A new species of *Boettcheria* from Guatemala (Diptera: Sarcophagidae)

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Abstract: *Boettcheria styx* new species is described from Guatemala, and a key is provided to separate it from *B. maerens* (Townsend). A list is given of Central American species of *Boettcheria* with references to figures of their genitalia.

Key words: Diptera, Sarcophagidae, *Boettcheria*, systematics

Introduction

Extensive sorting of Sarcophagidae (by TP) in the United States National Museum of Natural History revealed a specimen of a male *Boettcheria* closely resembling *B. maerens* (Townsend) in external morphology, but with distinctly different genitalia. This specimen we describe here as *Boettcheria styx*. By their dark, blackish appearance, heavy hairiness, and narrow yet conspicuous silvery bands of abdominal pruinosity, *B. maerens* and *B. styx* share a rather distinct gross morphology with features unique for the genus. This is here considered justification for the isolated description of *B. styx*, leaving the remaining Neotropical species of *Boettcheria* in need of a thorough taxonomic revision.

The terminology follows that of McAlpine *et al.* (1981) for general morphology and Roback (1954) for the aedeagus.

Boettcheria styx Pape and Dahlem, new species

(Figs. 1-2)

Etymology: The species epithet is a noun in apposition, from the river *Styx* bordering the Underworld of ancient Greek mythology. The name relates to the sombre blackish appearance, coupled with streaks and patches of almost sparkling silvery pruinosity.

Type: Holotype male, Guatemala: Sacatepequez, forest above La Cumbre de Calderas radio tower site, W of San Miguel Duenas, 2 km W San Juan Calderas, 23.X.1990, A. L. Norrbom. [The site is in Sacatepequez Department, 15-20 km WSW of Antigua, Guatemala, not far from the border with Chimaltenango Department. It is on the lower slopes of Volcan de Fuego (personal correspondance with A. Norrbom).] The holotype is deposited in the United States National Museum of Natural History. Holotype in excellent condition and with genitalia clearly spread. [The figures were done from the genitalia *in situ*, with no dissection nor clearing.]

Description: Male. Total length 17 mm. Fronto-orbital plate, parafacial, anterior margin of gena, and face golden pruinose. Occiput, most of gena, and postgena grey pruinose. Ocellar triangle with 8 long, thin setae and additional shorter, thin setae. Inner vertical seta large and slightly reclinate. Postocellar setae long, thin, parallel, and proclinate. Paravertical setae long, thin, and convergent, crossing at apex. Outer vertical seta absent, but 4 distinctly longer postocular setae present at start of row above each eye. Rows of frontal setae strongly divergent at level of pedicel, with 12 frontal setae above the level of the pedicel and 2 rows of 5-6 setae below the level of the pedicel. Fronto-orbital plate with a scattering of short, thin setae. Parafacial with scattering of short, thin setae and a row of 5-6 longer setae ventrally. Vibrissae strong and convergent, crossing at approximately 3/4 of their length. A cluster of strong subvibrissal setae present. Gena and postgena with numerous, thin, black setae.

Scutum dull black, without distinct vittae, but with golden pruinose areas along anterior margin. Scutum with 4 evenly spaced whitish pruinose spots along transverse suture and 2 whitish pruinose spots adjacent to scutoscutellar suture and postalar callus. Scutellum with an apical whitish pruinose spot. Postpronotal lobe golden pruinose. Notopleuron golden pruinose dorsally and grayish pruinose ventrally. Golden pruinosity continues down supra-alar area. Chaetotaxy: acrostichals = 3 (weak) + 1 (prescutellar, barely differentiated); dorsocentrals = 4 (anterior 2 weak) + 3; intra-alars = 2 (posterior 1 weak) + 2; supra-alars = 2 (anterior less than 1/2 size of posterior) + 4 (second much weaker than other 3); postalars = 2. Scutellum with 4 subapical scutellars (anteriormost seta much weaker than other 3) and with strong discal scutellars and basal scutellars. Apical scutellars not differentiated. Katepisternum with 3-4 strong dorsal setae. Postalar wall without setae.

Wings with brownish infuscations present along vein CuA_2 and crossveins h, r-m, and bm-cu. Costa with irregular ventral row of setae extending just past R_1. Long set of setae of lower calyptral fringe extending to posterolateral corner. Upper and lower calypteres with a dark grey border.

Legs with abundance of long black setae. Mesotrochanter with a dense pad of short, stubby anteroventral setae. Metafemur with dense, long ventral setae. Metatibia bent ventrally near midpoint and with dense, long ventral setae.

Abdominal terga 1+2 - 4 without median marginals, tergite 5 with row of marginal setae. Tergite 3 with irregular anterior band of silver pruinosity, approximately 1/5-1/4 width of tergite, extending to ventral surface and absent for a short span at dorsal midpoint. Tergite 4 with irregular anterior band of silver pruinosity, approximately 1/4-1/2 width of tergite, extending to ventral surface and absent for a short span at dorsal midpoint. Tergite 5 with 2 small isosceles triangles of silver pruinosity on either side of dorsal midpoint with the short side at the 4/5 suture line; a small gap of black lateral to triangular pruinose areas, at suture line, then silver pruinosity starts and extends along a logarithmic (S-curve) line to posterior extreme of terga, meeting suture on lateral surface. Genital segments black, with hint of metallic blue. Phallophore of aedeagus short. Vesica extends ventrally and laterally to almost wrap around tip of aedeagus. Median process extends as a triangular lobe. Juxta reduced and extending as a spiny projection dorsal of median process. Surstylus rod shaped. Gonopod wide at base with apical point extending anteriorly. Paramere with distal part curved into a hook (lateral view) and anteroventral corner of base with a single strong seta. A triangular, ventrally extending process (parameral apodeme) is visible just posterior to paramere. Cercus strongly curved, in lateral view, with basal tuft of dense long setae.

Diagnosis: This species very closely resembles *B. maerens* in external morphology but is easily separated on the basis of the form of the male genitalia. Specimens of *B. maerens* that were examined have much stronger developed prescutellar acrostichal setae than the present specimen of *B. styx*. This may be a way to separate specimens of these species if the genitalia are obscured, but more specimens are needed to confirm the usefulness of this character.

Key to separate *Boettcheria maerens* and *B. styx*:

1. Frontal setae breaking into 2 rows below the level of the pedicel ..... *Boettcheria maerens/styx* (2)
1'. Frontal setae consisting of 1 row, even below the level of the pedicel ..... other *Boettcheria*

2. Paramere with anteroventral corner greatly enlarged, greatest parameral width larger than length of distal hook; median process of aedeagus rounded; vesica in lateral view with greatest width in distal half, median part longer than lateral part ..... *B. maerens*
2'. Paramere with anteroventral corner moderately enlarged, greatest parameral width less than length of distal hook; median process of aedeagus triangular; vesica in lateral view almost tube-like and largely equal width, median part not differentiated ..... *B. styx*

Biology: Unknown.

Discussion: The description of this species increases the number of Central American *Boettcheria* species to 9. Since there are currently no comprehensive articles on the Central American (Mexico through Panama) *Boettcheria* fauna, the following list of species is provided, with references to available figures of their genitalia, to aid researchers who may wish to identify specimens from this area.

Boettcheria cimbicis (Townsend): primarily North American in distribution, but range extends to Mexico (Chihuahua, Federal District). Figures of the genitalia can be found in: Dahlem and Dow-

nes, 1996 (male & female); Lopes, 1950 (male & female); and Roback, 1954 (male).

Boettcheria dentata Dodge: described from El Salvador. A figure of the male genitalia is provided with Dodge's (1966) original description.

Boettcheria maerens (Townsend): occurs in Mexico (Chiapas, Federal District, Jalisco, Nuevo Leon). Figures of the male and female genitalia can be found in Lopes, 1976.

Boettcheria mexicana Lopes: ranges from southwestern U.S. (Arizona) to southern Mexico (Chiapas, Mexico). Figures of the genitalia can be found in Dahlem & Downes, 1966 (male and female) and Lopes, 1950 (male).

Boettcheria parkeriana Lopes: described from southern Mexico (Oaxaca) and with figures of the male genitalia provided with the description in Lopes, 1976.

Boettcheria praevolans (Wulp): seems to be the most common and wide-ranging species of this genus in Central America. It occurs from the southwestern United States (Arizona), throughout Central America, to Colombia. Figures of the male and female genitalia can be found in Dahlem & Downes, 1996 and Lopes, 1950.

Boettcheria pyrrhopyga (Hall): described from Panama; also recorded from Venezuela. Figures of the male genitalia can be found in Lopes, 1950 and Hall, 1933.

Boettcheria similis Lopes: described from the area of Cuernavaca, Mexico; also recorded from Panama. The male genitalia are illustrated in Lopes, 1946 and Lopes, 1950.

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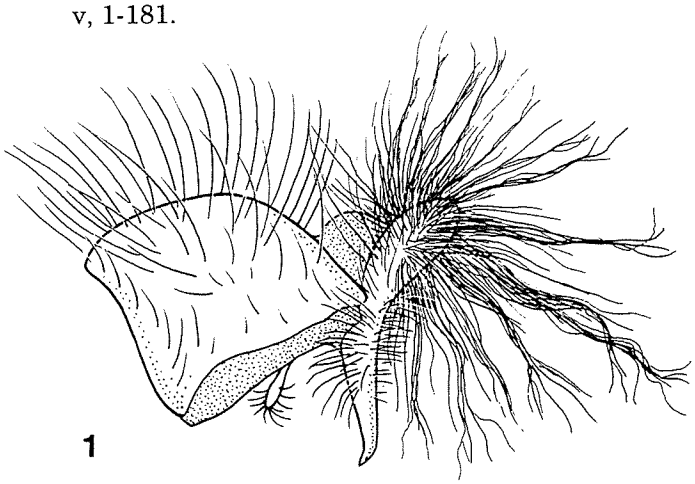

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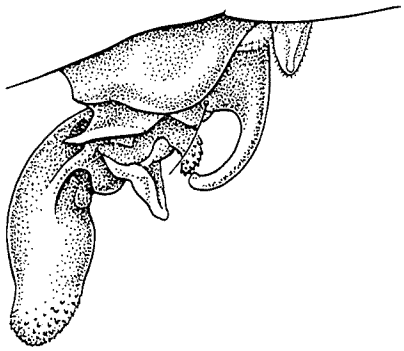

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Figures 1-2. *Boettcheria styx*; 1. lateral view of epandrium, surstylus, and cercus; 2. lateral view of aedeagus, gonopod, and paramere.