

ORIGINAL ARTICLE

## A new species and first record of *Embiophila* (Heteroptera: Plokiophilidae) from Nicaragua

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(Received 20 November 2003; accepted 20 July 2004)

### Abstract

A new species, *Embiophila maesi*, from Nicaragua is described. This is the third known species of the subfamily Embiophilinae and the first record from continental America. Illustrations in dorsal view and most important structures are included and a discussion of the relationships with the species of the genus is given.

**Keywords:** Nicaragua, Heteroptera, Plokiophilidae, Embiophilinae, *Embiophila*.

### Introduction

Plokiophilidae were originally treated as a subfamily of Microphysidae (China & Myers, 1929; China, 1953). Carayon (1961) raised it to family rank and proposed the subfamilies Plokiophilinae and Embiophilinae, the latter based on a single species, *Embiophila myersi* China, 1953 from Trinidad. Carayon (1974), in his taxonomic revision of Plokiophilidae, proposed the subgenus *Acladina*, from Africa, and described a new species, *Embiophila (A.) africana*, also mentioning a species from Laos which also belongs to *Acladina*, but did not describe it. Eberhard et al. (1993), in an interesting work on symbionts of *Tengella radiata* (Araneae), mentioned another species of this genus from Mexico, although they neither described it.

### Materials and methods

The authors had the possibility to study samples collected by Jean-Michel Maës, mainly with light and Malaise traps. Among the specimens collected with Malaise traps we discovered a new species of *Embiophila (Embiophila)* which is herein described and illustrated. The specimen was clarified with 10% potassium hydroxide and slide mounted in Canada balsam.

The measurements are given in millimeters. Because the available specimen is mounted in Canada balsam, a small but relevant distortion occurs, so the authors were not able to measure all the structures.

### Results

*Embiophila (Embiophila) maesi* sp. n.  
(Figs. 1–9)

Holotype male (slide mounted). Nicaragua, Jinotega (13° 0.5'N, 86° W), Cerro Muzu, 220 m, 9/1997. Maës-Hernandez col. Deposited in the collection of the National Museum of Natural History, Smithsonian Institution, Washington, United States of America.

### Description

*Male* (Figure 1). Total length: 1.60 mm; something more than three times greater than the maximum width of the pronotum. General coloration brown uniform, antenna and rostrum light brown. Pilosity light, formed, in addition to the cephalic and pronotal trichobothria, by long hairs, curved and decumbent, homogeneously distributed on the dorsal surface.

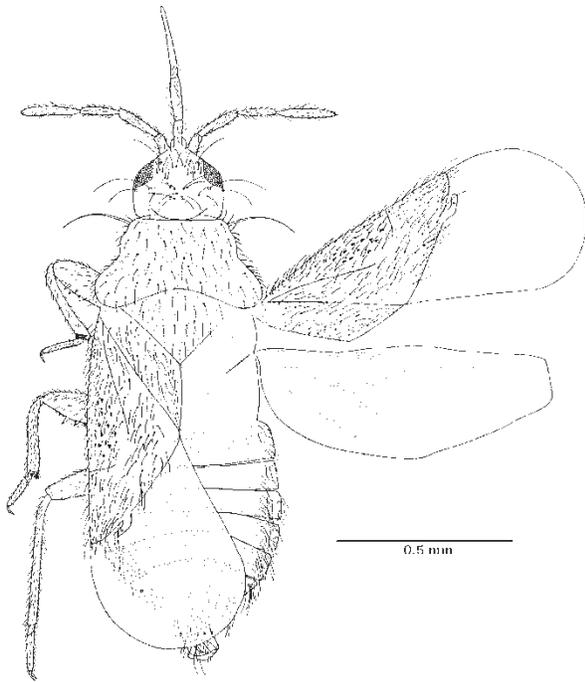


Figure 1. *Embiophila (Embiophila) maesi* sp. n. Dorsal view.

Head (Figure 2) length almost equal to its width. Ocelli present, though they are not very evident because of the clarifying method. With three cephalic trichobotria located near to each eye: the shorter behind the posterior edge of the eye, the largest at the front at the level of posterior margin of the eye and the third also at the front, in front of the anterior border of the eye. Lengths of antennal segments, I: 0.07; II: 0.15; III: 0.12; IV: 0.17. Ratio of segment lengths about 1:2.1:1.7:2.4. Lengths of rostral segments visible, II: 0.08; III: 0.13 and IV: 0.22. Ratio of segment lengths about 1:1.6:2.7.

Pronotum something more than two times as wide as its average length. A large trichobothrium at the anterolateral angles. Scutellum wider than long at the base.

Hemelytra hardly exceeds the apex of the abdomen; with 13 corial glands on the exocorium, absent on the cuneus; cuneal suture straight, membrane dull, light brown, with "stub" of the same color as the cuneus and with a hair. Hind wings with a basal cell from which project two nervures: the R + M, that is not branched, the free distal branch of nervure Cu; and a Pcu free.

Legs (Figures 3–7) relatively short. Same pilosity as the dorsal surface. The distal half of the fore femora with two parallel rows of spines on the ventral surface, the first pair of medium size, the second pair with longer spines, and the last two subapical pairs with small spines; the middle femora has a row of seven spines on the distal third, with the third and



Figure 2. *Embiophila (Embiophila) maesi* sp. n. Dorsal view of head and pronotum.

fourth spines of greater length; the posterior femora is unarmed. Tibiae straight; the apex of the fore tibiae has a row of hairs forming a comb, and an internal projection to the insertion of the tarsus carrying a tuft of hairs; the middle tibiae has no comb and the projection is less developed.

Genitalia (Figures 8 and 9). Paramere symmetrical, wider towards the apex, 5.4 times longer than wide, with the apex rounded. Phallus sclerotized, with acus characteristic of the family, bent and with a slight subapical widening. Anal segment semicircular.

*Female*: Unknown.

### Etymology

We named this new species after Jean-Michel Maës (Leon, Nicaragua), who has provided the material from Nicaragua for this study.

### Discussion

In couple nine of the key to the known Plokiophiliidae, Carayon (1974) proposed four characters to distinguish *Embiophila (Embiophila) myersi* from *Embiophila (Acladina) africana*. *Embiophila maesi* belongs to the nominotypic subgenus due to the presence of a free distal branch of the cubital vein in the posterior wings. The length of the last segment of the rostrum is smaller than the precedent one and the mid tibia is straight (characters given for the subgenus *Acladina*), but these characters are not reliable because of the mounting method. Due to the absence of females the presence of the copulatory tubes could not be verified. *Embiophila maesi* differs from *E. myersi* by the longer pronotal trichobothria; number and disposition of femoral spines: in *E.*

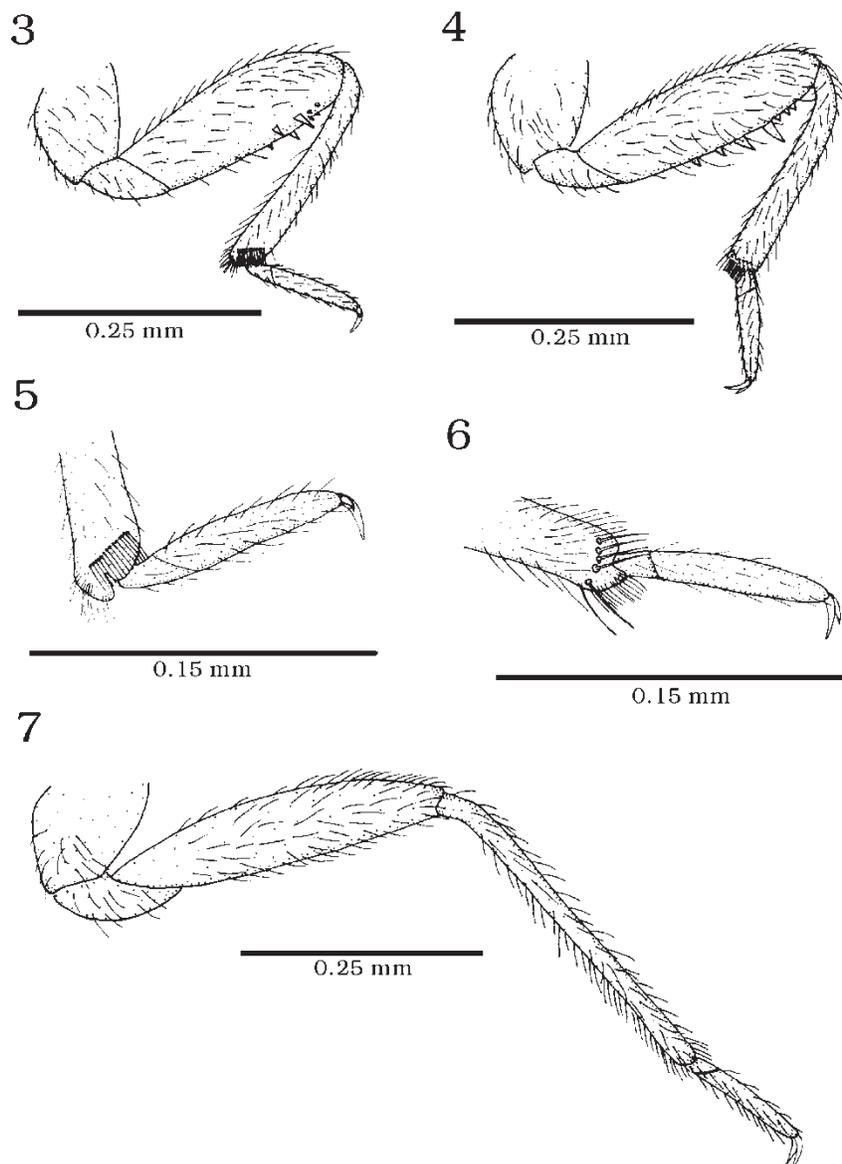


Figure 3–7. *Embiophila (Embiophila) maesi* sp. n. (3) Fore leg, general view; (4) middle leg, general view; (5) fore leg, detail of the apex of tibiae and tarsi; (6) middle leg, detail of the apex of tibiae and tarsi; (7) hind leg, general view.

*myersi* “. . . the front femur (is) armed on underside of apical half with two large teeth, with four minute teeth placed one on basal side and three on apical side of the large teeth; middle femur beneath with five large teeth extending from apical third to basal third, the largest toward apex and gradually decreasing in size towards basal tooth. . .” (China, 1953: 72). In *E. maesi* the fore femur bears a double row of symmetrical and parallel spines on the inner side, placed on the distal half, the first couple of spines of a median size, the second one the longest and the two last ones the shortest. The mid femur bears a row of seven spines placed on the apical two-thirds, the third and fourth spines the longest. It also differs by the number of exocorial glands (13 in *E. maesi*, 35 –

40 in *E. myersi*), and by the morphology of the phallus: in *E. maesi* it is less curved and the apex of parameres are more truncated apically.

#### Acknowledgments

We express our gratitude to Jean-Michel Maës (Museo de Entomología, León, Nicaragua) for his unvaluable contribution to the knowledge of the entomological fauna from Nicaragua. We also acknowledge Axel O. Bachmann (Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina) and Gustavo Spinelli (División Entomología, Facultad de Ciencias Naturales y Museo, UNLP) for reviewing

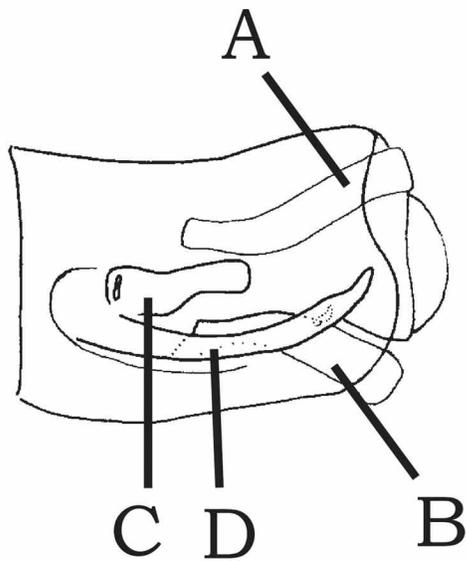
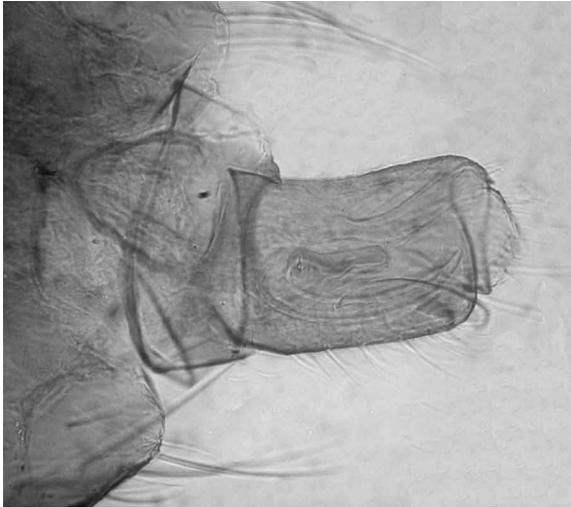


Figure 8–9. *Embiophila (Embiophila) maesi* sp. n. Male genitalia: (A, B) paramere; (C) articular apparatus; (D) acus.

and making constructive comments on this manuscript. This work was supported by Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET.

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