

# REDISCOVERY OF *DALLA BUBOBON* IN MICHOACÁN, MEXICO (LEPIDOPTERA: HESPERIIDAE: HETEROPTERINAE)

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**ABSTRACT.**— Four males of *Dalla bubobon* (Dyar, 1921), were collected at Los Chorros del Varal, Los Reyes, Michoacán, Mexico, in July, 1990. Only three other, very old specimens of *D. bubobon* were previously known in collections. A short description of *bubobon* is provided, including illustrations of adults and the male genitalia. *Dalla bubobon* is compared to similar species of *Piruna* and *Dalla* that occur in western and southern Mexico, primarily using genitalic characters.

**RESUMEN.**— Se colectaron cuatro machos de *Dalla bubobon* (Dyar, 1921), en Los Chorros del Varal, Los Reyes, Michoacán, México, en julio, 1990; solo se conocían tres ejemplares antiguos de *D. bubobon* en colecciones. Se presenta una descripción corta de *bubobon*, con ilustraciones de los adultos y los genitales masculinos. Se compara *D. bubobon* con especies muy similares de *Piruna* y *Dalla* del occidente y sur de México, usando la estructura de los genitales principalmente.

**KEYWORDS:** *Amblyscirtes*, *Dalla*, *Dardarina*, distribution, Mesoamerica, Neotropical, *Piruna*, *Quasimellana*, taxonomy, *Windia*.

*Dalla bubobon* (Dyar, 1921) was described from a single male specimen (Fig. 1-2), collected in Guerrero, Mexico, in July, 1920. The specimen is now housed in the United States National Museum, Smithsonian Institution, Washington, DC (USNM). Freeman (1991) reported one male specimen in the Carnegie Museum of Natural History, Pittsburgh, PA (CMNH), labeled from southern Mexico, collected by Townsend; John Rawlins (pers. comm.) informed us that this specimen is from the Holland collection. There is one additional male specimen, labeled from "Guerrero VII," collected by Hoffmann, in the American Museum of Natural History, New York, NY (AMNH). All three known specimens of *D. bubobon* are apparently very old, and none are labeled with any specific locality information. Despite subsequent field work in Guerrero by several Mexican lepidopterists, no additional specimens of this strikingly patterned species have been found there.

Since 1989, the junior author has been collecting butterflies in west-central Michoacán, Mexico. Data from all of these specimens will be presented in a future paper on the butterflies of Michoacán, similar to the work recently published by Vargas *et al.* (1996), on the butterflies of Jalisco, Mexico.

Among available skipper specimens from Michoacán were four male *Dalla bubobon*. All four of these specimens are in fresh condition, and were collected at Los Chorros del Varal, Los Reyes, Michoacán, on 21 July 1990. Dorsal and ventral views of one or the four male specimens are shown in Fig. 3-4. Despite repeated collecting trips to Los Chorros del Varal since that date, no additional specimens have been found. The female remains unknown. The specimens will be distributed among the authors' collections, the Museo de Zoología, Facultad de Ciencias, Universidad Nacional Autónoma de México, in Mexico City, and the American Museum of Natural History, in New York City.

Several other very poorly known species of skippers have been found by the junior author at Los Chorros del Varal, including *Windia windi* Freeman, *Dardarina dardaris* (Hewitson), *Dalla faula* (Godman), *Quasimellana mulleri* (Bell), *Amblyscirtes elissa* Godman, and *Amblyscirtes raphaeli* Freeman, none of which have previously been reported from Michoacán. Los Chorros del Varal is located in Municipio Los Reyes de Salgado, in northwest Michoacán. The site where collecting was done is less than 5 km from the border with Jalisco.

Like many species now placed in *Dalla* Mabille, 1904 (= *Eumesia* Felder & Felder, 1867), and *Piruna* Evans, 1955, *D. bubobon* was first assigned by Dyar to *Butleria* Kirby, 1871. Although Dyar's (1921) original description of *D. bubobon* is sufficient for the identification of the species, he did not describe anything other than the wing pattern, did not provide an illustration of the specimen, and made no mention of the genitalia. Rather than produce a verbose re-description of the wing pattern of *D. bubobon*'s, the following figures (1-4) of *D. bubobon* have been provided.

## DIAGNOSTIC NOTES, *DALLA BUBOBON*

Dorsally, the palpi are mostly black, with a few orange scales. Ventrally, they are yellowish white, with a few black scales. The base of the palpi are surrounded with a row of long black scales that extend almost to the distal tip of each palpus. The antennae are strongly checkered orange and black, with the club being mostly black dorsally, mostly orange ventrally. The antennal nudum is 12 segments on each of the four Michoacán specimens. Dorsally, the head is clothed in short black or white spatulate scales, and long, slender black or yellowish scales, with a row of white scales around the eyes. Ventrally, the head is covered with spatulate scales that are black basally, white at the ends. The thorax and abdomen are mostly black dorsally, with scattered longer yellowish scales. Ventrally the thorax and abdomen are mostly orange

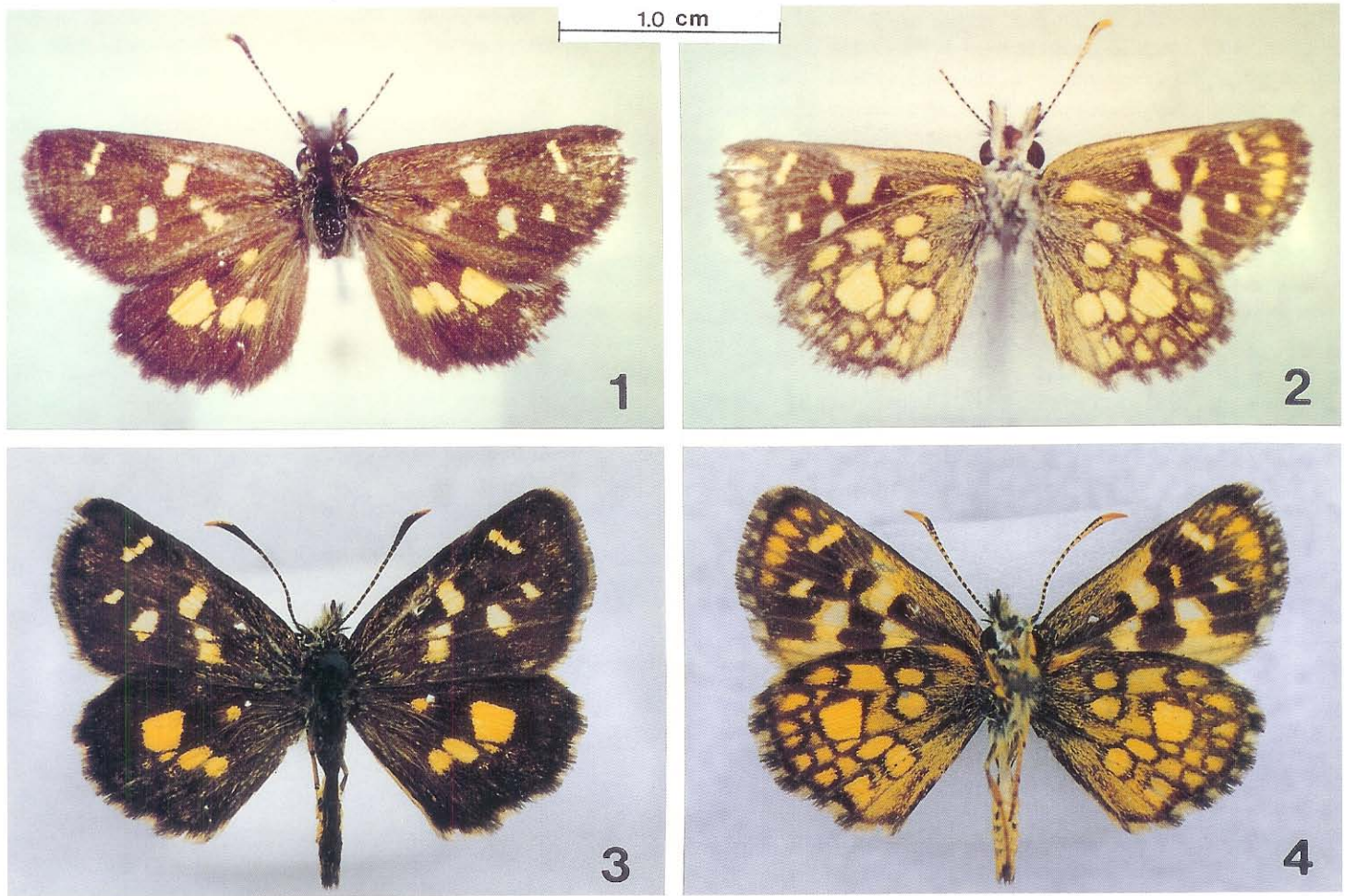


Fig. 1-4. 1) *Dalla bubobon*, holotype ♂, dorsal surface; 2) ventral surface, from Guerrero, México, VII-1920, Müller Collection (USNM); 3) *Dalla bubobon* ♂, dorsal surface; 4) ventral surface, from Los Chorros del Varal, Los Reyes, Michoacán, México, 21-VII-1990, Lamberto González-Cota.

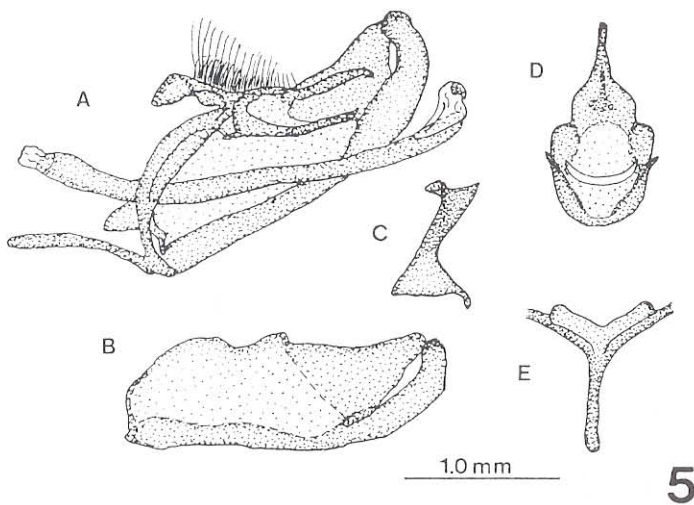


Fig. 5, male genitalia of *Dalla bubobon*, from Michoacán, México; A. D. Warren genitalia vial # 95-79. A) lateral view of complete genitalia (minus left valve); B) lateral view of left valve; C) lateral view of juxta and transtilla; D) dorsal view of tegumen and uncus (hair tuft removed); E) ventral view of saccus.

and whitish, with a few scattered brown and black scales. The legs are mostly orange, but are black at every joint. The femur is about half

black, basally. There is one pair of spurs on the mesothoracic tibiae, and two pair of spurs on the metathoracic tibiae. Four to six longitudinal rows of spines are present on all the legs below the tibiae to the terminal claw. The "small central flap" mentioned by Evans (1955) as being on the foretibiae of *bubobon* could not be found on any of the four Michoacán specimens, and was not mentioned by Dyar in the original description of *bubobon*. The average right forewing length of the four specimens from Michoacán, from base to apex, is 1.30cm, with extremes of 1.23 and 1.34cm.

*Male genitalia* (Fig. 5): Tegumen short, broad, dorsally hollowed; uncus fairly long, slender and bifurcate, with arms fused the entire length, becoming very narrow caudad; uncus extends cephalad, fitted into the hollowed-out tegumen bearing a prominent, and fairly dense hair tuft (removed in Fig. 5D); bifurcate gnathos with arms fused the entire length, becoming very narrow at its caudal end; gnathos extends almost as far caudad as the uncus (Fig. 5A). Valvae symmetrical, long, narrow; harpe narrow, curving dorsad until it overlaps very narrowly with the end of the ampulla, offset inward; the terminal portion of the harpe is very heavily sclerotized, with very small spines; ampulla fairly narrow overall; cephalad portion of ampulla broad, becoming gradually narrower caudad, until the rounded caudal end overlaps with the terminal portion of the harpe. Aedeagus very long and slender, with a single, small, heavily sclerotized cornutus; no phallobase. Juxta and transtilla well sclerotized. Saccus is short, slender, and slightly bent dorsally (Fig. 5A,E).

**REMARKS**

The *Piruna* species that most closely resemble *bubobon* are the southern and western Mexican species *P. jonka* and especially *P. millerorum*, both described by Steinhauser (1991). The ventral maculation of both of these species is very similar to that of *D. bubobon*, as well illustrated by Steinhauser (1991). The genitalia of these two species, however, are quite different from the genitalia of *bubobon*. These two *Piruna* species both have an unfused bifurcate uncus and gnathos, especially bifurcate in *P. millerorum*, while *D. bubobon* has a very slender, bifurcate uncus with the arms fused the entire length, so that the uncus actually appears to be only one caudally projecting structure. *Dalla bubobon* also has a similarly fused bifurcate gnathos (Fig. 5A,D), typical of many *Dalla* species.

Steinhauser (1991) provided a genitalic characterization of the *ligilla* group of *Dalla*, which contains two species in western Mexico that are fairly similar to *D. bubobon*: *D. ligilla* (Hewitson) and *D. dividuum* (Dyar). Both of these species have a long, slender, bifurcate uncus with the arms fused for nearly the entire length, and tapered at the ends. *Dalla bubobon* has a similar uncus, but it is much narrower caudad than in *D. ligilla* or *D. dividuum*. These two species also have a short gnathos and a long saccus, while *D. bubobon* has a fairly long gnathos, and a comparatively short saccus. *Dalla steinhauseri* Freeman, 1991, known only from three specimens from Oaxaca, Mexico, is apparently the species most closely related to *D. bubobon*, as stated by Freeman (1991). While the overall ventral coloration of *D. steinhauseri* is much darker than *bubobon*, it apparently shares more elements of *D. bubobon*'s wing pattern than any other species. The genitalia also have several similarities. Both *D. steinhauseri* and *D. bubobon* have a long, slender, completely fused uncus and a fused gnathos. The gnathos in *D. bubobon* is longer than in *D. steinhauseri*, however. The valvae are also similarly shaped, with the ampulla slightly overlapping the harpe (harpe offset inward), although the ampulla overlaps the harpe much less extensively in *D. bubobon* (Fig. 5A,B), than in *D. steinhauseri*. There are also important differences in the genitalia of these two species, seen in the tegumen (Fig. 5A,D), juxta and transtilla (Fig. 5C), and saccus (Fig. 5E). The tegumen of *D. steinhauseri* is much better developed laterally than in *D. bubobon*. The shapes of the juxta and transtilla are different in the two species, and the saccus is longer in *D. steinhauseri* than it is in *D. bubobon*.

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