

Description of a new brachypterous *Ariasella* Gil (Diptera, Hybotidae, Tachydromiinae) from Portugal

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Abstract

Ariasella lusitanica sp. nov., a new brachypterous species is described from the North of Portugal and a key is provided for the five brachypterous *Tachydromia*-like species occurring on the Iberian Peninsula and Pyrenees.

Introduction

At the moment four apterous and brachypterous *Tachydromia*-like species are known from the Iberian Peninsula and Pyrenees. They belong to two genera: *Pieltaenia* Arias, 1919 with a single species *P. iberica* Arias, 1919 and *Ariasella* Gil, 1923 with three species: *A. semiaptera* Gil, 1923 (type species), *A. pieltaini* Gil, 1936 and *A. pandellei* Séguéy, 1941. The genus *Pieltaenia* has no wings at all and no halteres. *Ariasella* has wings that are stalk-like in male and filiform or squamiform in female. In *A. pieltaini* males are unknown, but females have also thin stalks.

The systematic position of these apterous or brachypterous genera is actually unclear, but they are closely related to *Tachydromia* Meigen on first sight. A main difference is the morphology of the thorax. However, the absence of functional wings probably provoked a reduction in the thorax volume and shape.

Recently, Grootaert & Shamshev (2008) reviewed cases of brachyptery in empidoidea among which this phenomenon is almost exclusively known within the family Hybotidae.

Wing reduction took place several times in *Tachydromia* e.g. *T. rossica* Shamshev, 1994, *T. apterygon* Plant & Deeming, 2006 and *T. schnitteri* Stark, 1996. A special revision including molecular studies in the near future should elucidate the position of *Pieltaenia* and *Ariasella* within or outside *Tachydromia*.

In the present paper a new brachypterous species is described from the North of Portugal and a key

is provided for the five species occurring on the Iberian Peninsula and Pyrenees.

Ariasella lusitanica sp. nov.

(Figs 1, 2-4)

Material examined. Holotype male, PORTUGAL, Braga Prov., Barcelos, Gilmonde, (41°30'42.54"N, 8°38'57.33"W), 8 March 2008, leg. Rui Andrade (in alcohol, RBINS).

Paratypes: 2 males same provenance as holotype (one on pin, one in alcohol). 3 females, Gilmonde, 1 male (dissected), 9 March 2008, leg. Rui Andrade. Gilmonde, 17 February 2009, 1 male, 18 February 2009, 3 males, 3 females, 23 February 2009 (RBINS).

Diagnosis. Small species with wing reduced to a bilobed club-shaped stalk in male; wing minute squamiform in female. Thorax with whitish grey tomentose prothoracic sclerites. Black antennae, black palpi, very long brownish dorsal hairs on thickened fore tibiae. Postpedicel triangular, 2.5 times as long as wide. Male with a ventral apical spur on mid tibia.

Description. Body length: 2.25-2.40 mm. Head dark brown. Frons above antennae broad, as wide as postpedicel, parallel-sided. Ocellar tubercle shining anteriorly and finely pollinose posteriorly; anterior ocellars long laterocline, no posterior ocellars. Occiput largely greyish pollinose, subshining, with 2 moderately long verticals and several short black setae on upper part. Antenna black. Scape as long as wide; pedicel long, three

times as long as wide at base; postpedicel triangular, 2.5 times as long as wide with dorsal, subapical stylus; tip of postpedicel with quite long pale hairs. Stylus bare, twice as long as scape, pedicel and postpedicel combined. Proboscis black, as long as palpus. Palpus strap-like, black in ground-colour, about 3 times as long as wide, bearing a black bristle that is almost as long as palpus, further clothed in long silvery white hairs anteriorly.

Thorax dark brown, largely shining, with long setae black, short ones pale; prothoracic sclerites densely whitish grey tomentose. Mesonotum shining black, but scutellum and metanotum grey pollinose. Mesonotum with a distinct notopleural, and a pair of short parallel scutellars; acrostichals biseriate, diverging, short anteriorly and longer posteriorly. Dorsocentrals minute throughout.

Legs mainly darkened, but with a complex pattern. Fore coxa yellowish brown, mid coxa brown, hind coxa yellowish. Fore femur dorsally and posteriorly black, anteriorly and ventrally yellowish brown. Fore tibia black, except for yellowish base. Fore tarsomere 1 yellow, following tarsomeres brown to black. Mid femur, tibia and tarsomere 1 and 2 yellowish-brown, following tarsomeres brown. Hind femur and tibia completely black, except for the yellowish brown knee. Hind tarsomeres 1 and 2 yellowish-brown, rest black. Fore femur much thickened on basal 2/3, with a few longer posteroventral bristles and circlet of black preapicals. Fore tibia thickened, spindle shaped, dorsally with a row of hairs only the entire length, being a little longer than tibia is wide, with curled tips; posterodorsally on apical fourth with similar hairs. Mid femur thickened, but only half as wide as fore femur, ventrally with a row of interspaced short black bristles (about 1/4 of femur width), at base with a few stronger bristles enveloping tibial spur. Mid tibia with a pointed tibial spur as long as tibia is wide at tip and bearing at least 3 black spine-like bristles at tip. Hind femur long, a little wider in middle than mid femur, no peculiar bristles apart from circlet of black preapical setae. Hind tibia tubular with a few longer hairs dorsally near tip.

Wing (Fig. 1) reduced to stalk-like structure with a bilobed club-shaped tip reaching base of third abdominal segment. Base of wing pale brownish, more yellowish near tip and bilobed club-shaped part marked with two black patches. A small costal bristle present at base and a few smaller hairs along costa. No halter.

Abdomen brown, finely greyish pollinose;



Fig. 1. Habitus male *Ariasella lusitanica* sp. nov. (photo by Jorge Almeida).

tergites with numerous minute black setulae evenly distributed; no longer posteromarginal bristles differentiated. Apical sternites with longer setae.

Terminalia (Figs 2–4) small, subglobular, covered with grey dusting. Both cerci enclosed in epandrial lamellae. Left cercus with truncate tip and wider than right cercus. Right surstylus with denticles. Left epandrial lamella cleft.

Female. Body length: 2.13–2.6 mm. Colouration body and legs identical to male. Antenna same length and shape. No long dorsal hairs on fore tibia; no spur on mid tibia and wings reduced to small squamiform stubs bearing a bristle. Basal abdominal segment yellowish, following segments black. Cerci brown.

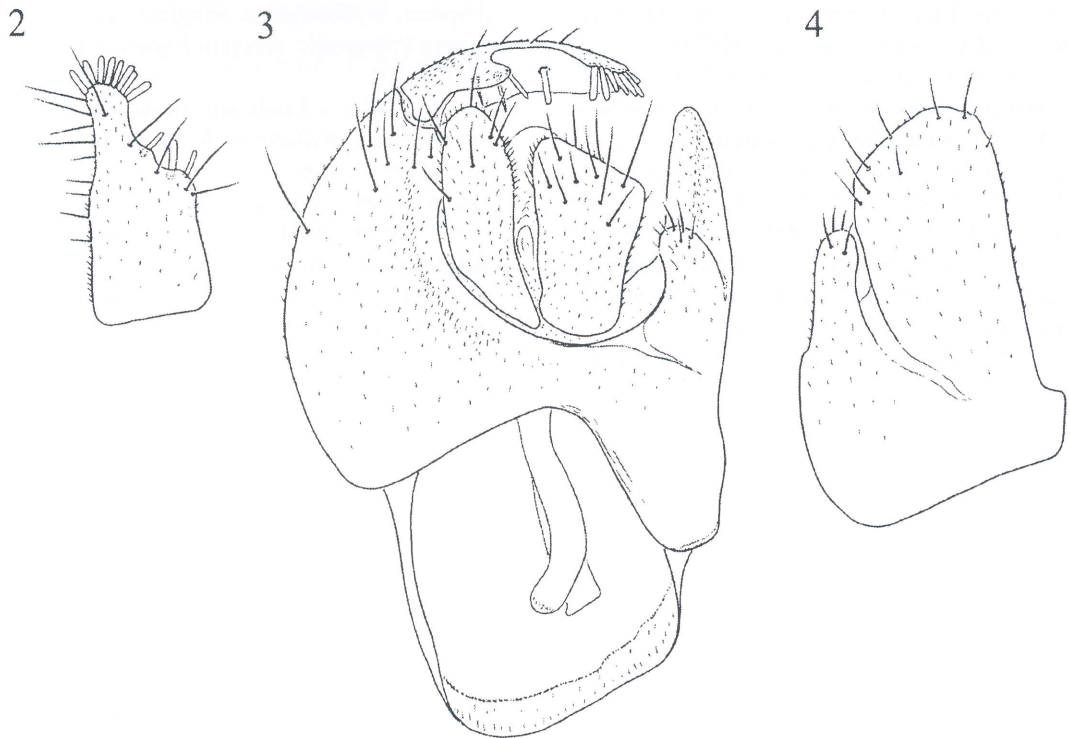
Derivatio nominis: The species is named after the ancient name of Lusitania for Portugal.

Phenology: *A. lusitanica* sp. nov. has been observed from mid of February until late April only and was not present later on the site.

Habitat: Soil dweller, in shaded areas on humid soils, rich in organic matter, in forest composed mainly of pine trees (*Pinus pinaster*) and eucalyptus (*Eucalyptus* spp.).

Discussion

Ariasella lusitanica sp. nov. is the only species of this brachypterous group that has a quite long triangular postpedicel. The other species have small, ellipsoid to almost circular postpedicel. It is probably closest to *A. pandellei* Séguy described from the Pyrenees because in both species the male fore tibiae are set with dense hairs with curly tips. This is not present in the other two species of which we know the males. The wing is also similar in being a long stalk reaching the base of the third



Figs 2-4. *Ariasella lusitanica* sp. nov. Male genitalia. 2. right surstylus. 3. epandrium with cerci. 4. left epandrial lamella.

abdominal segment and widening at tip. The tip is triangularly widened in *A. pandellei*, while bilobed with two black patches in *A. lusitanica* sp. nov. The tip of the wing in *A. semiaptera* male is also club-shaped, but not bilobed and without black patches.

Key to males

Male of *A. pieltaini* unknown.

1. No vestiges of wings present at all
..... *Pieltainia iberica*
Wings present as stalks with widened tip: genus
Ariasella 2
2. Fore tibia swollen and dorsally set with long
curly hairs 3
Fore tibia with only short hairs
..... *A. semiaptera*
3. Postpedicel triangular, 2.5 times as long as wide
..... *A. lusitanica* sp. nov.
Postpedicel almost circular *A. pandellei*

Key to females

1. No wings present at all ... *Pieltainia iberica*
Wings present as stalks or small squamae: genus
Ariasella 2

2. Wings squamiform 3
Wings filiform 4
3. Postpedicel triangular, 2.5 times as long as wide
..... *A. lusitanica* sp. nov.
Postpedicel ellipsoid, about as long as wide ..
..... *A. semiaptera*
4. Tip of wing reaching posterior border of
abdominal segment 3 *A. pandellei*
Tip of wing reaching posterior border of
abdominal segment 2 *A. pieltaini*

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References

- ARIAS J., 1919. – Descripción preliminar de un nuevo Émpido de España. *Boletín de la Real Sociedad Española de Historia Natural* 1919: 479-481.
- GIL J., 1923. – Estudio de un nuevo Taquidromino de España. *Boletín de la Real Sociedad Española de Historia Natural* 1923: 150-154.
- GIL J., 1930. – Nuevo género braquíptero de Dípteros Émpidos. *Eos (Revista Española de Entomología)* 6 (2): 141-146.
- GIL J., 1936. – Una nueva especie del género *Ariasella* GIL, con breves consideraciones sobre la reducción

- del tórax en los Taquidrominos ápteros. *Eos (Revista Española de Entomología)* 11(3): 191-201.
- GROOTAERT P. & SHAMSHEV I., 2008. – Notes on the halobiont genus *Chersodromia* (Diptera: Hybotidae) from Tunisia with the description of a new brachypterous species and notes on brachyptery in empidooids. *Bulletin S.R.B.E./K.B.V.E.* 144: 57-63.
- PLANT A.R. & DEEMING J.C., 2006. – An apterous species of *Tachydromia* MEIGEN, 1803 (Diptera: Hybotidae) from Italy. *An International Journal of Dipterological Research* 17(1): 13-16.
- SHAMSHEV I.V., 1994. – *Tachydromia rossica* sp. n. (Diptera, Hybotidae) a wingless species from the eastern Palaearctic. *Russian Entomological Journal* 3: 163-164.
- SÉGUY E., 1941. – Etude sur un nouveau Corynéte des Pyrénées. *Bulletin de la Société entomologique de France* 46: 4-6.
- STARK A., 1996. – Eine neue brachyptere *Tachydromia* aus Deutschland und Diskussion ihres Indikatorwertes für alte Dünengebiete im Binnenland (Diptera, Empidoidea, Hybotidae). *Studia dipterologica* 3: 300-310.
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