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Epsilogaster fullertoni, a new species of *Epsilogaster* Whitfield and Mason (Hymenoptera: Braconidae: Mendesellinae) from Florida, USA

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Abstract

A new species of *Epsilogaster* recently discovered from Florida, *Epsilogaster fullertoni* Pitz n. sp., the third species of *Epsilogaster* described from the Nearctic region is described and the key to species of *Epsilogaster* is updated to include *E. fullertoni*.

Key words: Hymenoptera, Braconidae, Mendesellinae, *Epsilogaster*, Nearctic, Taxonomy

Introduction

Whitfield and Mason (1994) described the subfamily Mendesellinae, the two included genera, *Mendesella* and *Epsilogaster*, and nine species. Additional species have been identified and described from material collected through large-scale biodiversity inventories from Colombia, Costa Rica and Mexico (Valerio and Whitfield 2000, 2002; Delfin et al. 2002; Figueroa et al. 2003) raising the total number of described species of *Epsilogaster* to 10, including *E. fullertoni*. Malaise trap samples from multiple habitats around the University of Central Florida campus, Orange Co., FL, and surrounding areas within the county yielded the new species described below. The key to species of *Epsilogaster* provided by Figueroa et al. (2003) is updated to include *E. fullertoni*.

Materials and Methods

Wing venation terminology follows Sharkey and Wharton (1997, Figs. 13–21). Generic identification was accomplished using the Whitfield (1997) key to the genera of Mende-

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sellinae. The specimens were also taken through the keys to species of *Epsilogaster* (Whitfield and Mason 1994; Figueroa et al. 2003) to determine if they represented an undescribed species.

I removed one forewing and one hind wing from the paratype female and slide-mounted each to be photographed, after which I re-associated both wings with the specimen. All photographs were taken using a JVC KY-F75 3CCD digital camera attached to a Leica MZ-16 stereoscope and were prepared using an Auto-Montage© imaging system.

Key to described species of *Epsilogaster* Whitfield and Mason

1 Head and mesosoma black to dark brown 2
- Head and mesosoma fulvous, sometimes shaded with brownish infuscation 5
2 Transverse carinae of propodeum not complete, interrupted by median areola; median areola with transverse carinae across it, but not contiguous with transverse carinae outside areola; antenna with 23 flagellomeres; first metasomal tergite about 1.5 times as long as maximum anterior width, with medial portions flattened or barely raised..... ..... *E. bicolor* Whitfield & Mason
- At least 1 transverse carina of propodeum complete through median areola; first metasomal tergite about 2 times as long as maximum width, if shorter, then second metasomal tergum with well defined E-shape structure; medial portion variable; antennal flagellomere number variable 3
3 First metasomal tergite with medial portion raised in lateral view; antenna with 22 flagellomeres; propodeum with one clearly defined transverse carinae .... *E. palenque* Whitfield & Mason
- First metasomal tergite not raised medially in lateral view, number of antennal flagellomeres variable; propodeum with more than one clearly defined transverse carina 4
4 Metapleuron usually without rugulose sculpturing over most of its length; if rugulose sculpturing present on metapleuron, then it is present only over distal third; mesopleuron smooth except for sternaulus multifoveate and subalar depression with scattered striate sculpturing; antenna with 22 to 24 flagellomeres; propodeum with few transversal carinae present ..... *E. williami* Figueroa, López & Valerio
- Metapleuron with prominent carinae and spaced rugulose sculpturing over most of its surface; mesopleuron essentially nitid except for sternaulus with large scrobiculate sculpturing that reaches and fuses with scrobiculate sculpturing from posterior and dorsal margins of mesopleuron; antenna with more than 24 flagellomeres; propodeum with transversal carina throughout ..... *E. antoniae* Valerio & Whitfield
5 Longitudinal carina of first median metasomal tergite strong to at least midlength of tergum (Figure 1A); sometimes very near lateral edge of tergite posteriorly 6
- Longitudinal carina of first median metasomal tergite weak or so laterally placed as to

be difficult to discern..... 8

6 Middle arm of E-shaped sclerotization of second tergite ending abruptly at or before midlength of tergite 7

- Middle arm of E-shaped sclerotization of second tergite ending posterior to midlength of tergite (Figure 1B)..... *E. fullertoni* Pitz n. sp.

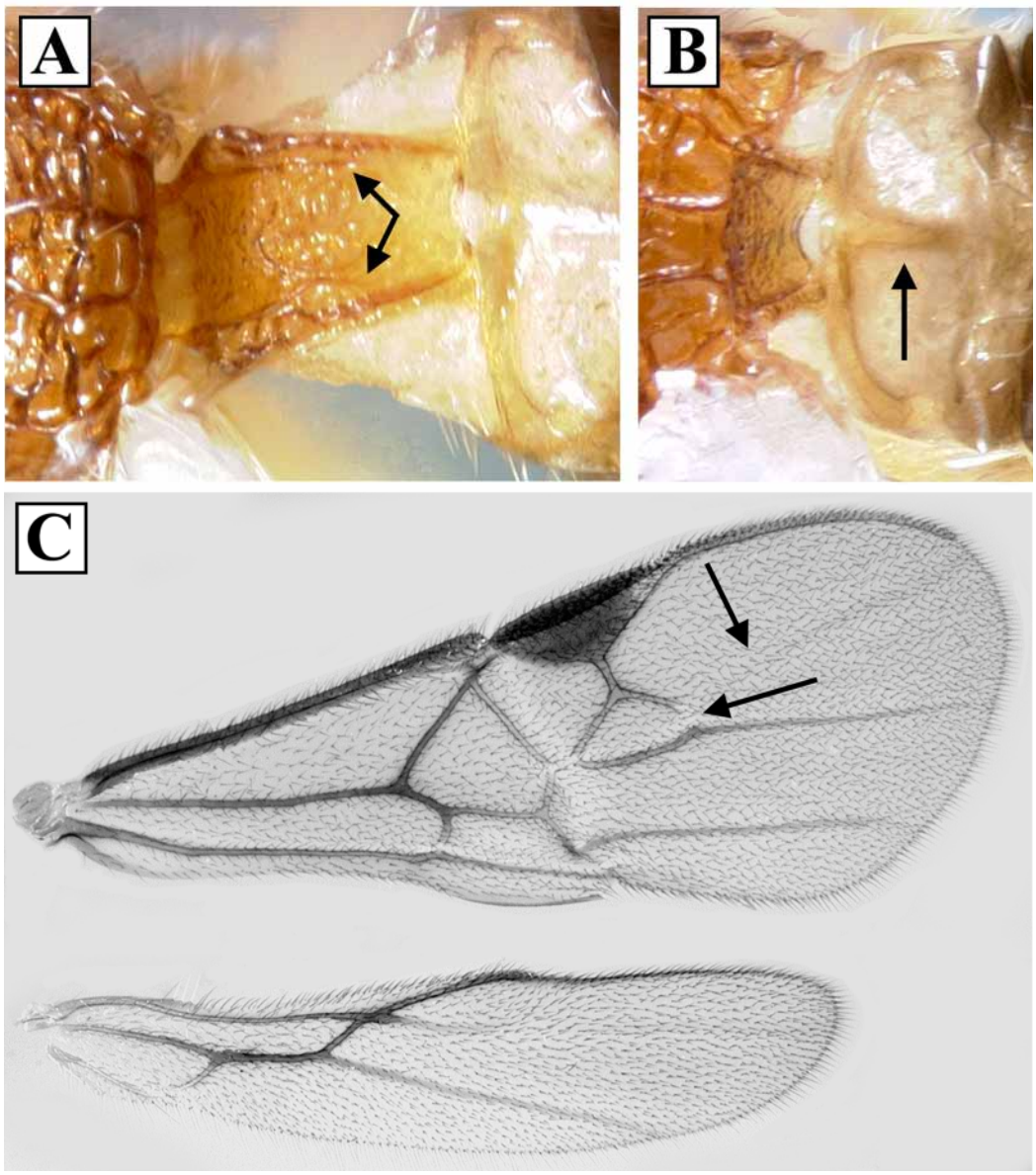

FIGURE 1. Female *Epsilogaster fullertoni* n. sp., A, dorsal view of median tergite of the first metasomal segment, illustrating dorsolateral carina; B, dorsal view of second median metasomal tergite illustrating length of median arm of E-shaped sclerotization; C, fore- and hind wings illustrating 3RSb vein and r-m crossvein of forewing.

7 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 .....*E. tico* Whitfield and Mason
8 First metasomal tergite about 1.5 times long as maximal width .... *E. braziliensis* Whitfield and Mason
- First metasomal tergite more than 2.0 times long as maximal width..... 9
9 Wings not infuscate; propodeum with one transverse carina in anterior third that does not pass through the elongate areola .....*E. panama* Whitfield and Mason
- Wings infuscate; propodeum with a series of transverse carinae, some of which pass through the elongate areola .....*E. faviolae* Valerio and Whitfield

***Epsilogaster fullertoni* n. sp.**

Etymology — named in honor of Stuart Fullerton, for his enthusiastic development of the "Bug Closet" insect collection at the University of Central Florida..

Description — Holotype female (Figure 2)

Length: 1.95mm. **Color**: light yellowish brown except brown as follows: pedicel laterally and posteriorly; flagellomeres, inter-ocellar area, apex of teeth of mandibles, forewing veins, metasomal tergita 4–7, tarsal claws, ovipositor sheaths. Eyes silver. Wings hyaline. **Head**: head height/compound eye height = 1.39; head height/compound eye length = 3.00; length of first flagellomere = 0.16 mm; length of first flagellomere/width of first flagellomere = 3.45; length of first flagellomere/ length of second flagellomere = 1.27; length of first flagellomere/ length of third flagellomere = 1.35; length of apical flagellomere/ width of apical flagellomere = 2.90; intertentorial pit distance = 0.13 mm; ocello-ocular distance = 0.13; distance between antennal insertion and anterior tentorial pit = 0.20; width of face at dorsal edge of clypeus = 0.49; antenna with 25 flagellomeres; face weakly rugose with sparse punctures and setation; eyes with dense setation; vertex, gena and occiput with moderately dense punctures and setation, ocelli forming an equilateral triangle. **Mesosoma**: mesosomal length/mesosomal width = 1.81; mesosomal height = 0.54 mm; hind tibial length/maximal width of hind tibia = 6.17; propleuron mostly smooth with sparse punctures and setation; pronotum with three large punctures antero-medially, otherwise smooth medially, with longitudinal carinae extending dorsally to ventrally becoming weaker ventrally; mesopleuron mostly smooth, with sparse setation dorsad sternaulus and moderately dense setation ventrad sternalus, sternaulus composed of regular large fovea, running diagonally from midpoint of ventral margin to midpoint of anterior margin of mesopleuron, subalar space mostly smooth with sparse punctures and setation; mesonotum smooth with moderately dense evenly distributed punctures and setae, notaulus composed of regular fovea; scutelluar sulcus with 6 longitudinal carinae, scutellum subtriangular, smooth with sparse punctures and setation; metapleuron mostly smooth

with sparse punctures and setation; metanotum with two subcircular pits anteromedially, axillary troughs with three incomplete longitudinal carinae, otherwise smooth; propodeum with two longitudinal submedial subparallel carinae that join anteromedially, propodeum with two longitudinal lateral carinae on each side, many irregular lateral carinae that cross more distinct longitudinal carinae forming areolae. **Wings** (Figure 1C): forewing length = 2.01 mm; 3RSb barely indicated, r-m crossvein present but not tubular. **Metasoma**: basal width of median tergite of the first metasomal segment/apical width of median tergite of the first metasomal segment = 1.38; length of median tergite of the first metasomal segment/apical width of median tergite of the first metasomal segment = 2.74; hypopygium length = 0.33 mm; ovipositor length/hind tibial length = 1.05; first metasomal tergite with dorsolateral longitudinal carinae extending from anterior edge approximately three-fourths of the length of tergite (Figure 1A), area between dorsolateral carinae smooth to just posterad spiracles, weakly rugose to just anterad the smooth apex, sublaterally with longitudinal carinae extending over entire length, short lateral carinae running from sublateral carinae to lateral edge creating large fovea/areolae posterad spiracles, spiracles protruding on flange-like extensions; median tergite 2 with middle arm of E-shaped sclerotization extending into posterior half of tergite but ending before posterior margin of tergite (Figure 1B), E-shaped sclerotization smooth, remainder of second median tergite weakly sclerotized, with sparse setation; median tergite 3 with sparse setation, without apparent sclerotization medially and posterad middle arm of E-shaped sclerotization on T2.

Variation — paratype female; antenna with 24 flagellomeres

Biology — Unknown

Male — Unknown.

Material Examined — Holotype female: UCF, FL. Orange Co. Orlando, X-19-1999, Malaise Trap. Deposited in the American Entomological Institute. Second label: Pine Pond Comm[unity] Dahoon Holly (S), P. Russel, T. Smith, S. Fullerton. Third label: UCFC 0 049 658. Paratype female: FLORIDA, Orange Co. Walt Disney World, 10-17 July 1997, Z. Prusak, S. Fullerton. Deposited in the Florida State Collection of Arthropods. Second label: MW-7 (unburned) S22 T24S R27E, Sand Pine/Oak Scrub, Malaise Trap.

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FIGURE 2. Habitus of holotype female *Epsilogaster fullertoni*, lateral view.

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