

## TWO NEW BOMBYLIID SPECIES FROM SPAIN (DIPTERA, BOMBYLIIDAE)

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**Abstract:** Two new bombyliid species, *Geron etamorphia* sp. n. and *Parageron additivaneura* sp. n., are described and illustrated. They were collected in southern Spain, in an arid dry zone, by means of Moericke and pitfall traps placed in different types of vegetation.

**Key words:** Diptera, Bombyliidae, *Geron*, *Parageron*, new species, Spain.

### Dos especies nuevas de bombílidos de España (Diptera, Bombyliidae)

**Resumen:** Se describen e ilustran dos especies nuevas de bombílidos, *Geron etamorphia* sp. n. y *Parageron additivaneura* sp. n. Fueron capturadas en el sur de España mediante trampas Moericke y de caída colocadas en diferentes tipos de vegetación en una zona árida y seca.

**Palabras clave:** Diptera, Bombyliidae, *Geron*, *Parageron*, especies nuevas, España.

### Taxonomy/Taxonomía:

*Geron etamorphia* sp.n.

*Parageron additivaneura* sp.n.

### Introduction

Recently, Carles-Tolrá & Aguirre-Segura, 2007 published a list of dipterans collected in the Cabo de Gata-Níjar Natural Park in southern Spain. Nevertheless, the specimens of the family Bombyliidae were excluded so as to be included later in a more general paper on the Iberian Peninsula whose results were published soon after in Carles-Tolrá, 2008. Nevertheless, again, some few specimens of the genera *Geron* Meigen (1820) and *Parageron* Paramonov (1929) were excluded, as they could belong, very probably, to two new species. Now, after having confirmed that they effectively belong to two new species, they are described below.

Following the key to genera in Greathead & Evenhuis (1997) both genera can be identified by the following combination of characters:

a) *Geron*: postcranium flat, without a concavity surrounding the single occipital foramen; vein  $R_{4+5}$  branched and vein  $M_2$  absent; palpi with one segment; flagellum not excavated; pronotum without macrochetæ; proboscis longer than head; metasternum normal, not well-developed, mid and hind coxæ not separated. It is a worldwide genus with 140 species, but only 10 are known to occur in Europe (Evenhuis & Greathead, 1999).

b) *Parageron*: postcranium flat, without a concavity surrounding the single occipital foramen; vein  $R_{4+5}$  branched and vein  $M_2$  absent; palpi with one segment; flagellum with a subapical sulcus containing a stylus and without a second flagellomere; gena and oral margin broad. It is mainly a Palaearctic genus with 17 species described, 4 of them have been recorded from Europe (Evenhuis & Greathead, 1999).

Regarding Spain, only 6 *Geron* and 3 *Parageron* species have been recorded from this country (Carles-Tolrá Hjorth-Andersen, 2002). With the two new species described below, these numbers are increased to 7 and 4 respectively.

### Taxonomy

#### *Geron etamorphia* sp.n.

Fig. 1-7.

**DESCRIPTION:** A brown species with white pilosity (Fig. 1).

**Female.** Head dark brown, with long white hairs on face, frons, gena and occiput. Scales absent. Gena concolours with face. Proboscis long, three times the height of the head. Antenna (Fig. 2) dark brown, as long as the length of the head, with white hairs; scape with long white hairs, pedicel subspherical, flagellum long, pointed. Palpus brownish, very narrow, lineal, with minute hairs.

Thorax dark brown. Postpronotum with long white hairs. Mesonotum with short white hairs, anterior ones longer. Propleuron, anepisternum and katepisternum with long white hairs. Legs brown, femora darker and with long white hairs. Wing (Fig. 3) clear, transparent, with brownish veins. Haltere white.

Abdomen brown to dark brown, with short white hairs. Tergites laterally with long white hairs. Posterolateral process of tergite 8 (Fig. 4-5) distinctly long and with long white hairs. Sternite 8 (Fig. 6) brown, slightly convergent posteriorly, distinctly lighter in the middle, so it seems it is divided into two sclerites.

Genitalia: furca H-shaped (Fig. 7), subgenital plate (Fig. 7) brown, with 5 sclerotized plates: the two anterior ones small and L-shaped, the two posterolateral ones subquadrate, and the mid posterior one very sclerotized, very dark, blackish. Cerci (Fig. 7) short, pointed, with short hairs.

Total body length: 3.9-4.6 mm

**Male** unknown.

**TYPE MATERIAL: Holotype** female: SPAIN: Almería: Parque Natural Cabo de Gata -Níjar: Albergue "Las Amoladeras", 13.iv.2004, collected with Moericke trap placed in a thyme field mixed with *Agave* sp., A. Aguirre leg.

**Paratypes:** 2 females with same data as holotype and another female with same data but 26.iv.2004. Type material preserved in alcohol (70°) and deposited in the private collection of the author.

One paratype abdomen detached, and cleared with KOH (10%). Genital parts dissected and stored in its own abdomen and this stored in a microvial with alcohol (70°).

**DISCUSSION:** according to the shape of the subgenital plate, *Geron etamorpha* sp.n. is related to *Geron krymensis* Paramonov, 1929, as they are similar, but clearly different (cf. Evenhuis and Greathead, 1999: Fig. 6; Theodor, 1983: Fig. 85). Furthermore, *Geron krymensis* is bigger (circa 7 mm), the female has brown or black antennal hairs (Greathead, 2001) and the posterolateral process of tergite 8 is distinctly shorter (cf. Theodor, 1983: Fig. 86).

**BIOLOGY:** unknown. All the specimens were collected in an arid and dry zone by means of a Moericke trap placed in a thyme field mixed with *Agave* sp.

**DISTRIBUTION:** hitherto only known from southern Spain.

**ETYMOLOGY:** the specific name refers to the H-shaped (capital h) furca (eta = "letter h" in Greek; morpha = "form" in Greek).

#### *Parageron additivaneura* sp.n.

Fig. 8-20.

**DESCRIPTION:** A brown species with white pilosity and spotted wings (Fig. 8).

**Male.** Head dark brown. Eyes well separated, dichoptic. Frons (Fig. 9) wide anteriorly, distinctly convergent posteriorly but as wide as ocellar triangle. Frons with short white hairs, anteriorly with a mid oval brownish spot, laterally whitish, posteriorly brown, more sclerotized. Gena and oral margin broad, bare. Occiput and postgena with long white pilosity. Antenna (Fig. 10) brown, scape and pedicel short, flagellum pear-shaped, with a subapical sulcus containing the stylus, apex upcurved. Proboscis long, about 2.3 times as long as height of the head. Palpus brownish, with long apical hairs.

Thorax dark brown, with white pilosity. Postpronotum with long white hairs. The mesonotum and scutellum have lost the most part of the pilosity, but the few hairs present are long and white. Propleuron and anepisternum with long white hairs, katepisternum bare. Legs dark brown, knees clearer, femora with long white hairs. Wing (Fig. 11) clear, transparent, with 6 spots and a distinct crossvein between veins  $R_{2+3}$  and  $R_4$ . Haltere white.

Abdomen brown, with white long pilosity. Sternites clearer, but sternite 7 darker.

Genitalia brown. Epandrium (Fig. 12) large, pentagonal, brownish, darker anteriorly, with short white hairs. Gonopods (Fig. 13-15): gonocoxite large, with long white hairs; gonostylus (Fig. 14) crab pincer-shaped, pointed, apex inwards curved, with an inner median L-shaped digitiform process (Fig. 15). Aedeagus (Fig. 16-17) triangular, skull bird-shaped in dorsal view, revolver-shaped in lateral view; apex truncate, axe-shaped. Cerci (Fig. 12) short, with short white hairs.

**Female** essentially as the male. General pilosity shorter than in the male. Frons wider (Fig. 18), ocular margins slightly convergent posteriorly. Spot of the frons darker,

brown, oval. Length of the proboscis similar to that of the male. Abdomen brown, tergites darker than sternites. Sternite 8 (Fig. 19) dark brown, anterior margin very convex, more or less clearer in the middle posteriorly and laterally. Spermathecae (Fig. 20).

Total body length: male: 3.4 mm; female: 2.9-4.4 mm.

**TYPE MATERIAL: Holotype** male: SPAIN: Almería: Parque Natural Cabo de Gata -Níjar: in front of Centro de Visitantes "Las Amoladeras", 10.v.2004, collected with a pitfall trap placed in a well developed esparto field, A. Aguirre leg.

**Paratypes:** Parque Natural Cabo de Gata -Níjar: Albergue "Las Amoladeras", 26.iv.2004 3 females, 3.v.2004 1 female, 10.v.2004 2 females, all collected with Moericke trap placed in a thyme field mixed with *Agave* sp.; Torregarcía (environs), 3.v.2004 1 female, collected with a pitfall trap placed in a zone with *Ziziphus lotus* and dunar vegetation. All A. Aguirre leg. Type material preserved in alcohol (70°) and deposited in the private collection of the author.

Abdomen of the holotype and of one paratype detached, and cleared with KOH (10%). Genital parts dissected and stored into their own respective abdomens and these stored in microvials with alcohol (70°).

**DISCUSSION:** *Parageron additivaneura* sp.n. keys out to couplets 9 and 3 in Engel's (1932-1937) and Paramonov's (1950) keys respectively, which include *Parageron/Usia punctipennis* (Loew, 1846) and *Usia vagans* Becker, 1906. *P. additivaneura* sp.n. differs very clearly from these two species by its distinct additional crossvein between veins  $R_{2+3}$  and  $R_4$ , as well as by genital characters. Furthermore, the male eyes of *U. vagans* are holoptic. Nevertheless, the male eyes of *P. punctipennis* are dichoptic, but the frons is abruptly narrowed posteriorly and is narrower than the width of the ocellar triangle.

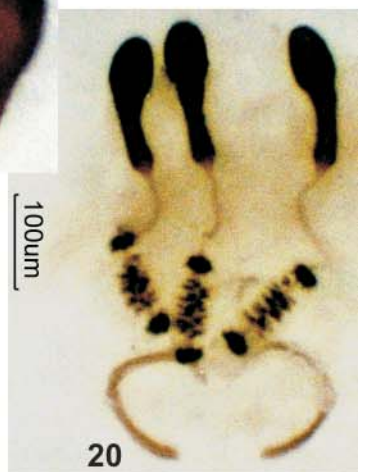
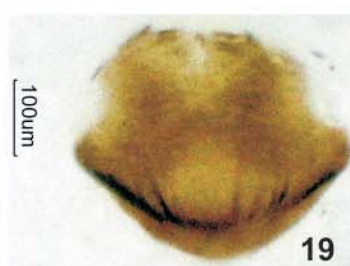
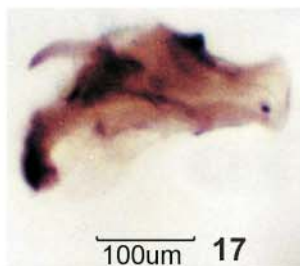
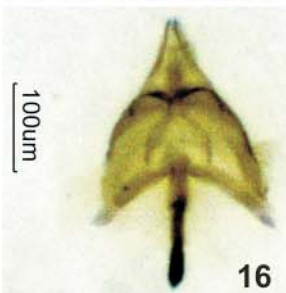
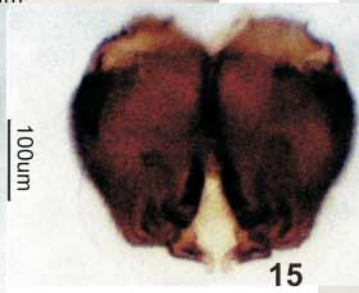
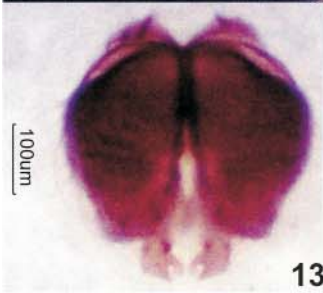
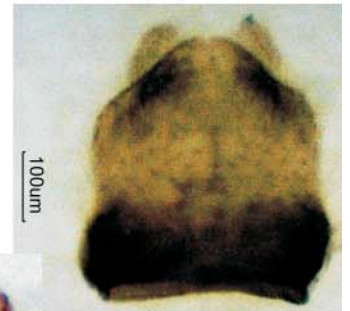
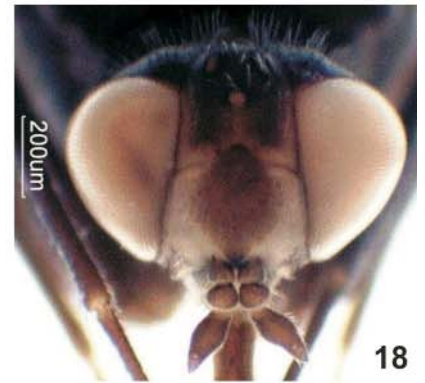
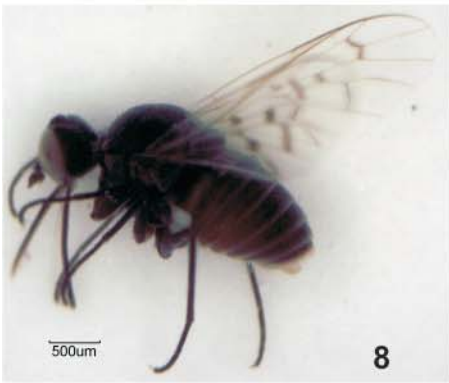
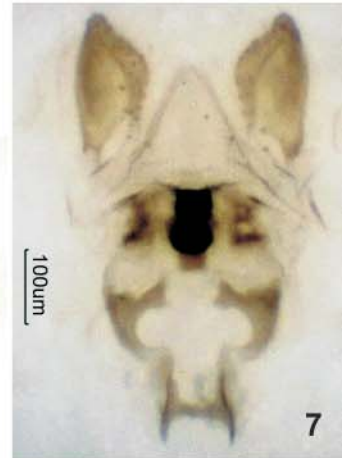
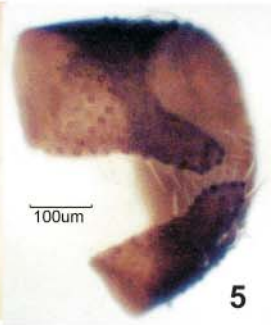
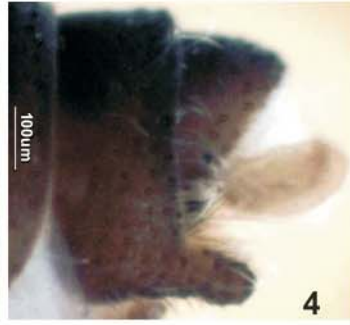
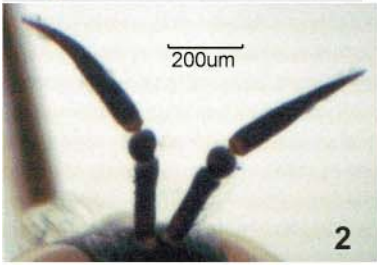
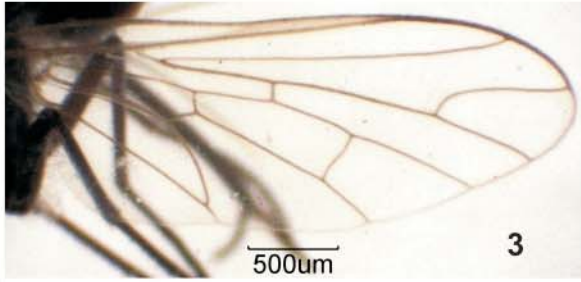
**BIOLOGY:** unknown. The specimens were collected in an arid and dry zone by means of Moericke and pitfall traps placed among different kinds of vegetation. For more details see "Type material".

**DISTRIBUTION:** hitherto only known from southern Spain.

**ETYMOLOGY:** the specific name refers to the distinct additional crossvein present between veins  $R_{2+3}$  and  $R_4$  (additivus = "additional" in Latin; neuron = "vein" in Greek).

► **Fig. 1-7.** *Geron etamorpha* sp.n.: 1) habitus; 2) antennae; 3) wing; 4) tergites 8, 9 and cerci (lateral view); 5) posterolateral process of tergite 8 (longest view); 6) sternite 8; 7) furca, subgenital plate and cerci.

► **Fig. 8-20.** *Parageron additivaneura* sp.n.: 8) female habitus; 9) male frons (dorsofrontal view); 10) male pedicel and flagellum (lateral view); 11) wing; 12) epandrium; 13) gonopods (posterior view); 14) gonopods (posteroventral view); 15) gonopods (subventral view); 16) aedeagus (dorsal view); 17) aedeagus (lateral view); 18) female frons (dorsofrontal view); 19) sternite 8; 20) spermathecae.



### Acknowledgements

My most sincere thanks to Antonio Aguirre (Almería) for the shipment of the Diptera collected in the Cabo de Gata -Níjar Natural Park among which these two very interesting new bombyliid species were found. Also many thanks to David Gibbs (Bristol) for his comments and advice, for telling me that Figures 83-86 in Theodor's (1983) paper belong to *Geron krymensis* and for the shipment of photographs of *Parageron punctipennis* and *Usia vagans* for comparison. Finally, my most gratitude to Joana Danés (Barcelona) and Jane Pérez (Barcelona) for their help in Latin-Greek and English respectively.

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ISBN: 84-922495-7-9. 94 pp.

Monografías SEA, vol. 8. 2002.  
**Catálogo de los Diptera de España, Portugal y Andorra ( Insecta )**  
Catálogo dos *Diptera* de Espanha, Portugal e Andorra ( Insecta )  
Catalogue of the *Diptera* of Spain, Portugal and Andorra ( Insecta )  
Miguel Carles-Tolrá Hjorth-Andersen (coordinador)  
ISBN: 84 - 932807-0-4, 323 pp. formato folio.  
Idioma: español, inglés, portugués.