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Epsilogaster faviolae, a new species of Mendesellinae from Colombia (Hymenoptera: Braconidae)

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Abstract

A new species of mendeselline braconid wasp, *Epsilogaster faviolae* Valerio and Whitfield, **sp. nov.**, is described and illustrated. This is the first record from Colombia for the subfamily and the genus. An update to the previously published key for the *Epsilogaster* species is given to aid in identification.

Key words: Taxonomy, Hymenoptera, Braconidae, Mendesellinae, *Epsilogaster*, Neotropical region

Introduction

The subfamily Mendesellinae was only recently described (Whitfield & Mason, 1994) and its two genera, *Epsilogaster* Whitfield and Mason and *Mendesella* Whitfield and Mason, continue to be rarely collected. Valerio and Whitfield (2000) and Yamada and Penteado-Dias (personal communication) have added two new species of *Mendesella* from Costa Rica and Brazil, respectively, but *Epsilogaster* has remained with its original six described species. Recently, with the intensive malaise trapping regime of the NSF-funded Colombian Insect Biodiversity Project (http://www.uky.edu/~mjshar0/), more material of *Epsilogaster* has now been collected and studied. From this material, a new species is described below, and an update to the *Epsilogaster* species key from Whitfield & Mason (1994) is presented. The biology of the new species is unknown; only one rearing record is known for *Epsilogaster*, consisting of a series of *E. bicolor* that was reared from a twig borer (Lepidoptera: Momphidae) on buttonbush (*Cephalanthus*) in Mississippi.

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Materials and methods

Morphological terminology used in the species descriptions is that of Huber and Sharkey (1993), and Schuh (1989); except for the morphology of the propodeum, which is used *sensu* Townes (1969, Fig. E). The cuticular sculpturing terminology is that of Harris (1979), while the terminology for the wing venation is a variation of the Comstock-Needham system as used by Sharkey and Wharton (1997, Fig. 15). Specimens were initially identified using the Whitfield (1997) Mendesellinae generic key and the Whitfield and Mason (1994) key for the *Epsilogaster* species.

One fore and hind wing were pulled away from the body, mounted temporarily on a slide for photography, and then remounted with the specimen. Lateral habitus illustrations were obtained using a digital camera (JVC GC-QX5HD) mounted on a Leica MZ12.5 stereomicroscope.

Descriptive taxonomy

It should be noted that the new species represents an exception to the wing color generalization (wings hyaline) for *Epsilogaster* in the generic keys of Whitfield and Mason (1994) and Whitfield (1997); otherwise the new species can be identified using the key to *Epsilogaster* species published by Whitfield and Mason (1994), as modified below.

1 Head and mesosoma black to dark brown.....2
- Head and mesosoma fulvous, sometimes shaded with brownish infuscation 3
2 First metasomal tergite about 2x as long as maximum (anterior) width, with strongly raised medial portion .....*E. palenque* Whitfield and Mason
- First metasomal tergite about 1.5x as long as maximum width, with medial portions flattened or barely raised.....*E. bicolor* Whitfield and Mason
3 Dorsal carina strong to at least midlength of first metasomal tergite; sometimes very near lateral edge of tergite posteriorly; middle arm of E-shaped sclerotization of second tergum ending abruptly at or before midlength of tergum 4
- Dorsal carina of first metasomal tergite weak or so laterally placed as to be difficult to discern; diddle arm of E-shaped sclerotization of second tergum variably developed... 5
4 Surface of posterior half of first tergite smooth; ovipositor sheaths strongly darkened relative to metasoma .....*E. dureno* Whitfield and Mason
- Surface of nearly entire length of first metasomal tergite coarsely sculptured; ovipositor sheaths weakly if at all darkened 5
5 First metasomal tergite about 1.5x long as maximum width ....*E. braziliensis* Whitfield and Mason
- First metasomal tergite more than 2.0x long as maximum width (Fig. 4, 7) 6

6 Wings not infuscate; propodeum with one transverse carina in anterior 1/3 that does not pass trough the elongate areola ..... *E. panama* Whitfield and Mason

- Wings infuscate (Figs. 2, 5, 6); propodeum with a series of transverse carinae, some of which pass through the elongate areola (Fig. 4) ....*E. faviolae* Valerio & Whitfield, **sp. nov.**

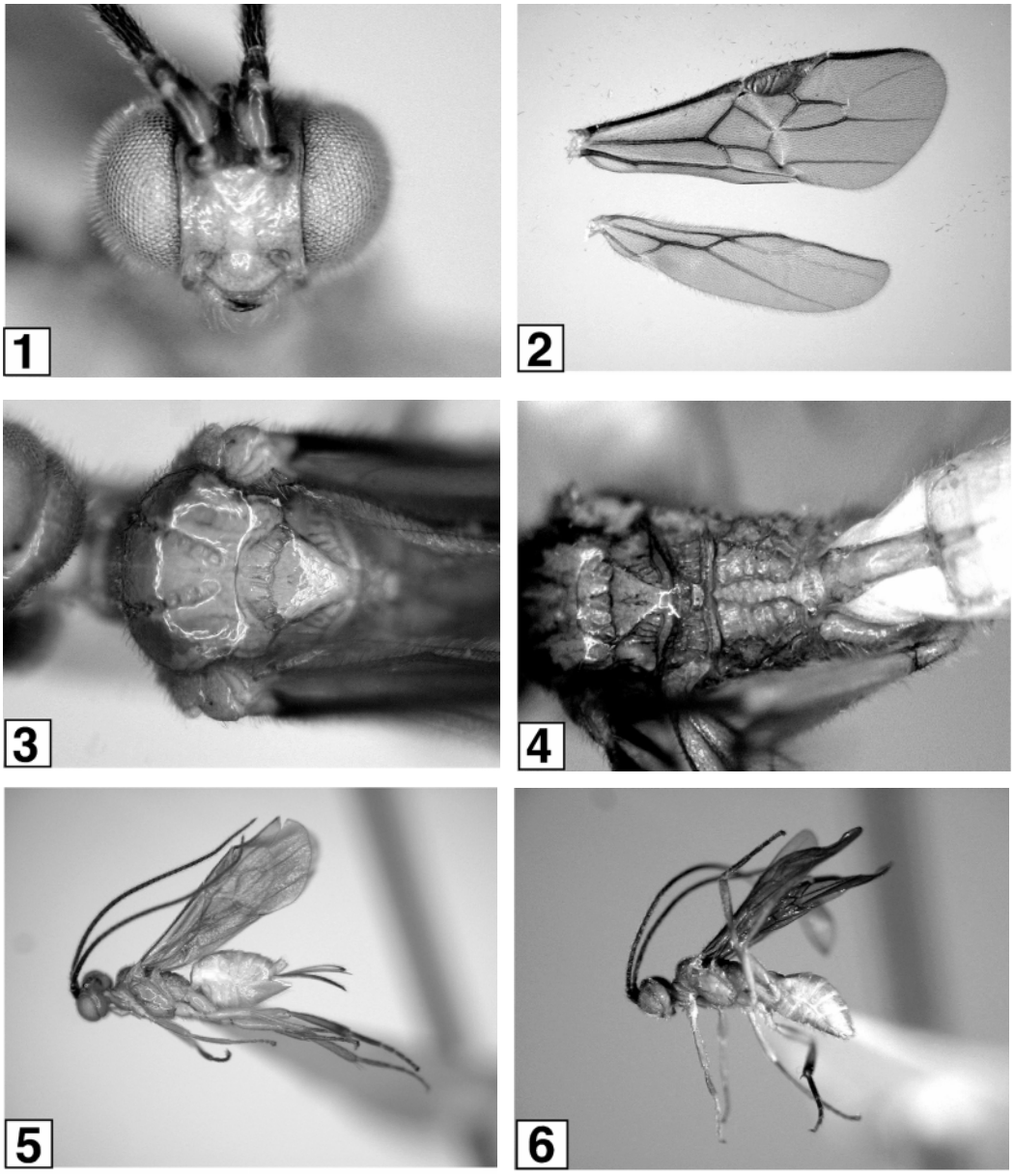
***Epsilogaster faviolae* sp. nov. (Figs. 1-7)**

FEMALE (Figs. 1, 2, 3, 5) - Body color: mainly bright yellowish brown; with antennal flagellomeres dark brown; eyes silver; ocelli light yellow; scape and pedicel with dorsal and posterior areas brownish-yellow as well as mandible tips, inter ocellar area, hind and middle leg tarsomeres, hind leg distal 1/3 of tibia (remainder of legs yellow as metasoma). Metasomal terga 1 and 2 as yellow as mesosoma with remainder terga and sternites less bright and sclerotized, lateral metasomal membranes whitish. Body length= 5.76 mm; fore wing length= 3.52 mm.

Head (Fig. 1): head height/compound eye height = 1.2; head height/compound eye length = 1.60; length of first antennal flagellomere = 0.24 mm; length of first antennal flagellomere/width of first antennal flagellomere = 4.75; length of first antennal flagellomere/length of second antennal flagellomere = 1.19; length of first antennal flagellomere/ length of third antennal flagellomere = 1.27; distal flagellomere length/width of distal flagellomere = 3.25; intertentorial pit distance = 0.18 mm; ocello-ocular distance = 0.11 mm; distance between torulus and anterior tentorial pit = 0.288 mm; face width at dorsal edge of clypeus = 0.37 mm. Antenna with 36 flagellomeres; face nitid, with widely scattered punctate sculpturing; eyes large and densely setose; vertex and mediodorsal area of occiput with scattered punctate sculpturing, remainder of occiput and gena with more well defined and denser punctate sculpturing; ocelli forming an equilateral triangle.

Mesosoma (Fig. 3): mesosomal length/mesosomal width = 1.44, mesosomal height = 1.68 mm; hind tibia length/hind tibia maximum width = 7.66; propleural mainly nitid with scattered punctate sculturing, distal edge with a small ridge; pronotum ventral edge with widely spaced and weak transverse carinae that is more defined and cristate anteriorly, and forming an "V" shape area in anterior view, posterior edge with confused areolate sculpturing, dorsal edge nitid; mesonotum evenly setose and with weak finely punctate sculpturing throughout; notaulus conspicuously foveate throughout, foveae becoming larger posteriorly (Fig. 3); scutellar sulcus wide, crossed by six large costulae; scutellum subtriangular, without posterior apico-medial pits or sculpturing, centrally with a few punctures associated with setae; anteromedial area of metanotum with two subcircular pits, remainder with transverse carinae; axillary troughs of mesonotum with transverse carinae except lateral nitid area; mesopleuron nitid except sternaulus in anteromedial area crossed by 3 weak but broad costulae, subalar area with scattered cristate/lineate sculpturing present;

metapleuron with episternal area nitid, epimeral area ringed by areolate-rugose sculpturing, centrally with barely discernible fine punctate sculpturing; propodeum with subparallel mid-longitudinal carinae joining anteriorly to form an areola, remainder with a series of transverse carinae, one or more of which pass through the areola.



FIGURES 1-6. *Epsilogaster faviolae* Valerio & Whitfield **sp. nov.** 1, female, head, anterior view; 2, wings; 3, mesoscutum and scutellum,dorsal view; 4, posterior of mesosoma, including propodeum, and anterior metasoml tergites, dorsal view; 5, female habitus, lateral view; 6, male, lateral view.

Metasoma (Figs. 4, 5, 6, 7): distal width of tergum 1/ basal width of tergum 1 = 2.5; length of tergum 1/ distal width of tergum 1 = 3.33; hypopygium length = 0.75 mm; ovipositor length/hind tibial length = 1.52; first metasomal tergum: dorso-lateral carinae without dorsal carinae; basal 1/2 with weak sculpturing, laterally with more or less contiuous sublateral longitudinal carinae and two lobelike flanges near spiracles (Fig. 7); second tergum with middle arm of "E"-shaped structure reaching edge of third tergum and as sclerotized as tergum 1, internal areas of E shaped structure contrastingly nitid and weakly sclerotized; third tergum with medial longitudinal area more sclerotized in a short band posterior to middle arm of second tergum E-shaped structure.

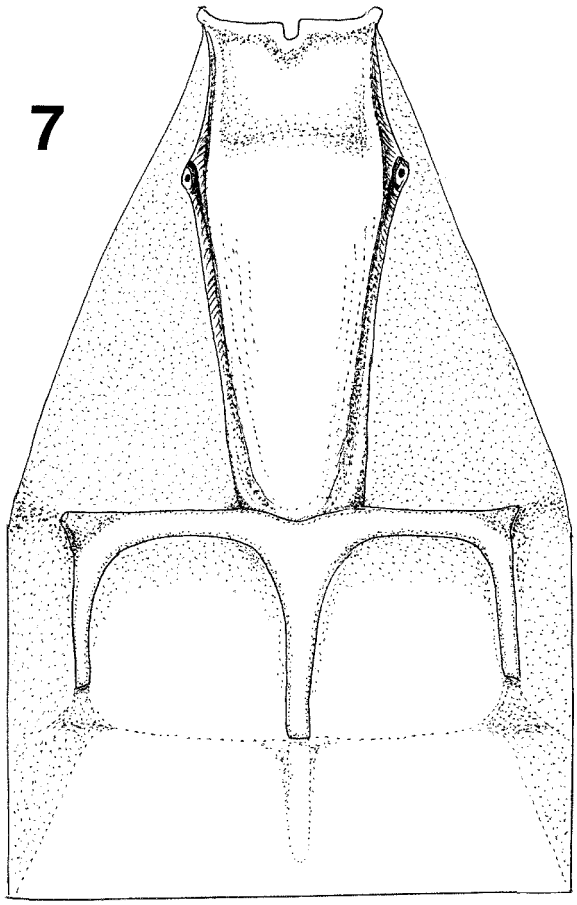


FIGURE 7. *Epsilogaster faviolae* Valerio & Whitfield **sp. nov.**, anterior metasomal tergites, dorsal view.

MALE (Figs 4, 6)- Body length = 3.28-3.30 mm; fore wing length = 3.12-3.20 mm; head height/compound eye height = 1.10-1.11; head height/compound eye length = 1.47-

1.54; length of first antennal flagellomere = 0.22 mm; length of first antennal flagellomere/width of first antennal flagellomere = 3.0; length of first antennal flagellomere/length of second antennal flagellomere = 1.20-1.50; length of first antennal flagellomere/length of third antennal flagellomere = 1.29-1.30; distal flagellomere length/width of distal flagellomere=1.67-2.66; intertentorial pit distance = 0.18 mm; ocello-ocular distance = 0.13 mm; distance between torulus and anterior tentorial pit = 0.25-0.28 mm; face wide at dorsal edge of clypeus = 0.35-0.36 mm; mesosomal length/mesosomal width= 1.28-1.46, mesosomal height = 0.56-0.68 mm; hind tibia length/hind tibia maximum width = 7.0-7.81; distal width of tergum 1/ basal width of tergum 1 = 2.21-2.25; length of tergum 1/ distal width of tergum 1 = 3.23-3.27.

Similar to female except that the number of antenna flagellomeres is 35, the scutellar sulcus crossed by 5 (instead of 6) large costulae, and the propodeum usually with more of the transverse cariae passing through areola.

Material examined. - HOLOTYPE: female, COLOMBIA, Vinchada PNN, Tuparro, Cerros Tomas, 5°21' N/ 67°51' W, 140 m, Malaise trap, 19-29/vi/2000. Col. W. Villalba. PARATYPES: 3 males, same data as holotype. Holotype and 2 paratypes deposited in Instituto Alexander von Humboldt, Villa de Leyva, Colombia; other paratype deposited in U. S. National Museum, Washington, D. C.

Comments.- This species is the only known *Epsilogaster* species with infuscate wings. There are other species of mendeselline braconids with infuscate wings, they belong to the genus *Mendesella*.

Etymology.- Gender: feminine. The present species is named in honor of Faviola Alfaro Villalobos; "buenaso he!"

Discussion

The genus *Epsilogaster* was previously reported from Brazil, Bolivia, Costa Rica, Ecuador, Panama, Trinidad and the southern United States (Whitfield & Mason 1994). We expect that the genus is broadly distributed from northern and central South America north to the southern United States, but it does not appear to be particularly common anywhere.

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