

Discovery of the first species of *Ampulicomorpha* Ashmead (Hymenoptera: Embolemidae) in French Guiana

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ABSTRACT

A new species, *Ampulicomorpha poirieri* n. sp., is described from French Guiana. It is the first species of *Ampulicomorpha* found in this country. An amended key to the females of the Neotropical species of *Ampulicomorpha* is provided. *Embolemus apertus* Azevedo & Amarante, 2006, is transferred to the genus *Ampulicomorpha* (n. comb.).

KEYWORDS: Chrysidoidea, Hymenoptera, Embolemidae, *Ampulicomorpha*, Neotropics, identification key, new species, new combination, parasitoids, Auchenorrhyncha.

RÉSUMÉ

Une nouvelle espèce, *Ampulicomorpha poirieri* n. esp., est décrite de Guyane française. La clé des femelles des espèces Neotropicales de *Ampulicomorpha* est changée. *Embolemus apertus* Azevedo & Amarante, 2006, est transféré dans le genre *Ampulicomorpha* (n. comb.).

MOTS-CLÉS: Chrysidoidea, Hymenoptera, Embolemidae, *Ampulicomorpha*, région Neotropicale, clé d'identification, nouvelle espèce, nouvelle combinaison, parasitoïdes, Auchenorrhyncha.

INTRODUCTION

Embolemidae (Hymenoptera: Chrysidoidea) are parasitoids of planthoppers (Hemiptera: Auchenorrhyncha) (Olm 1996, 1997; Varrone & Olmi 2012; Olmi *et al.* 2014c). The family currently includes the following three extant genera: *Ampulicomorpha* Ashmead, 1893, *Embolemus* Westwood, 1833 and *Trogloembolemus* Olmi, Mita & Guglielmino, 2014b. According to Van Achterberg and van Kats (2000), *Ampulicomorpha* and *Embolemus* are synonyms, because of the impossibility to separate the males. However, according to Olmi *et al.* (2014a, c), the two genera demonstrate different biologies, so their synonymy cannot be confirmed.

The biology of the Embolemidae is insufficiently known. *Embolemus* species are parasitoids of nymphs of Cixiidae living in the soil and feeding on roots (Varrone & Olmi 2012). *Ampulicomorpha* species are parasitoids of nymphs of Achilidae living in rotten logs and feeding on hyphal sheets of shelf fungi (Bridwell 1958; Wharton 1989; Guglielmino & Bückle 2013).

In 2018, the authors received on loan for identification a female specimen of *Ampulicomorpha* collected in French Guiana. We have determined that it represents a new species, described below.

MATERIALS AND METHODS

The description follows the morphological terminology of Olmi (1996). The measurements reported are relative, except for the total length from the head to the metasomal tip, without the antennae. Antennal proportions refer to the length ratios of the relevant segments, with values rounded to the nearest whole number. The following abbreviations are used: POL – distance between the inner edges of the two lateral ocelli, OL – shortest distance between the edge of a lateral ocellus and the median ocellus, OOL – distance from the outer edge of a lateral ocellus to the compound eye, OPL – distance from the posterior edge of a lateral ocellus to the occipital carina, TL – distance from the posterior edge of the eye to the occipital carina.

The term “metapectal-propodeal complex” is used here in the sense of Kawada *et al.* (2015). It corresponds to the term “propodeum” *sensu* Olmi (1996).

The types of all Neotropical species of *Ampulicomorpha* had been previously examined by the authors.

The specimens studied in this paper are deposited in the following collections:

CNC – Canadian National Collection of Insects, Ottawa, Canada;

MNHN – Museum National d’Histoire Naturelle, Paris, France;

NHMUK – Natural History Museum, London, UK.

TAXONOMY

Genus *Ampulicomorpha* Ashmead, 1893

Ampulicomorpha poirieri n. sp.

(Figs 1–5)

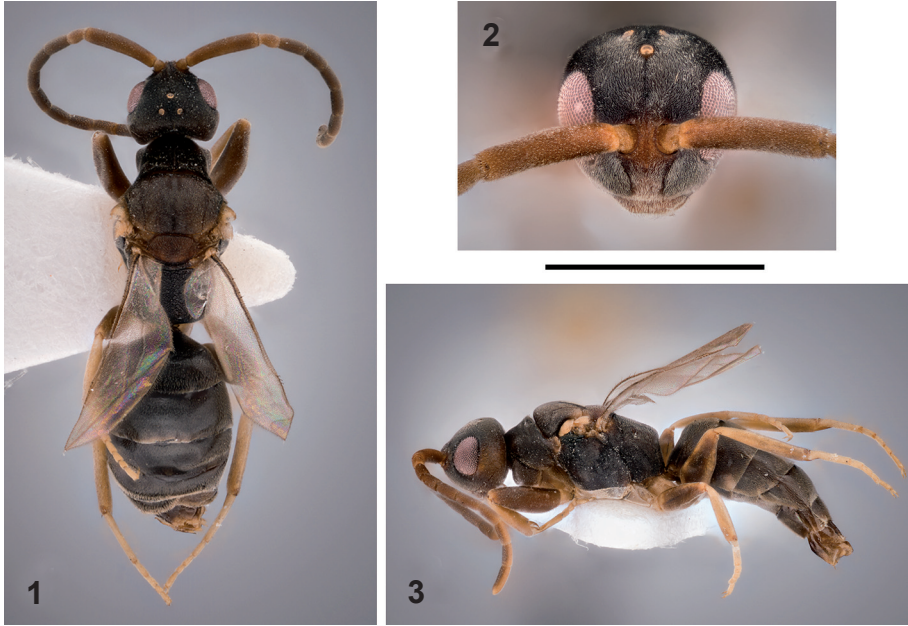
LSID: urn:lsid:zoobank.org:act:BF9F299B-5536-4407-B36C-3E44C122B694.

Etymology: The new species is named after one of the two collectors, Mr Eddy Poirier.

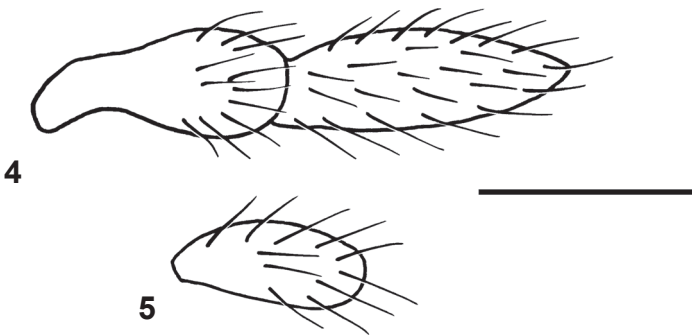
Diagnosis: Female of *Ampulicomorpha* with head subspheroidal, not pyriform (Fig. 1), palpal formula 2/1 (Figs 4, 5), OOL less than twice as long as OPL (Fig. 1); metapectal-propodeal complex dull, rugose, without transverse or longitudinal keels (Fig. 1).

Description: Female (Figs 1–3). Probably macropterous (only tegulae and humeral plates of both forewings present; rest of forewings missing); hind wings complete (Fig. 1). Length 4.1 mm. Brown, except antenna brown-testaceous and tibiae and tarsi testaceous. Antenna geniculate, not thickened distally, articulated to two frontal contiguous processes; antennomeres in following proportions: 27:8:11:10:10:10:9:9:9:12. Head (Fig. 1) subspheroidal, not pyriform, dull, granu-

late, unsetose; occipital carina complete; genal carina absent; POL=4, OL=5, OOL=8, OPL=5, TL=9; greatest breadth of lateral ocellus shorter than POL (2:4); frontal line absent; face with two conical contiguous processes, on which antennae



Figs 1–3: Female holotype of *Ampulicomorpha poirieri* n. sp., habitus in dorsal (1) and lateral (3) views, and head in frontal view (2). Scale bar = 1.89 mm for Fig. 1, 0.94 mm for Fig. 2, 2.11 mm for Fig. 3.



Figs 4, 5: Female holotype of *Ampulicomorpha poirieri* n. sp., maxillary (4) and labial (5) palpus. Scale bar = 0.08 mm for Fig. 4, 0.008 mm for Fig. 5.

are articulated; frons with complete narrow median longitudinal furrow from anterior ocellus to area between antennal toruli (where there is a keel in the place of a furrow); frontal area between clypeus and conical processes with two almost parallel furrows directed from upper margin of clypeus to conical processes; clypeus with margins rounded; subocular sulcus absent; eye large; head about twice as long as eye (26:13). Palpal formula 2/1 (Figs 4, 5). Pronotum dull, granulate, covered with fine short setae, not crossed by strong transverse impression. Posterior half of pronotum with strong median incomplete longitudinal furrow (Fig. 1). Pronotal tubercles reaching tegulae. Pronotum shorter than mesoscutum (13:23). Mesoscutum and mesoscutellum dull, granulate, covered with fine short setae. Notauli absent. Metanotum short, rugose, transverse. Metapectal-propodeal complex dull, rugose, without transverse or longitudinal keels. Mesopleuron and metapleuron dull, granulate. Forewings missing (only tegulae and humeral plates present (Figs 1, 3)). Hind wings complete, hyaline (Figs 1, 3). Petiole very short, almost absent. Tibial spurs 1/2/2.

Male. Unknown.

Holotype: ♀ **French Guiana:** Saint-Laurent-du-Maroni, Maripasoula, Crique Alama/borne 1, 2°14'01.9"N 54°27'0.4"W, 14.iii.2015, APA-973-1, Malaise trap, MTK SLAM, E. Poirier & P.H. Dalens (MNHN).

Hosts: Unknown.

Ampulicomorpha aperta (Azevedo & Amarante, 2006), **n. comb.**

Embolemus apertus Azevedo & Amarante, 2006: 124, figs 1–3.

Ampulicomorpha costaricana: Olmi 1999: 7 (misidentification of female).

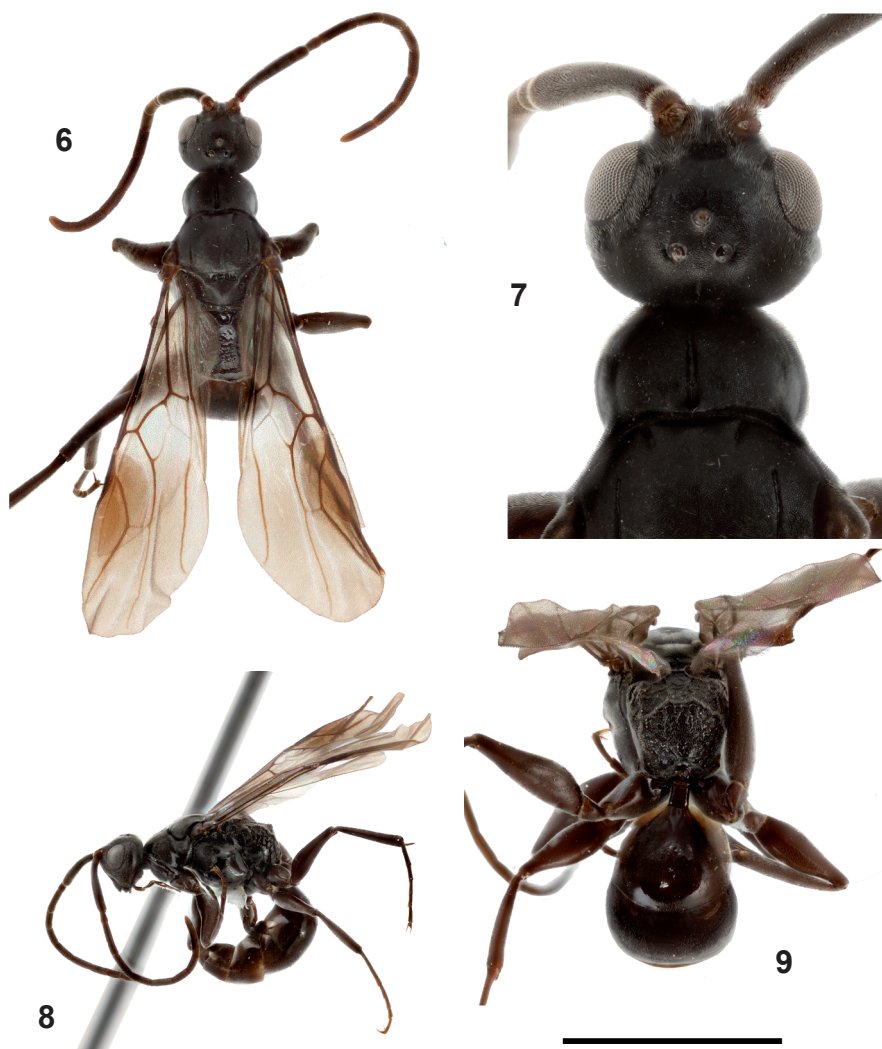
Material examined: Costa Rica: 1 ♀, San José Prov., Zurqui de Moravia [10°03'N 84°01'W], 1600 m, vii.1991, Paul Hanson (NHMUK).

DISCUSSION

Both forewings of the holotype are missing (only tegulae and humeral plates of both forewings are present). However, we believe that this species is macropterous, because the hind wings are complete and as long as in macropterous specimens of *Ampulicomorpha* (Figs 1, 3). Brachypterous specimens of Embolemidae are also known (in the genus *Embolemus*), but in this case not only the forewings are shortened, but also the hind wings (Olmi 1996).

In the Neotropical region, the following seven species of *Ampulicomorpha* are known: *A. aperta* (Azevedo & Amarante, 2006), from Brazil, present also in Costa Rica (new record); *A. costaricana* Olmi, 1999, from Costa Rica; *A. gilli* Olmi, 1997, from Venezuela; *A. poirieri* n. sp., from French Guiana; *A. suavis* Olmi, 1997, from Costa Rica; *A. schajovskoyi* De Santis & Vidal Sarmiento, 1977, from Argentina and Brazil; and *A. wilkersoni* Olmi, 1997, from Colombia.

Because of the characters indicated in the above diagnosis, *A. poirieri* is similar to *A. suavis*, from Costa Rica (holotype in CNC, Figs 6–9). The main difference regards the palpal formula (2/1 in *A. poirieri*, 6/3 in *A. suavis*) and the sculpture of



Figs 6–9: Female holotype of *Ampulicomorpha suavis* Olmi, habitus in dorsal (6) and lateral (8) view, head and pronotum in dorsal view (7), metapectal-propodeal complex in dorsal view (9). Scale bar = 1.50 mm for Fig. 6, 0.50 mm for Fig. 7, 2.10 mm for Fig. 8, 0.80 mm for Fig. 9.

the metapectal-propodeal complex disc (without longitudinal keels in *A. poirieri* (Fig. 1), while with two median longitudinal keels in *A. suavis* (Fig. 6)). Following the description of the above new species, the keys to the females of the Neotropical *Ampulicomorpha* presented by Olmi (1999) and Azevedo & Amarante (2006) should be modified as follows:

- 1 Head not pyriform (Fig. 1), with OOL as long as OPL (Fig. 1), or less than twice as long as OPL; palpal formula 2/1 or 6/3..... 2
 – Head pyriform (Azevedo & Amarante 2006: fig. 2), with OOL more than twice as long as OPL (Azevedo & Amarante 2006: fig. 2); palpal formula 4/2 or 5/2 3
- 2 Disc of metapectal-propodeal complex with two median longitudinal keels forming a square basal areola near metanotum (Fig. 6); palpal formula 6/3
 *suavis* Olmi
 – Disc of metapectal-propodeal complex without longitudinal keels (Fig. 1); palpal formula 2/1 (Figs 4, 5)..... *poirieri* n. sp.
- 3 Metapectal-propodeal disc with two almost obsolete median longitudinal keels
 *gilli* Olmi
 – Metapectal-propodeal disc with two distinct median longitudinal keels (Azevedo & Amarante 2006: fig. 2) *aperta* (Azevedo & Amarante), n. comb.

The females of *A. schajovskoyi*, *A. costaricana* and *A. wilkersoni* are unknown. A female described by Olmi (1999) was attributed erroneously to *A. costaricana*; now it is attributed to *A. aperta* (see above). Azevedo and Amarante (2006), following Van Achterberg and van Kats (2000), considered *Ampulicomorpha* and *Embolemus* synonyms, so that all species of Embolemidae treated by them were considered as belonging to *Embolemus*. We follow Olmi *et al.* (2014a, c) and consider the two above genera as separate, so that *Embolemus apertus* Azevedo & Amarante becomes *Ampulicomorpha aperta* (Azevedo & Amarante), n. comb.

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