma* (Periscelididae), another (albeit unrelated) broad-headed fly.

#### ACKNOWLEDGMENTS

To Mr. Peter Chandler who collected the interesting new species and made the specimens available for my study, I am grateful. Andrew Simon helped with the scanning electron microscopy.

#### LITERATURE CITED

Grimaldi, D. 1986. A new *Drosophila* (*Hirtodrosophila*) from Malaysia with broad-headed males (Diptera: Drosophilidae). J. New York Entomol. Soc. 94(3):372-376.

Received November 6, 1987; accepted January 25, 1988.