

A NEW SPECIES OF *DALLA* FROM GUATEMALA (LEPIDOPTERA: HESPERIIDAE)

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ABSTRACT.- A new species of *Dalla* is described from a single male specimen from Olas de Moka, Solohi, Guatemala. *Dalla freemani* n. sp., is closely related to *D. bubobon* and *D. steinhauseri*, to which it is compared using wing and genitalic characters.

RESUMEN.- Se describe una especie nueva de *Dalla* con un solo macho de Olas de Mola, Solohi, Guatemala. Esta especie nueva, *Dalla freemani* sp. D., es muy similar a *D. bubobon* y *D. steinhauseri*, con las cuales se compara, usando caracteres de las alas y los genitales.

KEY WORDS: Central America, *Dalla freemani* n. sp., Heteropterinae, Mesoamerica, Mexico, Michoacan, Neotropical, Solohi, taxonomy.

While searching for specimens of *Dalla bubobon* (Dyar, 1921) for a report on the rediscovery of that species in Michoacan, Mexico (Warren and Gonzalez-Cota, 1996), an unusual *Dalla* specimen (Fig. 1-2) was found in the skipper collection of the American Museum of Natural History, New York City. The specimen was tentatively determined as *D. bubobon*, but was in its own unit tray, separate from Mexican specimens. Genitalic examination of the specimen confirmed that it actually represents an undescribed species, closely related to *D. bubobon* and *D. steinhauseri* Freeman, 1991.

Unfortunately, the only known specimen of this species is very old, and in very poor condition. Its label states that the specimen was collected in 1808, but since no entomological activity has been recorded from western Guatemala at that time, it was most likely collected in 1908. The head, abdomen, and at least 3 of the wings have been broken, and glued back into position with transparent glue. As a result, the head and abdomen are mostly not scaled, and the right hindwing has a dark glue stain (most prominent in ventral view) in the tornal area. Additionally, the distal end of the aedeagus is broken off and is missing.

Perhaps it is because of the reconstructed nature of the specimen, combined with apparently inaccurate locality data (year of capture), that the specimen has never been described. However, with the description of *Dalla steinhauseri* Freeman (1991), and with the genitalia diagrams by Freeman of *D. steinhauseri*, and by Warren and Gonzalez-Cota (1996) of *D. bubobon*, it is clear that the body parts glued together on this specimen are indeed its own, and the locality data on its label is probably correct (see below under Distribution).

Dalla freemani A. D. Warren, n. sp.

Diagnosis.- *Dalla freemani* can easily be distinguished from the two most similar species of *Dalla*, *D. bubobon* and *D. steinhauseri*, without genitalic dissection. This species has three yellowish spots on the dorsal surface of the hindwing (two submarginal, one basal), while *D. steinhauseri* has two spots (both submarginal), and *D. bubobon* has five spots (four submarginal, one basal).



Fig. 1-2. *Dalla freemani*: 1) male holotype, dorsal surface; 2) ventral surface, from Olas de Moka, Solohi, Guatemala, 3000ft, Sept. [1908], G. P. Englehardt (AMNH) (line = 1.0mm).

Description.- MALE. Forewing length (from base to apex): 12.7mm. *Upperside:* Ground color dark chocolate brown with very sparse yellowish overscaling on basal half of wing, and along inner margin. Pale ochreous semi-hyaline spots as follows: three small, conjoined apical spots in a straight line in R3-R4 to R5-M1; a fairly rounded discal cell spot, offset basally from end of cell by a distance roughly equal to the width of the spot; a very small circular spot in M3-CuA 1 centered

below the most distal apical spot; a triangular spot, the same size as the discal cell spot in CuA 1-CuA2, centered between the origin of CuA2 and outer margin; a smaller spot in basal part of CuA1-CuA2 (but not extending to origin of CuA2), and a very orange spot in the upper part of CuA2-2A directly below spot in CuA1-CuA2. Wing fringe very dark brown. Hindwing ground color same as dorsal forewing, except along costa to Sc+RI, which is yellow. Two submarginal spots; one large, squared spot in MI-M3, one smaller, oval spot in CuA1-CuA2 near origin of CuA2. Prominent discal spot basal of large submarginal spot. Wing fringe dark brown, with intermixed yellow scales, mostly yellow along Sc+RI-Rs. *Underside*. Forewing ground color dark brown, overscaled by light brown scales along costa and margin, expanding basally along wing veins, and light yellow along inner margin almost to toms. All spots from dorsal surface repeated; edges of all spots much less distinct than on dorsal surface, often expanded into adjacent cells, giving them a smeared appearance. Median spot in CuA2-2A lighter yellow than any other spot. Wing margin highlighted with yellow in every cell from apex to CuA2, especially prominent in M2-M3. Wing fringe intermixed with light and very dark brown scales. Hindwing ground color medium brown, but extensively overscaled by light brown, and yellow scales. Dark brown scales distributed along wing margin, and along all wing veins to their origins. Yellow overscaling concentrated along margin and wing veins, but also very dense in basal part of wing. Cell 2A-3A, all of toms, and inner margin to 3A tan in color, overscaled with yellow. All three spots from dorsal surface repeated, only the basal discal spot noticeably larger than on dorsal surface. Yellow submarginal spots from dorsal surface joined by additional spots in RsMI (circular) and CuA2-2A (triangular) to form a straight band pointed at hindwing apex. Two extra marginal spots present in Rs+MI-M2, and Sc+RI-Rs+M I, extending to costa. Extreme margin of wing highlighted with yellow in each cell, especially prominent in Sc+RI-Rs. Extreme basal portion of costa also with prominent yellow scales. Wing fringe brown, intermixed with light brown and yellow scales throughout, especially at vein ends; fringe lightest along Sc+RI-Rs. Head mostly descaled. First two pal pal segments broad, third segment longer and narrower. Palpi clothed in short, black, spatulate scales dorsally, and in short, white, spatulate, and long, black scales laterally and ventrally. Antennae dark brown, each segment ringed basally with orange (most prominent on ventral surface). Apiculus orange, most prominent ventrally. Tip of apiculus broken on both antennae, so no nudum count possible. Dorsal thorax and tegulae covered with long, skinny, gray and black scales. Ventrally, thorax lightly covered in long, whitish scales. Dorsal abdomen clothed in dark brown scales, with lighter brown and yellowish scales ventrally. Legs entirely orange. Epiphysis present on prothoracic tibiae. One pair of spurs present on mesothoracic tibiae, two pair present on metathoracic tibiae. Four to six longitudinal rows of short spines present on all legs below tibiae to terminal claw.

Genitalia (Fig. 3A-E): Tegumen fairly long; uncus fairly long, somewhat slender, with arms fused the entire length; junction of uncus and tegumen bearing a prominent, fairly dense hair tuft (removed in Fig. 3D). Bifurcate gnathos with arms fused their entire length, becoming very narrow at distal end, which is prominently folded upward. Gnathos extending almost as far distad as uncus. Vinculum fairly broad, saccus quite long (Fig. 3E). Valvae (Fig. 3B) symmetrical, noticeably broader at distal end than at basal end; ampulla very broad, overlapping entire proximal edge of narrow harpe, which is sparsely toothed at its distal end. Aedeagus apparently very long, but broken distad of juxta, which is very broad (Fig. 3C), and well sclerotized.

Type.- Only the holotype male (Fig. 1-2) is known. It has the following labels: yellowed (printed) - Olas de Moka, Dept. Solola / Guatemala 3000 Sep 1808 [1908?]; yellowed (printed) - Ex. Col. / Geo. P. Engelhardt; white (printed and handprinted) - Genitalia Vial / # 96-2 I Andrew D. Warren; red (printed and handprinted) — HOLOTYPE / *Dalla freemani* / A. D. Warren. The holotype is in the AMNH.

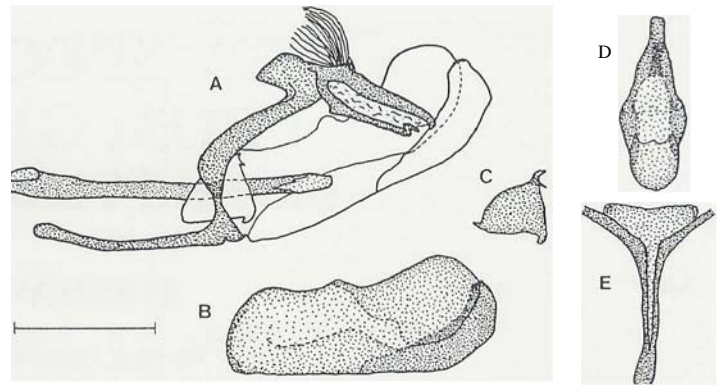


Fig. 3. *Dalla freemani* male genitalia (A. D. Warren genitalia vial # 96-2): A) Lateral view of complete genitalia (minus left valve); B) lateral view of left valve; C) lateral view of juxta; D) dorsal view of tegumen and uncus (hair tuft removed); E) ventral view of saccus.

Etymology.- I am very pleased to name this species in honor of my good friend, Hugh A very Freeman, who has been a continuous source of help, encouragement, and inspiration in my studies on Neotropical skippers over the past eight years.

Distribution.- Since only the holotype from Olas de Moka is known, it is impossible to speculate on what the total distribution of this species may be. This species should be searched for at moderate to high elevations in all of western Guatemala, and the Sierra Madre de Chiapas, in Mexico. There is no reason to question the locality data on the label of the holotype, except for the year of capture. The "3000" that appears before the abbreviation for September on the label almost certainly refers to an elevation of 3000 ft (909m). Both *D. bubobon* and *D. steinhauseri* are montane species, occurring in very localized distributions, at moderate to high elevations. The butterfly fauna of the region of Guatemala where the holotype was collected is very poorly known, and this new species should turn up with future field work at moderate and high elevations in the area. As stated by Freeman (1991), *Dalla* species are usually found along rocky creeks, with scrub-like vegetation; males are very frequently found at mud.

Remarks.- This new species of *Dalla* appears to be somewhat intermediate between *D. bubobon* and *D. steinhauseri*. *Dalla freemani* shares many wing characters with *D. bubobon*, including 1) having a "double" median spot in Cul-Cu2 and Cu2-2A on the forewing, 2) a yellowish spot on the dorsal hindwing discal cell, 3) extended and "smeared" borders on almost all yellowish spots on the ventral forewing, 4) yellowish spotting on the ventral forewing margin, from apex to Cu2, and 5) an orange-brown to light brown ground color to the ventral hindwings. *Dalla freemani* shares other wing characters with *D. steinhauseri*, including 1) the lack of a triangular submarginal spot in Cu2-2A below the large submarginal spot in Cul-Cu2 (as in *D. bubobon*), 2) having only two submarginal spots on the dorsal hindwing, 3) having a triangular spot on the ventral hindwing in Rs-MI, and 4) in having three yellow costal streaks on the ventral hindwings (one basal, one about mid-costa, and the other at the apex).

Genitally, *D. freemani* shares some characters with *D. bubobon*. Both *D. freemani* and *D. bubobon* have a long gnathos (Fig. 3A), and the vinculum of both species is strongly bent

caudad (it is fairly straight in *D. steinhauseri*, according to the illustration in the original description). *Dalla freemani* seems to share more genitalic characters with *D. steinhauseri* than with *D. bubobon*. *Dalla steinhauseri* and *D. freemani* both have the distal end of the gnathos strongly folded upward (although a greater portion of the gnathos is bent upward in *D. steinhauseri*), both have a broad juxta (Fig. 3C), both have a long saccus (Fig. 3E), and both have a very narrow uncus, gnathos and tegumen in dorsal view (Fig. 3D). On the valvae, the ampulla broadly overlaps the harpe in lateral view (Fig. 3B) in both *D. freemani* and *D. steinhauseri*, while in *D. bubobon*, the ampulla only overlaps the harpe at its basal origin. A cladistic analysis would be useful to form a hypothesis about the relationship between these three apparently closely related species, but such an analysis must wait until the unknown females of all three species are discovered.

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