

## The description of *Moritiella* Buffington, new genus (Hymenoptera: Figitidae: Eucoilinae)

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### Abstract

The genus *Moritiella* Buffington, n. gen., is described, diagnosed and illustrated (Hymenoptera: Figitidae: Eucoilinae). Two species new to science are described: *M. elegans* n. sp. and *M. astrudae* n. sp. Phylogenetic evidence suggests *Moritiella* is among the *Zaeucoila* group of genera, a group of eucoilines chiefly parasitic upon leaf-mining Agromyzidae (Diptera).

**Key words:** *Moritiella*, *Zaeucoila* group, Eucoilinae, Figitidae, Cynipoidea, new species, new genus

### Introduction

The Eucoilinae (Hymenoptera: Figitidae) are a unique group of parasitic wasps characterized by the possession of a scutellar plate with a glandular release pit situated in the center (Ronquist, 1995; Fontal-Cazalla *et al.*, 2002). No tribal level classification exists at the present for Eucoilinae, ergo genera have been informally grouped according to shared morphological and biological attributes (Nordlander 1982; Buffington, 2002; Fontal-Cazalla *et al.* 2002). Species of one such group of genera, the *Zaeucoila* group, predominately parasitize leaf-mining flies (Diptera: Agromyzidae) and have a stout, compact appearance, often with various carinae and ridges on the mesoscutum as well as projections on the posterior and lateral margins of the scutellum (Nordlander 1982; Buffington, 2002).

In the course of curating the Eucoilinae housed within the Canadian National Collection of Insects (CNC, Ottawa, Canada) and the United States National Museum (USNM, Washington, DC) in Spring 2002, I amassed a small series of what appeared to be

an undescribed genus of Eucoilinae. Upon further study, I not only confirmed this was a genus new to science, but within it, I discovered two previously undescribed species. This paper describes this genus, *Moritiella* n. gen., as well as two new species, viz. *M. elegans* n. sp. and *M. astrudae* n. sp. Molecular and morphological data (Buffington, 2005) suggest this newly described taxon is a member of the *Zaeucoila* group of genera (discussed further below).

### Material and methods

Observations for descriptions were made using a Leitz Wetzlar stereomicroscope and fluorescent light sources. Scanning electron micrographs were prepared using a JEOL JSM-6500 microscope; images were either captured on Polaroid 55 film and digitized (from the positive) using a HP 5300HC scanner, or acquired digitally via Gatan SEM software. Light microscope images were captured via an InSight 'Spot' 2 megapixel digital camera fitted to a Nikon SMZ 1500 stereomicroscope; lighting was described by Buffington *et al.* (2005). Figure plates were prepared using Adobe© Illustrator and Photoshop. Morphological terms follow Buffington (2002). In the case of the DNA voucher specimen, DNA was extracted from the metasoma, allowing for species level determination of the voucher.

### List of repositories

- CNCI Canadian National Insect Collection (Ottawa, Canada). Jennifer Read, curator.  
CSCA California State Collection of Arthropods (Sacramento). Chuck Bellamy, curator.  
USNM United States National Museum (Washington, DC). Dave Smith, curator.  
UCRC Entomology Research Museum, UC Riverside (Riverside). Doug Yanega, curator.

### *Moritiella* Buffington, new genus

(Figs 1–2)

Type species: *Moritiella elegans* Buffington n. sp., by present designation.

### Diagnosis

The following combination of characters separate *Moritiella* from the other previously described genera within the *Zaeucoila* group of eucoilinae genera: Orbital furrows entirely lacking. Genal carina present along ventral ½ to 1/3 of head. Conical projections absent on malar space. Pronotal plate broad; pronotal struts absent. Mesoscutum lacking any

sculpture. Scutellar plate with two rows of postero-dorsally oriented tubercles surrounding glandular release pit. Scutellar disk lacking projections. R1 of forewing always tubular and pigmented; radial cell always closed.

Differs from *Moneucoela* Kieffer by lacking lateral and posterior projections of the scutellum. Differs from *Agrostocynips* Diaz by the presence of a genal carina ventrally, the lack of inner orbital furrows on the face and having the tubercles on the scutellar plate much more developed. Differs from *Zaeucoila* Ashmead by the lack of the mesoscutal carina as well as having the tubercles on the scutellar plate much more developed. Differs from *Preseucoela* Buffington by lacking clypeal protuberances, lacking pronotal struts and by having several more tubercles on the scutellar plate (only two tubercles present in *Preseucoela*). Differs from *Ganaspidium* Weld by the possession of a large pronotal plate (pronotal plate in *Ganaspidium* 1/3 to 1/4 as wide as head) and by having several more tubercles on the scutellar plate (as in *Preseucoela*, only two tubercles present in *Ganaspidium*).

#### Description

*General appearance.* Shiny black to extreme dark brown all over body.

*Head.* Glabrous except for sparse setae along edge of eyes and malar space. Ocellar hair patches lacking. Orbital furrows lacking (Fig. 1A). Malar sulcus simple. Malar space smooth with protuberances. Genal carina present along ventral 1/2 to 1/3 of head (Fig. 2).

*Antenna.* Female: 13 segments, moniliform, semi-clavate; segment 3 slightly longer than remaining flagellomeres; rhinaria present on segments 3–13 (Fig. 1B). Male: unknown.

*Pronotum.* Pronotal plate large, half as wide as head, with sparse setae along dorsal margin; pronotal fovea open laterally. Pronotal struts lacking (Fig. 2A). Pronotum in lateral view smooth and sparsely setose. Lateral pronotal carina absent.

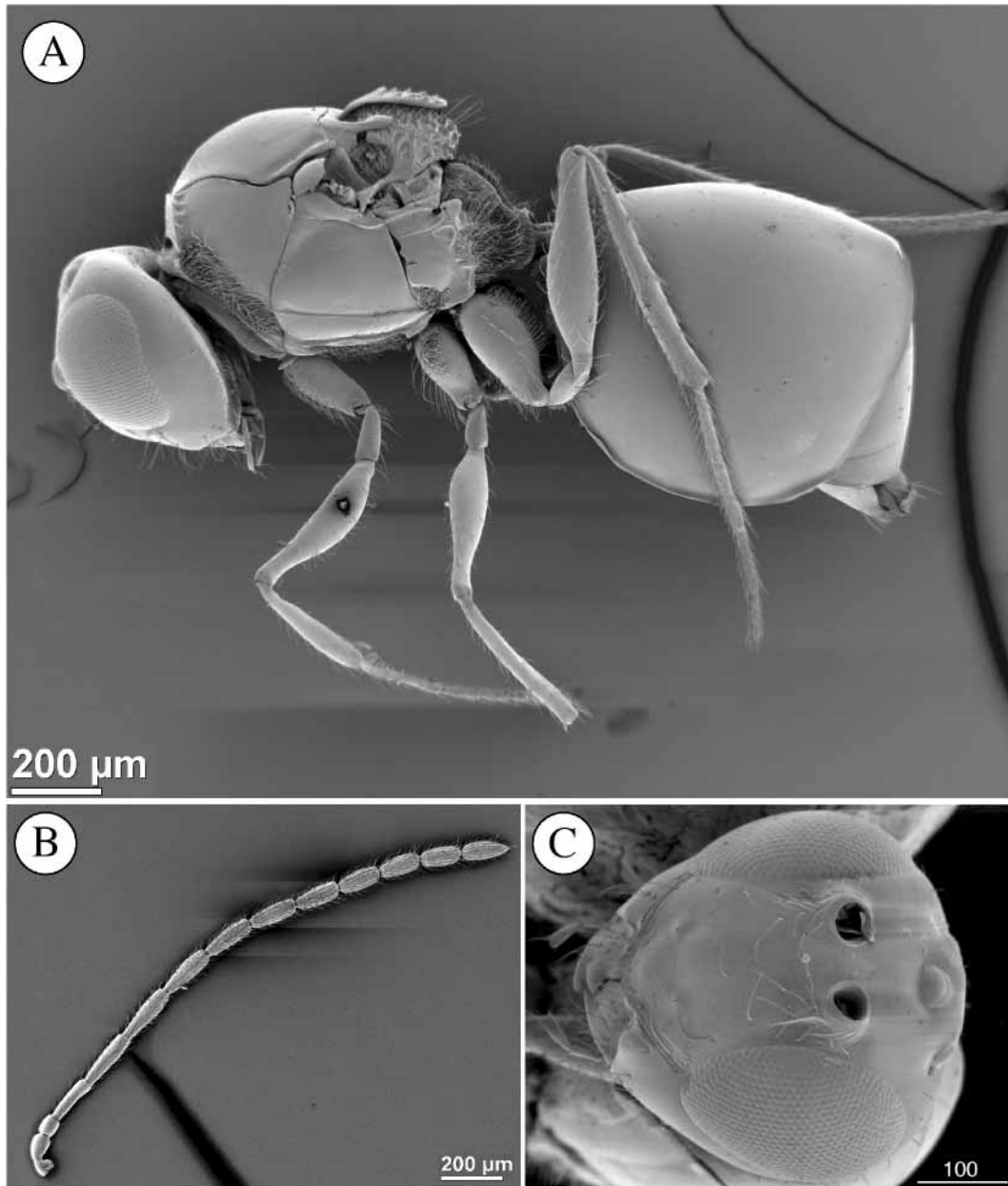
*Mesoscutum.* Smooth with a few sparse setae along anterior margin (Fig 2C). Mesoscutal keel absent. No other sculpture present.

*Mesopectus.* Upper and lower parts of mesopleuron smooth and glabrous (Fig. 1A). Dorsal and ventral margins of mesopleural triangle indistinct. Mesopleural carina simple, well defined. Lower portion of mesopleuron bordered by a ventral carina with a distinct anterior, elongate, surcoxal depression.

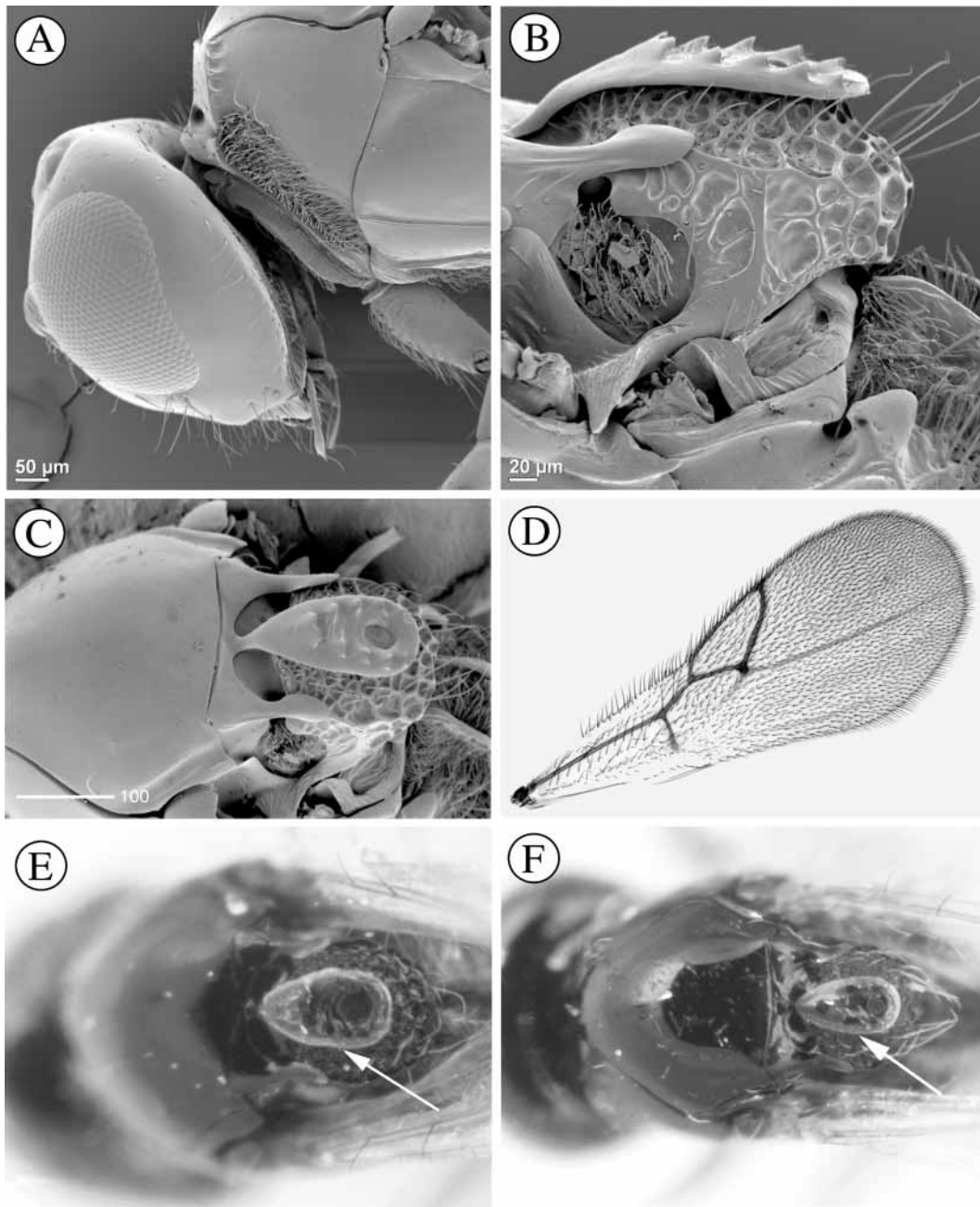
*Scutellum.* Scutellar plate large, covering 1/2 of dorsal sculpted surface of scutellar disk (Fig. 2C); mid-pit of scutellar plate situated centrally to posteriorly. Mid-pit surrounded by series of dorso-postero projecting tubercles (Figs 2B–C). Dorsal surface of scutellum coarsely alveolate with setiferous pits; lateral and posterior margins rounded (Fig. 2B). Scutellar plate close to surface of scutellar disk (not greatly raised). Lateral and posterior projections absent.

*Metapectal-propodeal complex.* Metapectus glabrous (Fig. 1A); dense setal patch present, ventrally located in antero-ventral cavity; scattered setae along posterior margin.

Spiracular groove with distinct dorsal and ventral margin. Posterior margin of metapectus ridged. Metapleural ridge present, reduced; submetapleural ridge reduced. Anteroventral cavity present, densely setose. Propodeum covered in short, dense setae. Propodeal carinae (Fig. 2C) subparallel, well developed, running from posterior margin of scutellum to dorsal margin of nucha, meeting each other at nucha; auxiliary propodeal carinae indistinct. Nucha glabrous.



**FIGURE 1.** *Moritiella elegans*, n. sp. A, SEM, lateral habitus; B, SEM, female antenna; C, SEM, head, anterior view.



**FIGURE 2.** *Moritiella elegans* n. sp. and *M. astrudae* n. sp. A, SEM head and mesosoma, lateral view (*M. elegans*); B, SEM, scutellum, lateral view (*M. elegans*); C, SEM, mesoscutum and scutellum, dorsal view (*M. elegans*); D, light microscope, forewing (*M. elegans*); E, light microscope, scutellar plate, dorsal view (*M. elegans*); arrow indicates lateral margin of scutellar plate; F, light microscope, scutellar plate, dorsal view (*M. astrudae*); arrow indicates lateral margin of scutellar plate.

*Wings.* Hyaline, densely covered with setae (Fig. 2D). R1 of forewing always tubular and pigmented; radial cell always closed; radial cell as deep as long. Apical fringe present, short.

*Legs.* Procoxae slightly smaller than either meso- or metacoxae. Patches of long setae present on all coxae, mostly along anterior margin. Remaining leg segments with sparse, evenly distributed setae, becoming slightly more dense and appressed on tarsomeres.

*Metasoma.* Female: larger than mesosoma. Hairy ring present at base of syntergum, broken at extreme dorsal margin and incomplete ventrally; hairy ring comprised of smaller, dense setae anteriorly and longer, singly spaced setae posteriorly; remainder of metasoma glabrous. Micropores present on terga 5–8 (terga posterior to syntergum). Terga posterior to syntergum directed ventrally at 70 degree angle relative to syntergum. Male: unknown

#### *Biology*

Unknown.

#### *Distribution*

Neotropical Region: Brazil, Colombia, Dominica, Ecuador, Venezuela.

#### *Etymology*

Named in honor of Shelah I. Morita who inspires my work on Figitidae.

#### ***Moritiella elegans* Buffington n. sp.**

(Figs 1A–C and 2A–E)

#### *Description and diagnosis*

As in description of genus, with: scutellar plate elongate with sides parallel (Fig. 2 E). Differs from *M. astrudae* by having an elongate scutellar plate.

#### *Etymology*

The overall coloration and lack of sculpturing give this eucoiline a very *elegant* appearance.

#### *Material examined*

HOLOTYPE. VENEZUELA: Merida, Merida City, 1860m, sweep veg. along trib. to Chama R. 3.V.1981. L. Masner (1 female). Deposited in CNC.

Additional material. PARATYPES. BRAZIL: Rio Grande, Guanabara, IX.1969, M. Alvarenga (1 female) [USNM]; COLOMBIA: Valle 10 km S Cali, 1000m, roadside by sugarcane field, 3.IV.1971. W. Eberhard, C. Garcia (1 female) [CNC]; Vichada PNN, Tupairo Centro Administrativa, Malaise 17, 140m 19–29.VI.2000, 'Muestra 268', W.

Villalba, coll. (1 female, DNA voucher MB085, UCR56842) [UCRC]; ECUADOR: Napo Province, Huahua Sumaco, km .45 on Hollin-Loreto road, XII.21.1989, Malaise trap, M & J Wasbauer, H. Real (3 females, one used for SEM in Figs 1–2) [CSCA]; VENEZUELA: Merida, Merida City, 1860m, sweep veg. along trib. to Chama R. 3.V.1981. L. Masner (1 female) [CNC].

***Moritiella astrudae* Buffington n. sp.**

(Fig. 2 F)

*Description and diagnosis*

As in description of genus, with: scutellar plate evenly rounded laterally resulting in a typical ‘teardrop’ shaped scutellar plate (Fig. 2 F). Differs from *M. elegans* by having lateral aspects scutellar plate evenly rounded.

*Etymology*

Named in honor of Astrud Gilberto, the famous *bossa nova* vocalist.

*Material examined*

HOLOTYPE. ECUADOR: Napo, Misahualli, 18.II.1983, L. Huggert (1 female). Deposited in CNC.

Additional material. PARATYPES. COLOMBIA: Valle above Saladido. 6500’, 8.IV.1971, Eberhard & Garcia (2 females, one missing metasoma) [CNC]; DOMINICA: West Indies, Holmwood Est., Sep. 9, 1965. DL Jackson, Bredin-Archbold-Smiths[onian] Biol[ogical] Survey, Dominica, WI. (1 female) [USNM].

**Discussion**

Buffington (2005) reported *Moritiella* (referred to as “New Genus D”) as sister-group to *Aegeseucoela* Buffington and deeply nested within the *Zaeucoila* group of genera (Fontal-Cazalla *et al.*, 2002; Buffington, 2002; Buffington, 2004). The majority of host records for species of Eucoilinae in this clade are for Agromyzidae (Buffington, 2002, and references therein; Buffington, 2004), which suggests species of *Moritiella* are likewise parasitoids of leaf-mining Agromyzidae. Carefully isolated host rearings are needed to confirm this.

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