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Two new species of the Neotropical genus *Hydrelliaeucoila* (Cynipoidea: Figitidae: Eucoilinae)

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ABSTRACT

Hydrelliaeucoila is an unusual genus of the subfamily Eucoilinae (Cynipoidea: Figitidae) that has only been reported from Argentina, as a parasitoid of Ephydriidae (Diptera). The purpose of this contribution is to describe two new species of the genus, to provide a key for all known species and to update the known geographic distribution of *H. egeria*.

ARTICLE HISTORY

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KEYWORDS

Eucoilinae; *Hydrelliaeucoila*; new species; key to species; Ephydriidae

Introduction

Hydrelliaeucoila Díaz and Gallardo, 2009 (in Díaz et al. 2009) is an unusual genus of the subfamily Eucoilinae (Cynipoidea: Figitidae). The genus is only reported from Argentina, as a parasitoid of Ephydriidae (Diptera). However, the geographical range of distribution of the genus is probably extensive in the Neotropic (Díaz et al. 2009). *Hydrelliaeucoila* was tentatively placed in the tribe Ganaspini by Díaz et al. (2009) and Buffington et al. (2020), based on the following combination of characters: first flagellomere of male antennae modified (elongated and curved), second flagellomere cylindrical; mesosoma not much longer than high, without subalar pits; pronotal plate with lateral foveae open; mesoscutum without notauli; lateral depression of scutellum well defined, semicircular; wings rounded apically; mid- and hind coxae with a hairy patch dorsolateral and posterodorsal, respectively; hairy ring at base of syntergum very shortly interrupted dorsally. *Hydrelliaeucoila* shares only the absence of a glandular pit on the scutellar plate with *Fontaliella* Pujade-Villar (Pujade-Villar et al. 2013). *Hydrelliaeucoila* shares the presence of a short petiole and a ring of hairs at the base of the syntergum with the remaining genera of the tribe (Díaz et al. 2009).

The purpose of this contribution is to describe two new species of the genus, to provide a key for all known species and to update the known geographic distribution of *H. egeria* Díaz and Gallardo, 2009.

Materials and methods

Specimens of *Hydrelliaeucoila* studied here belong to the collections of the División Entomología of the Museo de La Plata (MLP), and other specimens were collected on crop squash of the type Butternut 'Anco' (*Cucurbita moschata* Duchesne ex Poir.). Specimens were compared with the holotype of *Hydrelliaeucoila egeria* deposited in MLP. Morphological terminology follows Gallardo et al. (2017) and Buffington (2009) for taxonomic characters and Harris (1979) for surface sculpture. Morphological terms used match the Hymenoptera Anatomy Ontology (Table 1) (HAO, Yoder et al. 2010). Biogeographical regions are in accordance with Morrone (2014) and Arana et al. (2017). The photographs were taken with a Leica model DFC295 digital camera adapted to a Leica stereomicroscope (S8APO) and with a scanning electron microscope (SEM FEI Quanta200) at the Laboratorio de Investigaciones de Metalurgia Física (LIMF) (UNLP). The examined specimens were deposited in the División Entomología (MLP).

Table 1. Terms from the Hymenoptera Anatomy ontology portal.

Term	Concept	URI	Preferred term
Antenna	The appendage that is composed of ringlike sclerites and the anatomical structures encircled by these sclerites and that is articulated with the cranium.	http://purl.obolibrary.org/obo/HAO_0000101	Antenna
Antennal club	The anatomical cluster that is composed of one or more enlarged flagellomeres.	http://purl.obolibrary.org/obo/HAO_0000208	Club
	The anatomical cluster composed of the apical flagellomeres that are differentiated by size from the basal flagellomeres.	http://purl.obolibrary.org/obo/HAO_0001185	Clava
Anteroventral cavity	The depression that is located anteroventrally on the vertical part of the metapectus.	http://purl.obolibrary.org/obo/HAO_0001163	Anteroventral cavity
Flagellomere	The annulus that is located distally of the pedicel.	http://purl.obolibrary.org/obo/HAO_0000342	Flagellomere
Malar sulcus	The sulcus that extends between the ventral margin of the compound eye and the base of the mandible.	http://purl.obolibrary.org/obo/HAO_0000504	Malar sulcus
Marginal cell	The wing membrane that is delimited by wing veins.	http://purl.obolibrary.org/obo/HAO_0001091	Wing cell
Mesosoma	The anatomical cluster that is composed of the prothorax, mesothorax and the metapectal-propodeal complex.	http://purl.obolibrary.org/obo/HAO_0000576	Mesosoma
Metasoma	The tagma that is connected anteriorly to the metapectal-propodeal complex at the propodeal foramen and consists of abdominal segments.	http://purl.obolibrary.org/obo/HAO_0000626	Metasoma
Glandular release pit	The depression that is located posteromedially on the mesoscutum.	http://purl.obolibrary.org/obo/HAO_0000637	Glandular release pit
	The area that is concave is located medially on the scutellar plate and corresponds to the opening of an exocrine gland.	http://purl.obolibrary.org/obo/HAO_0001678	Scutellar glandular release pit
Occiput	The area that is concave and surrounds the postocciput.	http://purl.obolibrary.org/obo/HAO_0000658	Occiput

(Continued)

Table 1. (Continued).

Term	Concept	URI	Preferred term
	The area that is located on the occiput ventrally of the occipital foramen.	http://purl.obolibrary.org/obo/HAO_0000776	Postgena
Parascutal impression	The groove that does not correspond to a ridge.	http://purl.obolibrary.org/obo/HAO_0000417	Parascutal impression
Parapsidal line	The anatomical structure that is linear.	http://purl.obolibrary.org/obo/HAO_0001586	Parapsidal line
Pronotal plate	The area of the pronotum that is median, raised and limited laterally by sharp edges.	http://purl.obolibrary.org/obo/HAO_0000838	Pronotal plate
Pronotum	The notum that is located in the prothorax.	http://purl.obolibrary.org/obo/HAO_0000853	Pronotum
Ridge	The process that is elongate and external.	http://purl.obolibrary.org/obo/HAO_0000188	Carina
Scutellar plate	The area that is located medially on the mesoscutellum, flat and surrounds the scutellar glandular release pit.	http://purl.obolibrary.org/obo/HAO_0001230	Scutellar plate
Scutellum	The scutellum that is located on the mesonotum.	http://purl.obolibrary.org/obo/HAO_0000574	Mesoscutellum
Subalar pit	The pit that is located posterodorsally on the mesopectus corresponds to the posterodorsal edge of the mesopleuron.	http://purl.obolibrary.org/obo/HAO_0000961	Subalar pit
Sulcus	The groove that corresponds to a ridge.	http://purl.obolibrary.org/obo/HAO_0000978	Sulcus
Syntergum	The sclerite that is composed of fused abdominal terga.	http://purl.obolibrary.org/obo/HAO_0000987	Syntergum
Venation	The anatomical cluster that is composed of abscissae.	http://purl.obolibrary.org/obo/HAO_0001096	Venation
Vertex	The area that is delimited by the intersection of the margin of the compound eyes, the interorbital plane, and the anatomical line that is tangential to the point on the margin of the anterior ocellus which defines the minimum distance between the anterior ocellus and the oral foramen.	http://purl.obolibrary.org/obo/HAO_0001077	Vertex
Wing	The appendage that is between the notum and the pectus and is connected to the body by the axillary sclerite muscles.	http://purl.obolibrary.org/obo/HAO_0001089	Wing

Results

Systematic treatment

Family **FIGITIDAE** Hartig 1840
 Subfamily **EUCOILINAE** Thomson, 1862
 Tribe **GANASPINI** Belizin 1961
Hydrelliaeucoila Díaz and Gallardo 2009

Type species*Hydrelliaeucoila egeria* Díaz and Gallardo, 2009

Diagnosis. This genus can be characterised by the following combination of features: Antenna of female filiform, without defined club, with last seven or eight flagellomeres with rhinaria. Mesosoma not much longer than high. Mesoscutum without notauli. Scutellar foveae sculptured at base. Dorsal surface of scutellum coarsely sculptured, can be reticulate-rugose, reticulate-areolate or areolate-rugose, never smooth or striated. Scutellar plate without glandular pit. Wings rounded apically, hairless towards the base of wing. Marginal cell of fore wing can be partially or completely open. Hairy ring at base of syntergum with a very short interruption dorsally.

Distribution. **Argentina. Buenos Aires.** Otamendi (Díaz et al. 2009), La Plata (new record) and Ensenada (new record). **Misiones.** Yacutinga (new record). According to the biogeographical scheme of Arana et al. (2017), this distribution range falls within the the Neotropical region, Chacoan subregion, Pampean province for Buenos Aires, and Parana Forest province, for Misiones.

Biology. *Hydrelliaeucoila egeria* is a pupal parasitoid of the leaf miner *Hydrellia egeriae* Rodrigues-Júnior, Mathis and Hauser (Diptera, Ephydriidae) (Cabrera Walsh and Mattioli, 2007, 2008; Díaz et al. 2009, Cabrera Walsh et al. 2013, Rodrigues Júnior et al. 2015).

Key to species of *Hydrelliaeucoila* Díaz and Gallardo

- 1- Lateral and inferior area of face striated (Figure 1b). Pronotal plate slightly striated (Figure 1d). Marginal cell of fore wing partially open..... *Hydrelliaeucoila egeria* Díaz and Gallardo
- Lateral and inferior area of face smooth. Pronotal plate smooth. Marginal cell of fore wing completely open 2
- 2- Head in frontal view with slightly dorso-ventral ridge adjacent to torulus (Figure 2d, arrow). Scutellar plate with a dark impression on the entire edge (Figure 2c, arrow).. *Hydrelliaeucoila rufa* Reche sp. nov.
- Head in frontal view without ridge adjacent to torulus (Figure 3e, arrow). Scutellar plate without a dark impression on the entire edge (Figure 3c) *Hydrelliaeucoila nonstriata* Reche sp. nov.

Hydrelliaeucoila egeria Díaz and Gallardo, 2009
(Figure 1)

Holotype

Female. ARGENTINA. Buenos Aires, Otamendi, -38.1122339S, -57.8456287W. January 2007, Cabrera coll., obtained from puparium of *Hydrellia* sp., on *Egeria densa* (MLP).

Paratypes. Females and males: same data as holotype: 15♀, January 2007; 68♀, 5♂, May 2008.

Additional material

ARGENTINA. Buenos Aires, La Plata, -34.9206797°S, -57.9537638W, 22 April 2015. Aquino and Gallardo colls. on crop squash type Butternut 'Anco', *Cucurbita moschata* Duchesne ex Poir (3♀ MLP). Misiones, Yacutinga, -27.4889S, -55.41109722W. 29 August 2006, Cabrera coll., obtained from puparium of *Hydrellia* sp. (3♀ MLP).

Diagnosis. This species can be characterised by the following features: Body length 1.40–1.80 mm. Head and mesosoma shiny black. Lateral and inferior area of face striated; in frontal view with strong dorso-ventral ridge adjacent to torulus. Female antenna with last seven or eight flagellomeres with rhinaria. Occiput smooth. Pronotal plate slightly striated. Inferior part of pronotum side slightly striated. Dorsal surface of scutellum (Figure 1b) coarsely sculptured, reticulate-rugose. Scutellar foveae (Figure 1b) at base slightly sculptured, oval, shorter than wide. Lateral bars of scutellum with foveae beneath. Scutellar plate (Figure 1c) without a dark impression on the entire edge. Middle and ventral part of mesopleuron, above mesopleural carina with few striations. Metapleuron slightly sculptured. Marginal cell of fore wing partially open (Díaz et al. 2009).

Description. In Díaz et al. 2009.

Biology. *Hydrelliaeucoila egeria* Díaz and Gallardo parasitises pupae of *Hydrellia egeriae*. These pupae are found fixed to the stems of *E. densa* at the leaf axils of the last leaf the fly larva fed on. The gravid female parasitoid lays an egg in the host pupa, and continues exploring the stem for more pupae. During the warm season, the parasitoid takes around one month to develop. Parasitoids that have not emerged by the end of fall diapause as larvae in the host puparium until the following spring. Laboratory observations reveal that the female parasitoid sometimes explores branches devoid of fly pupae, so apparently it selects *E. densa* branches at random, and not by detecting the presence of the host fly (Cabrera Walsh and Mattioli 2007, 2008; Díaz et al. 2009).

Distribution. (Figure 4). Argentina. Recorded from Otamendi (Díaz et al. 2009) and La Plata (new record), Buenos Aires province and Yacutinga (new record), Misiones province. This distribution belongs to the Pampean province for Buenos Aires and Parana Forest for Misiones (Chacoan subregion).

Comments. *Hydrelliaeucoila egeria* differs from the other two species known from Argentina by presenting the following combination of characters: head and mesosoma black (reddish brown in *H. rufa* sp. nov.; dark brown in *H. nonstriata* sp. nov.); lateral and inferior area of face striated (smooth in *H. rufa* sp. nov. and *H. nonstriata* sp. nov.); head in frontal view with ridge adjacent to torulus (absent in *H. nonstriata*); medial bridge of pronotal plate broad (narrow in *H. rufa* sp. nov. and *H. nonstriata* sp. nov.); without a dark impression on the entire edge of scutellar plate (with a dark impression on the entire edge in *H. rufa* sp. nov.).

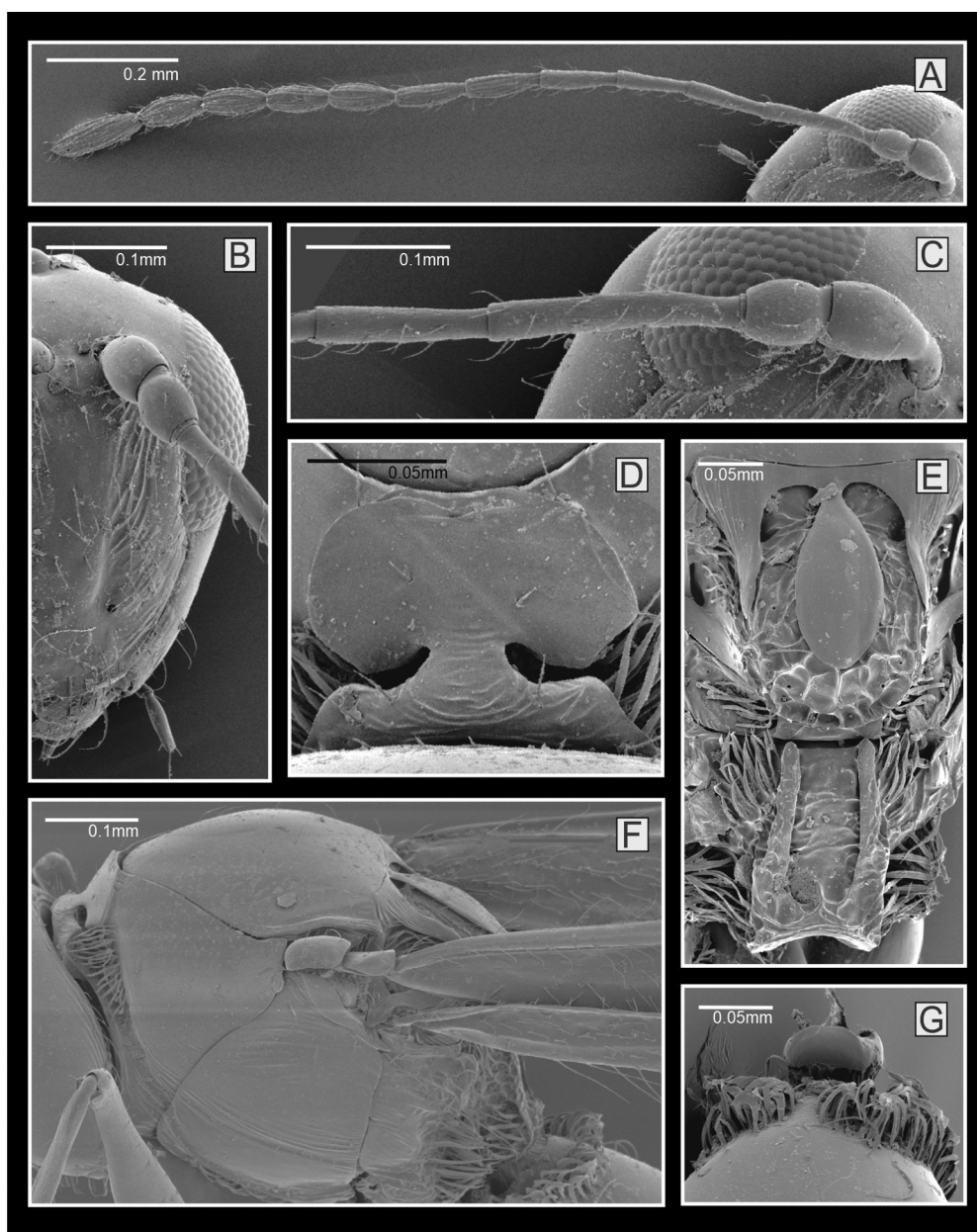


Figure 1. *Hydrelliaeucoila egeria* Díaz and Gallardo. A. Antenna of female. B. Head in frontal view. C. Antenna of female. D. Pronotal plate. E. Scutellum and propodeum. F. Mesosoma in lateral view. G. Base of metasoma. (Modified from Díaz et al. 2009.)

***Hydrelliaeucoila rufa* Reche sp. nov.**

urn:lsid:zoobank.org:act:FD3C3F03-EB27-49EB-A828-C2858C33378A

(Figure 2)

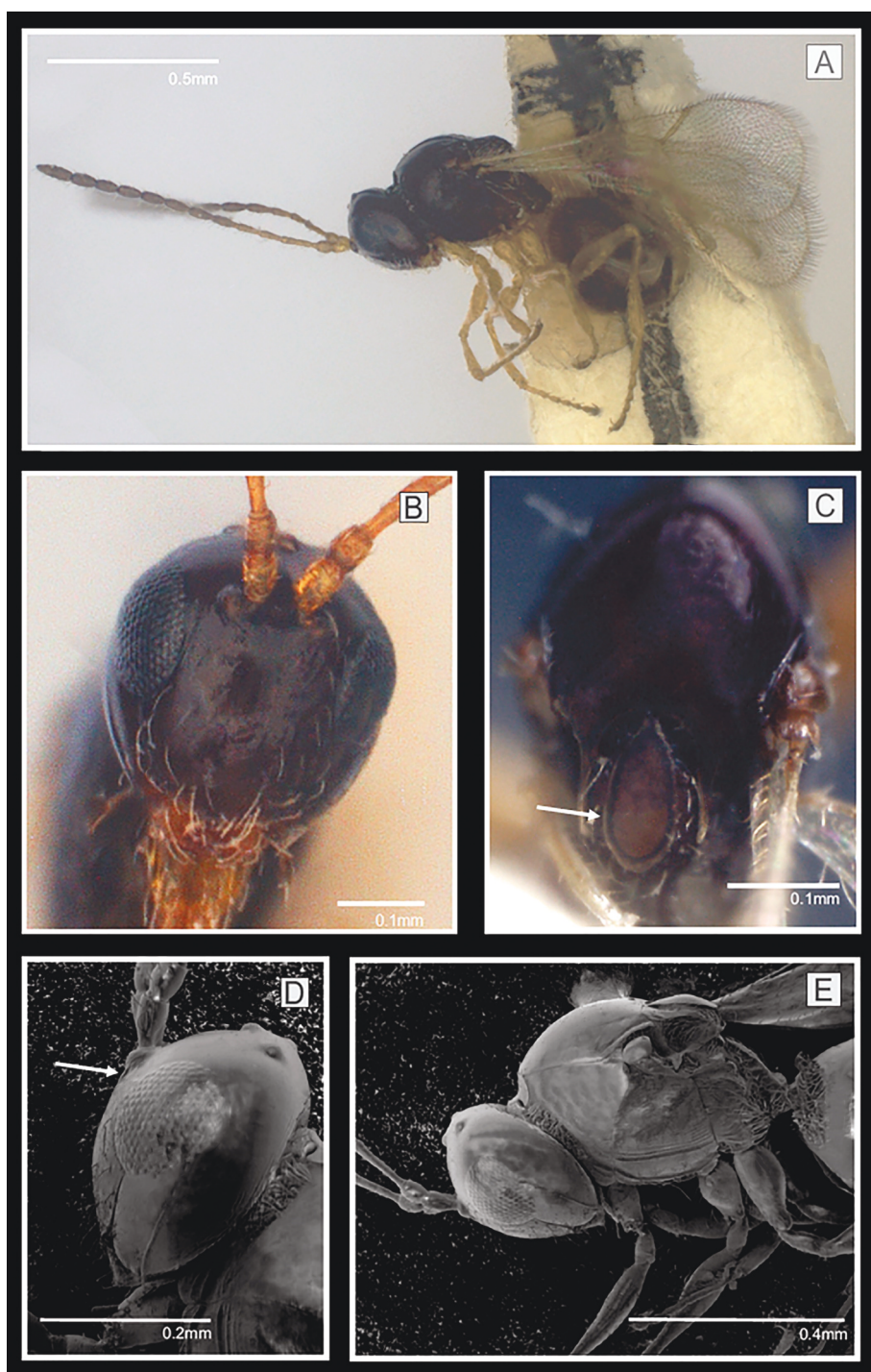


Figure 2. *Hydrelliaeucoila rufa* Reche sp. nov. A- Habitus; B- Head in frontal view; C- Mesosoma and scutellum in dorsal view, arrow indicates dark impression on the entire edge. D- Head in lateral view, arrow indicated slightly dorso-ventral ridge adjacent to torulus. E- Head and mesosoma in lateral view.

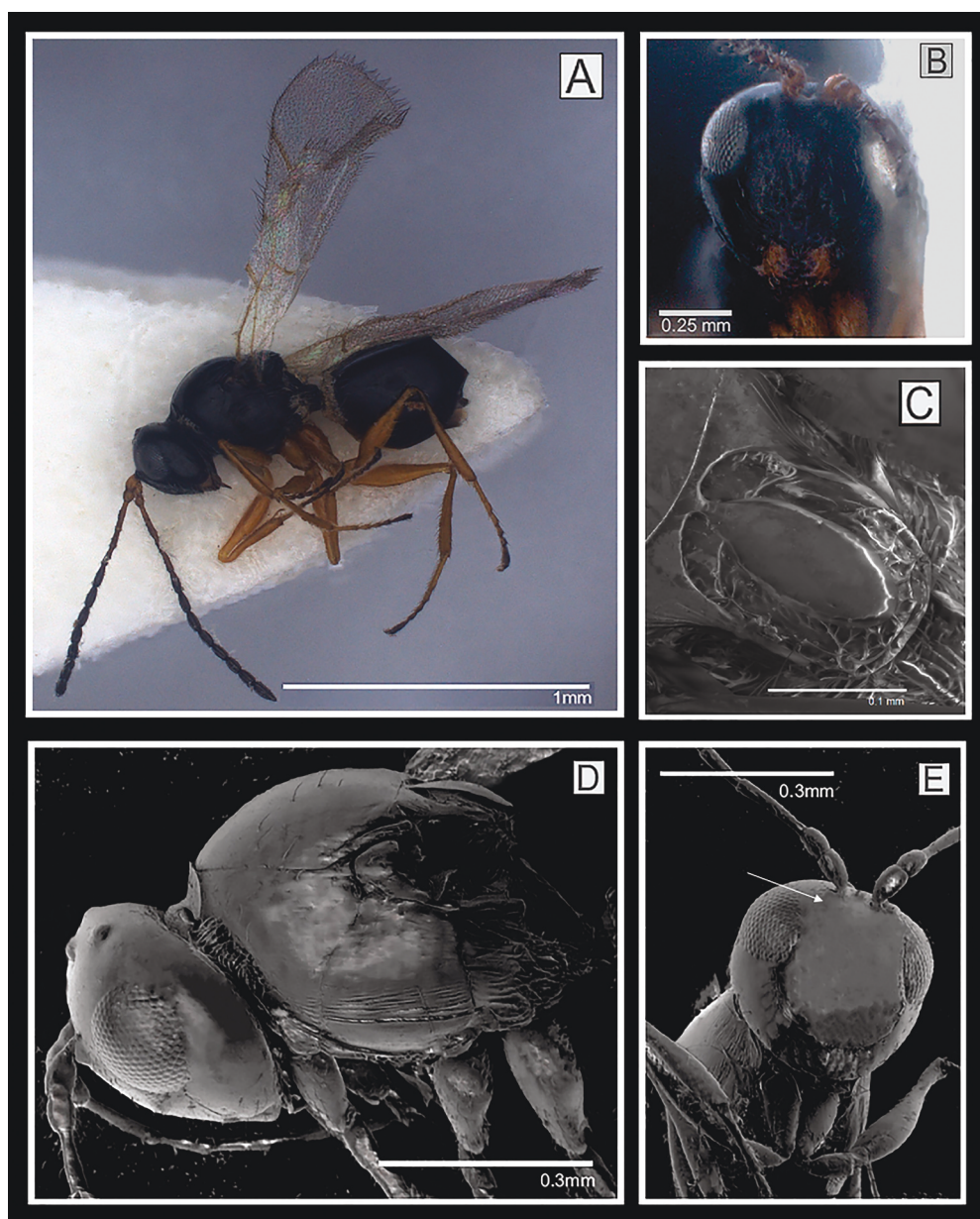


Figure 3. *Hydrelliaeucoila nonstriata* Reche sp. nov. A- Habitus. B- Head in frontal view. C- Scutellar plate in dorsal view. D- Head and mesosoma in lateral view. E- Head in frontal view, arrow indicates torulus smooth.

Holotype

Female. ARGENTINA. Buenos Aires, Buenos Aires, -34.5997222S, -58.3819444W. 15 September 1912, A. Zotta coll. (MLP).

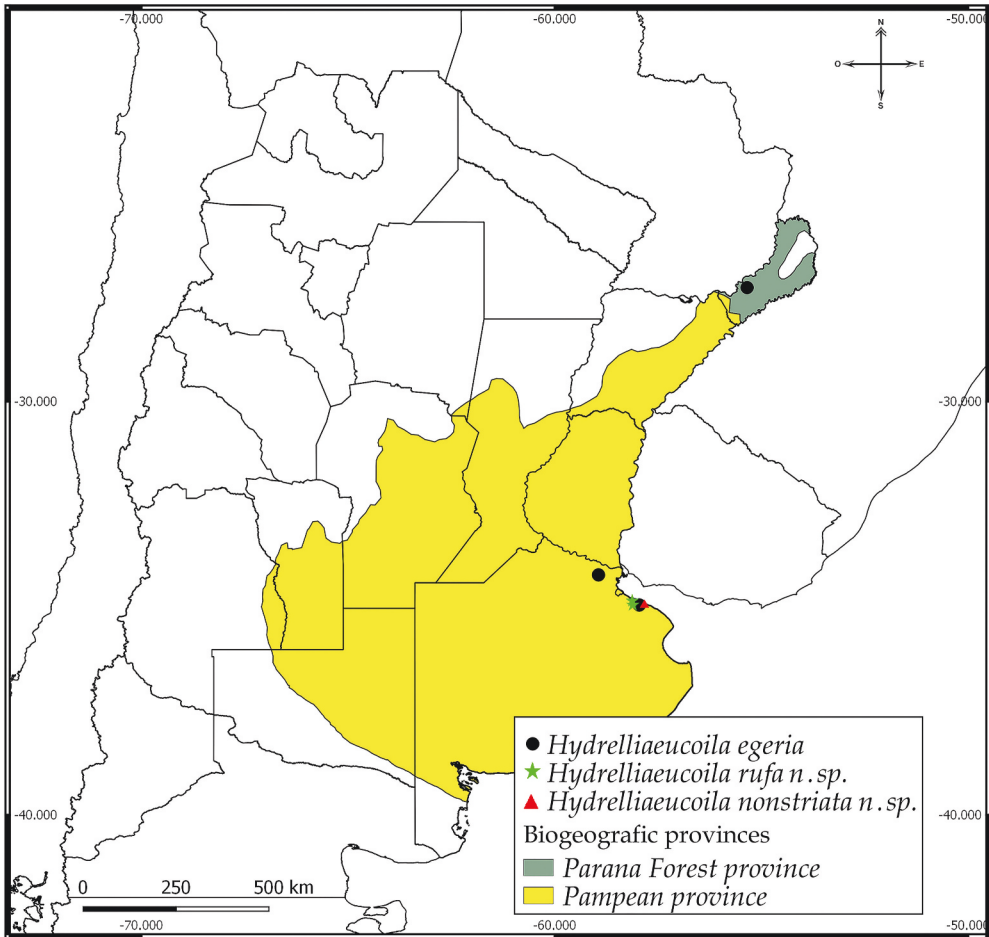


Figure 4. Distribution map of *Hydrelliaeucoila* species from Argentina.

Paratypes

(2 females): ARGENTINA. Buenos Aires, Punta Lara, -34.8206566S, -57.9675322W. 5 April 1974, Samsone Llanos coll. (MLP).

Description

Female (Figure 2a). Body length 1.30 mm, sparsely setose. Head, mesosoma and metasoma reddish brown. Antenna, mandibles, wing venation and legs yellowish brown.

Head (Figure 2b). Lateral and inferior area of face smooth, scattered setose; in frontal view with slightly dorso-ventral ridge adjacent to torulus. Malar sulci simple. Antenna with 13 articles, filiform; F1 twice longer than F2; F2–F11 subequal in length; F4–F11 with rhinaria. Compound eyes glabrous. Occiput striated. Vertex smooth. *Pronotum*. Pronotal

plate smooth. Medial bridge of pronotal plate narrow, with lateral foveae open and deep. Dorsal margin of pronotal plate straight. Pronotal carina absent. Sides of pronotum slightly striated and highly setose behind genae.

Mesoscutum (Figure 2a,c). In lateral view as long as wide; smooth and shining. Notauli absent. Parapsidal hair line present. Parascutal impression inconspicuous.

Mesoscutellum. Scutellar foveae at base sculptured, longer than broad. Lateral bars of scutellum striated with a small fovea beneath. Dorsal surface of scutellum (Figure 2c) weakly sculptured, reticulate-areolate; posterior margin round. Scutellar plate (Figure 2c) flat and smooth, not elevated above the scutellum, drop-shaped, covers 1/2 of scutellum in dorsal view; surface smooth without glandular pit; with a dark impression on the entire edge of scutellar plate.

Mesopectum. Mesopleuron striated; with mesopleural carina and precoxal carina conspicuous, without subalar pit.

Metapectal-propodeal complex. Metapleuron slightly striated; anteroventral cavity conspicuous; posterior margin raised and hairy. Propodeum elongate, setose except on the carinae; lateral propodeal carinae subparallel.

Wings. Fore wings highly setose, hyaline, apical margin with hair fringes quite long. Hairless towards the base of wing. Marginal cell (Figure 2a) completely open, elongate, three times longer than broad

Legs. Mid- and hind coxae with a patch of hairs dorsolateral and posterodorsal, respectively.

Metasoma (Figure 2a). Smooth and shining. Hairy ring at base of syntergum complete, woolly, with a weak row of long setae on each side posteriorly; distally smooth.

Variation. Body length 1.20–1.50 mm. Marginal cell twice or three times as long as wide. Hairy ring at base of syntergum complete or incomplete dorsally.

Male. Unknown.

Etymology. In reference to the colouring of the body.

Biology. Host unknown.

Distribution. (Figure 4). Argentina. It is known only from Ensenada, Buenos Aires province. This distribution belongs to the Pampean province (Chacoan subregion).

Comments. *Hydrelliaeucoila rufa* sp. nov. differs from the other two species known from Argentina by presenting the following combination of characters: head and mesosoma reddish brown (black in *H. egeria*; dark brown in *H. nonstriata* sp. nov.);

lateral and inferior area of face smooth (striated in *H. egeria*); head in frontal view with carina adjacent to torulus (absent in *H. nonstriata* sp. nov.); medial bridge of pronotal plate narrow (broad in *H. egeria*); with a dark impression on the entire edge of scutellar plate (without a dark impression on the entire edge in *H. egeria* and *H. nonstriata* sp. nov.).

***Hydrelliaeucoila nonstriata* Reche sp. nov.**

urn:lsid:zoobank.org:act:E345765A-BFD7-4DD9-AA66-64FAB8F20FA9

(Figure 3)

Holotype

Female. ARGENTINA. Buenos Aires, La Plata, -34.9206797°S, -57.9537638W. 22 April 2015, Aquino and Gallardo colls., on crop squash type Butternut 'Anco' (*Cucurbita moschata* Duchesne ex Poir) (MLP).

Paratypes

(6 females): same data as holotype, (MLP).

Description

Female (Figure 3a). Body length 1.10 mm, sparsely setose. Head, mesosoma and metasoma dark brown. Antenna, mandibles, wing venation and legs yellowish brown.

Head (Figure 3b). Lateral and inferior area of face smooth, densely setose; in frontal view without ridge adjacent to torulus. Malar sulci simple. Occiput striated. Vertex smooth. Antenna with 13 articles, filiform; F1 longer than F2; F2–F11 subequal in length; F4–F11 with rhinaria. Compound eyes glabrous. **Pronotum.** Pronotal plate smooth. Medial bridge of pronotal plate narrow, with lateral foveae open and deep. Dorsal margin of pronotal plate slightly emarginated. Pronotal carina absent. Sides of pronotum slightly striated and sparsely setose behind genae.

Mesoscutum (Figure 3a,c). Smooth and shining. Notauli absent. Parapsidal hair line present. Parascutal impression conspicuous.

Mesoscutellum. Scutellar foveae at base sculptured, broader than long. Lateral bars of scutellum smooth with a fovea beneath. Dorsal surface of scutellum (Figure 3c) sculptured, areolate-rugose; posterior margin round. Scutellar plate (Figure 3c) flat and smooth, not elevated above the scutellum, drop-shaped, covers 1/2 of scutellum in dorsal view; surface smooth without glandular pit; without a dark impression on the entire edge of scutellar plate.

Mesopectum. Mesopleuron slightly striated; with mesopleural carina and precoxal carina conspicuous, without subalar pit.

Metapectal-propodeal complex. Metapleuron strongly striated; anteroventral cavity conspicuous; posterior margin raised and hairy. Propodeum elongate, setose with sparse hairs between the carinae; lateral propodeal carinae subparallel.

Wings. Fore wings highly setose, hyaline, apical marginal with hair fringes quite long. Hairless towards the base of wing. Marginal cell (Figure 3a) completely open, elongate, twice times as long as wide.

Legs. Mid- and hind coxae with a patch of hairs dorsolateral and posterodorsal, respectively.

Metasoma (Figure 3a)

Smooth and shining. Hairy ring at base of syntergum complete dorsally, with a weak row of long setae on each side posteriorly; distally smooth.

Variation: Body length 1.10–1.50 mm. Marginal cell twice or three times as long as wide.

Male. Unknown.

Etymology. In reference to weak striation of head, sides of pronotum and mesopleura.

Biology. Host unknown. Obtained on crop squash type Butternut 'Anco' (*Cucurbita moschata*).

Distribution. (Figure 4). Argentina. It is known only from La Plata, Buenos Aires province. This distribution belongs to Pampean province (Chacoan subregion).

Comments. *Hydrelliaeucoila nonstriata* sp. nov. differs from the other two species known from Argentina by presenting the following combination of characters: head and mesosoma dark brown (black in *H. egeria*; reddish brown in *H. rufa* sp. nov.); lateral and inferior area of face smooth (striated in *H. egeria*); head in frontal view without ridge adjacent to torulus (present in *H. egeria* and *H. rufa* sp. nov.); medial bridge of pronotal plate narrow (broad in *H. egeria*); without a dark impression on the entire edge of scutellar plate (with a dark impression on the entire edge in *H. rufa* sp. nov.).

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Disclosure statement

No potential conflict of interest was reported by the authors.

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References

- Arana MD, Martínez GA, Oggero AJ, Natale ES, Morrone JJ. 2017. Map and shapefile of the biogeographic provinces of Argentina. *Zootaxa*. 4341(3):420–422.
- Buffington ML. 2009. Description, circumscription and phylogenetics of the New Tribe zaeucoilini (Hymenoptera: Figitidae: Eucoilinae), including a description of a new genus. *Syst Entomol*. 34 (1):162–187. doi:[10.1111/j.1365-3113.2008.00447.x](https://doi.org/10.1111/j.1365-3113.2008.00447.x).
- Buffington ML, Forshage M, Liljeblang J, Tang C, Van Noort S. 2020. World cynipoidea (Hymenoptera): a key to higher-level groups. *Insect Syst Diversity*. 4(4):1; 1–69.
- Cabrera Walsh G, Dalto YM, Mattioli FM, Carruthers RI, Anderson LW. 2013. Biology and ecology of Brazilian elodea (*Egeria densa*) and its specific herbivore, *Hydrellia* sp. in Argentina. *BioControl*. 58:133–147.
- Cabrera Walsh G, Mattioli F. 2007. Brazilian waterweed. <http://www.usda-sabcl.org>.
- Cabrera Walsh G, Mattioli F. 2008. Brazilian waterweed. <http://www.usda-sabcl.org>.
- Díaz NB, Gallardo FE, Gaddi AL, Cabrera Walsh G. 2009. Description of a new genus and species of Eucoilinae (Hymenoptera: Cynipoidea: Figitidae) parasitoid of ephydriidae (Diptera). *Ann Entomol Soc Am*. 104(4):603–607.
- Gallardo FE, Reche VA, Bertolaccini I, Zarate B, Curis C. 2017. A new genus and species of Eucoilinae (Hymenoptera, Cynipoidea, Figitidae) parasitoid of *Euxesta eluta* Loew (Diptera, Otitidae) attacked *Bt* sweet corn in Argentina. *J Hymen Res*. 54:57–70. doi:[10.3897/jhr.54.10096](https://doi.org/10.3897/jhr.54.10096)
- Harris R. 1979. A Glossary of Surface Sculpturing. *Occasional Pap Entomol*. 28:31.
- Morrone JJ. 2014. Biogeographical regionalisation of the Neotropical region. *Zootaxa*. 3782:1–110.
- Pujade-Villar J, Díaz NB, Gallardo F. 2013. Description of a new genus and species of Eucoilinae (Hymenoptera: Cynipoidea: Figitidae) from Colombia. *Zootaxa*. 3626(3):356–362.
- QGIS Development Team. 2015. *QGIS Geographic Information System*. Open Source Geospatial Foundation Project. Available from URL: <http://qgis.osgeo.org>
- Rodrigues Júnior FD, Mathis WN, Hauser M. 2015. Argentine *Hydrellia* Robineau-Desvoidy (Diptera, Ephydriidae): new species and key to identification. *Zootaxa*. 3957(1):131–136.
- Yoder MJ, Mikó I, Seltsmann KC, Bertone MA, Deans AR. 2010. A gross anatomy ontology for hymenoptera. *PLoS ONE*. 5(12):e15991. doi:[10.1371/journal.pone.0015991](https://doi.org/10.1371/journal.pone.0015991).