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Description of a New Species of the Genus *Gaurax* LOEW (Diptera, Chloropidae) from Hawaii

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Abstract A second Hawaiian species of the genus *Gaurax* LOEW, *G. perreirai* sp. nov. is described and illustrated. The species was reared from a rotting stem of banana in Oahu Island, Hawaii.

Key words: *Gaurax*; Chloropidae; Diptera; new species; Hawaii.

Introduction

Members of the genus *Gaurax* LOEW have been recorded from all faunal regions and are especially highly differentiated in the Australasian region with about 80 described species (SABROSKY, 1985 in unpublished list; SABROSKY, 1989). Around 20 species have also been recorded from the Palaearctic, Oriental and Nearctic regions respectively, while very few have been recorded from the tropical regions. In the Hawaiian Islands, only one species, *bicoloripes* (MALLOCH), an immigrant from the Marquesas, has been recorded (HARDY, 1952, 1980). The larval food habits of the genus are varied, predaceous, coprophagous or saprophagous, and the adults are often found in the deep forest.

In 1990, I had the opportunity to examine Hawaiian specimens of the genus in the collection of the Hawaiian Evolutionary Biology Program, University of Hawaii at Manoa. The specimens had been reared from a rotting stem of banana, and they were determined to be a new species, the second species of the genus from the Hawaiian Islands.

The holotype of the new species described below is deposited in the collection of the Bishop Museum in Honolulu, Hawaii.

Gaurax perreirai sp. nov.

(Figs. 1–5)

Male & female. Head about 1.8× as wide as long, in profile slightly higher than long; frons as long as wide and entirely brownish-yellow, but in teneral specimens much longer than wide and pale orange-yellow, the sides distinctly narrowing anteriorly; surface of frons finely pollinose and clothed with pale hairs; frontal triangle rather small, the width at vertex 1/2 as wide as frons, entirely polished blackish-brown, with anterior apex slightly extending beyond middle of frons; gena

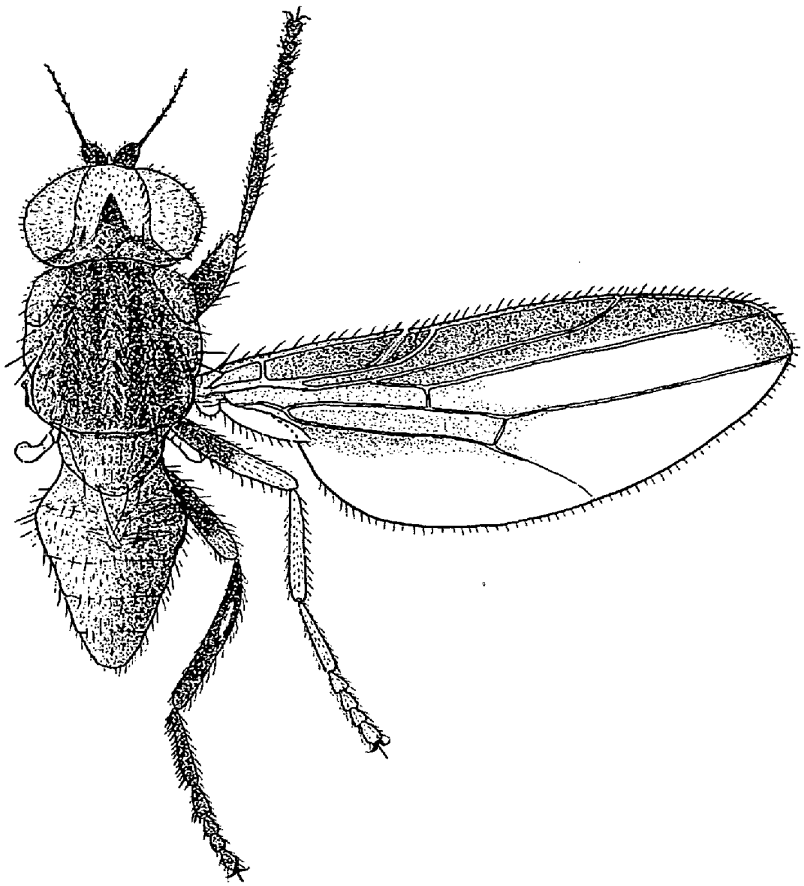
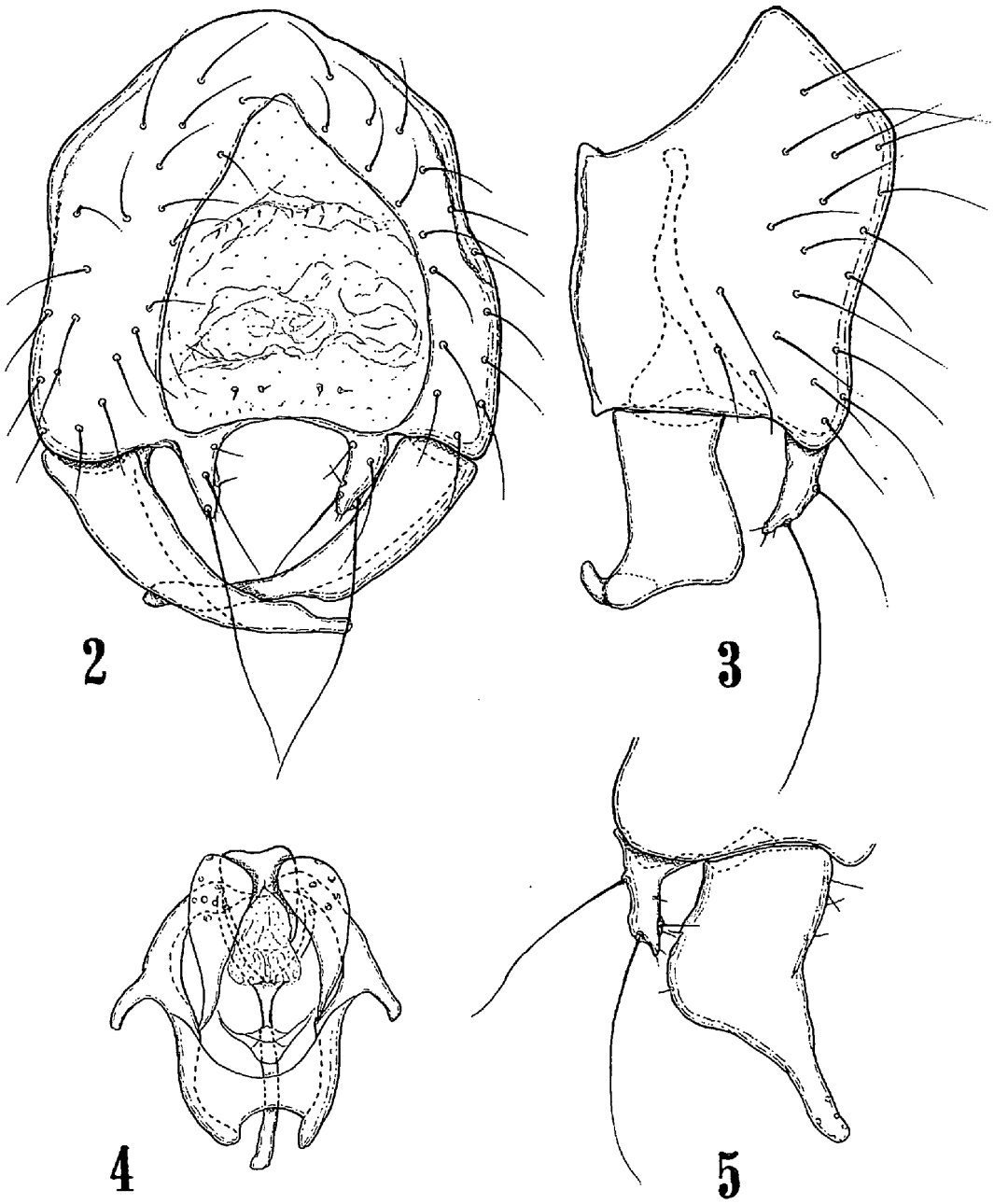


Fig. 1. *Gaurax perreirai* sp. nov. (♂), whole body in dorsal view.

very narrow, less than 1/4 breadth of 3rd antennal segment, pale-yellow with thick silvery-white pollinosity; postgena and occiput brown, glossy and very thinly pollinose; eye densely pubescent. Antenna with 2nd and 3rd segments entirely blackish-brown, the latter reniform, about 1.8–2× as broad as long; arista filiform, standing subapically on the 3rd antennal segment, entirely black and very minutely pilose (except for basal 1/3 bare); palpus medium in size, upcurved, entirely brown. Cephalic setae pale yellow, or *pvt* sometimes black; *vti* hairlike, *vte* strong, much longer than cruciate *pvt*.

Mesonotum almost entirely glossy black in ground color except for brownish areas on humeral, notopleural and postalar regions; in macerate or teneral conditions mesonotal dorsum brownish yellow in ground color with 4 black longitudinal stripes, of which the median two interrupted at notopleural suture; sufrace of mesonotum smooth except for thickly pollinose notopleural region, clothed with moderately long silvery-white hairs on very fine punctures, those hairs usually subdecumbent, divergent at acrostical lines, and convergent at dorsocentral lines, so that the hairs making ridges dorso-centrally; thoracic pleura glossy reddish-brown in ground color with dark maculae on meso-, ptero-, hypo- and sternopleuron; 1+2 *npl*, of



Figs. 2–5. *G. perreirai* sp. nov. (♂). —— 2, Epandrium and surstylus in dorsal view; 3, ditto in lateral view; 4, hypandrium and phallic organs in ventral view; 5, right surstylus outerside in lateral view.

which the anterior one fine and pale, the posterior two black and strong. Scutellum semicircular, about 1.3–1.4× as wide as long, entirely black, mostly glossy and finely pollinose baso-medially; disc of scutellum somewhat flattened and clothed with long silvery-white hairs; 2 pairs of scutellar setae black, the *ap sc* convergent,

slightly longer than length of scutellum; distance between bases of both *ap sc* shorter than those between *ap sc* and *sap sc*; mesophragma entirely glossy black and smooth.

Wing about 2.6–2.8× as long as wide, hyaline with a continuous fuscous mark along costal margin ranging from costal cell, entire subcostal cell, entire marginal cell, and almost entire submarginal cell (except for linearly hyaline area along posterior subcentral part of vein R_{4+5}) to around distal 1/5 of 1st posterior cell; discal cell also fuscous weakly except for anterior margin which is linearly hyaline, and faintly fuscous along posterior and distal margin of discal cell, while in teneral specimens the cell only very faintly infuscated; wing veins all dark brown, R_1 distinctly forecurved at distal 1/3; R_{4+5} and M_1 nearly straight and parallel-sided; *r–m* at nearly distal 3/5 of discal cell; relative lengths of costal sectors 2nd: 3rd: 4th as 10: 7: 3.

Fore leg mostly dark brown except for distal 1/3 of femur yellow; mid leg mostly yellow except for coxa and basal 1/2 of femur brown; hind leg dark-brown to black except for distal 1/4 of femur brown.

Abdominal tergites entirely blackish brown, gray pollinose with gray-white hairs.

Male genitalia: Epandrium with a large reverse V-shaped distal opening, 2 pairs of sensory setae present below anus; cerci elongate-conical with 2 especially long setae; surstylus basally broadened, distally cruciate, distinctly narrowed and incurved antero-distally; only postgonite present as a lobe; hypandrium closed apically with a latero-distal process.

Length: Body (mesonotum+scutellum in dorsal) 0.90–1.0 mm (♂♂), 0.98–1.1 mm (♀♀); wing 2.1–2.4 mm (♂♂), 2.3–2.5 mm (♀♀).

Holotype: ♂, Makiki Stream (300 ft.), Oahu I., Hawaii Is., 2.ii.1991, W. D. PERREIRA coll., reared from a rotting banana stem.

Paratypes: Same data as holotype (3 ♂♂ 3 ♀♀). Same locality as holotype (1 ♀, 21.iv.1990, W. D. PERREIRA coll., reared from a rotting banana stem). Makiki Stream (350 ft.), Oahu Is. (1 ♀, 27.i.1991, W. D. PERREIRA coll.). Makiki Stream (320 ft.), Oahu Is. (1 ♀, 29.i.1991, W. D. PERREIRA coll.).

Distribution. Oahu I. in the Hawaiian Is.

Remarks. The present new species differs from the other known Hawaiian species, *G. bicoloripes* (MALLOCH), by the wing with a long fuscous macula along costal margin, veins R_{2+3} and R_{4+5} narrowly approximated basally, veins R_{4+5} and M_{1+2} not divergent, as well as different features of the male genitalia. In the small-sized frontal triangle, the filiform arista with short and sparse pubescence in addition to such a maculation in the wing, the new species is very similar to the Oriental species, *pallidior* BECKER and *vittipennis* (THOMSON) from Java and the Philippines, *nigricornis* BECKER from Java, and *sumatranus* (DUDA) from Sumatra. The new species may be easily separated from *pallidior* and *vittipennis* by their antennal segments entirely yellow and the legs predominantly yellow except for infuscated hind tibiae. The new species is most similar to *nigricornis* and *sumatranus* in the black-

ened 3rd antennal segment, but is easily separated from the former by the wing with veins R_{4+5} and M_{1+2} distinctly divergent, costal band not overspreading into submarginal cell, and no additional fuscous macula along discal cell in *nigricornis*, and from the latter by the mesonotum entirely blackened, with R_1 and R_{2+3} not closely approximated, the costal bands only slightly overspreading into submarginal cell, and no fuscous area along discal cell in *sumatranus*.

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References

HARDY, D. E., 1952. Flies collected in bait traps. *Proc. Hawaii. ent. Soc.*, **14**: 407–409.

——— 1980. Family Chloropidae. *In* HARDY, D. E., & M. D. DELFINADO (eds.), *Insects of Hawaii*, **13**: 406–431. The University Press of Hawaii, Honolulu.

SABROSKY, C. W., 1989. Family Chloropidae. *In* EVENHUIS, N. E., (ed.), *Catalog of the Diptera of the Australasian and Oceanian Regions*, pp. 650–665. Bishop Mus. Spec. Publ., No. 86.

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