

Aglossa mayrae Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., a new species from Spain (Lepidoptera: Pyralidae, Pyralinae)

J. Ylla, J. Šumpich, F. J. Gastón, M. Huertas & R. Macià

Abstract

Aglossa mayrae Ylla, Šumpich, Gastón, Huertas & Macià, sp. n. is described from various localities in south-east Spain. The differences between morphologically similar species of genus *Aglossa* Latreille, 1796 inhabiting the Iberian Peninsula are given as well as photographs of the adults and their genitalia.

KEY WORDS: Lepidoptera, Pyralidae, *Aglossa mayrae*, new species, Spain.

Aglossa mayrae Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., una nueva especie para España
(Lepidoptera: Pyralidae, Pyralinae)

Resumen

Se describe *Aglossa mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., de distintas localidades en el sureste de España. Se indican las diferencias morfológicas de especies similares del género *Aglossa* Latreille, 1796 que habitan la Península Ibérica y se presentan fotografías de los adultos y de su genitalia.

PALABRAS CLAVE: Lepidoptera, Pyralidae, *Aglossa mayrae*, especie nueva, España.

Introduction

According to SLAMKA (2006), the genus *Aglossa* Latreille, 1796, comprises nine species in Europe, four of which are present in the Iberian Peninsula. However, two of these nine species, *A. dimidiata* (Haworth, 1809) and *A. ocellalis* Lederer, 1863, must be considered as extralimital as they are native to Asia. Old records from London and Glasgow were due to accidental transport and the species were not established (GOATER, 1986).

LERAUT (2014) listed six valid species of *Aglossa* in Europe as he did not mention *A. exsucealis* Lederer, 1863 known from Cyprus and often included in the European fauna.

The most recent Spanish catalogue (VIVES MORENO, 2014) enumerates five species in the Iberian Peninsula, as the author included also a record of *A. rubralis* Hampson, 1900 from Almería.

During processing and identification of material collected during 2016 we recognized specimens of *Aglossa*, which did not correspond to any described species. We have checked particularly species of *Aglossa* occurring in North Africa, summarized by LERAUT (2003), and found that our material is different and is here described as *A. mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n.

Therefore, we presently recognize six species of *Aglossa* occurring in the Iberian Peninsula:

Aglossa pinguinalis (Linnaeus, 1758)

Aglossa rubralis Hampson, 1900

Aglossa caprealis (Hübner, [1809] 1796)

Aglossa brabantii Ragonot, 1884

Aglossa rabatalis (Joannis, 1923)

Aglossa mayrae Ylla, Šumpich, Gastón, Huertas & Macià, sp. n.

Material and methods

The majority of the available specimens were collected by the authors using light traps equipped with 6-8 W actinic bulbs. A bigger trap, with a combination of mercury vapour and mixed light bulbs (125 W and 165 W, respectively) was also used. A few additional specimens were found in collections of other colleagues (see below).

The description of genitalia and associated structures follows GOATER *et al.* (2005).

Studied material is deposited in the following collections:

FMGS - Francisco Morente, Granada, Spain

JYGS - Josep Ylla, Gurb, Spain

JGGS - Javier Gastón, Getxo, Spain

JPAS - Javier Pérez-López, Armilla, Spain

MNCN - Museo Nacional de Ciencias Naturales, Madrid, Spain

NMPC - National Museum, Prague, Czech Republic

Aglossa mayrae Ylla, Šumpich, Gastón, Huertas & Macià, sp. n.

Material examined: Holotype. ♀, SPAIN, Alicante | route 8 km N of | Albaterra env. | 4-V-2008, 300 m | J. Šumpich leg., Gen. prep. | J. Šumpich | 17/017, DNA Barcode | NMPC-Lep-0023, Holotypus | *Aglossa mayrae* | Ylla, Šumpich, Gastón, Huertas & Macià, 2017. Deposited in the National Museum, Prague, Czech Republic.

Paratypes (14 ♂♂, 5 ♀♀): 2 ♂♂, Spain, Almería, Tabernas env., Aghuilla Salada, 420 m, 2-III-2008, J. Šumpich leg. (DNA Barcode NMPC-Lep-0022, NMPC-Lep-0024) (NMPC, MN CN); 2 ♂♂, the same locality but 29-IV-4-V-2009, M. Dvořák leg. (gen. prep. J. Šumpich 17011) (NMPC); 1 ♂, the same locality but 18-19-X-2009, M. Dvořák leg. (NMPC); 1 ♂, Spain, Andalucía, Baza, Río de Baza, Salazar, 810 m, 31-VII-2010, M. Dvořák leg. (gen. prep. J. Šumpich 17019, DNA Barcode NMPC-Lep-0025) (NMPC); 1 ♂, Barranco de Mazarra, Baza, Granada, 30SWG2754, 765 m, 14-VI-2016, J. Ylla leg. (gen. prep. J. Ylla JY4621) (JYGS); 1 ♂, Barranco El Espartal, Baza, Granada, 30SWG25, 750 m, 15-VI-2011, J. Gastón leg. (gen. prep. J. Gastón 5626JG) (JGGS); 1 ♂, the same locality but 20-VI-2013, J. Gastón leg. (gen. prep. J. Gastón 5632JG) (JGGS); 1 ♂, the same locality and date, J. Gastón leg. (JGGS); 1 ♂, Rambla de Carril, Fonelas, Granada, 30SVG84, 815 m, 26-VIII-2016, J. Gastón leg. (gen. prep. J. Gastón 5633JG) (JGGS); 1 ♂, Barranco El Espartal, Baza, Granada, 30SWG25, 760 m, 5-VI-2012, F. Morente leg. (gen. prep. J. Gastón 5634JG), (F. Morente coll.); 1 ♂, Dúdar, Aguas Blancas, Granada, 30SVG51, 830 m, 15-VI-1999, F. Morente leg. (gen. prep. J. Gastón 5635JG) (FMGS); 1 ♂, Íllora, Río Genil, Granada, 30SVG11, 510 m, 14-VII-1993, F. Morente leg. (gen. prep. J. Gastón 5636JG) (FMGS); 1 ♀, Íllora, Río Genil, Granada, 30SVG11, 510 m, 29-X-1992, F. Morente leg. (gen. prep. J. Gastón 5637JG) (FMGS); 1 ♀, Rambla de Grao, Guadix, Granada, 30SVG8835, 950 m, 20-III-1990, F. J. Pérez-López leg. (gen. prep. J. Gastón 5647JG) (JPAS); 1 ♀, Rambla de Grao, Guadix, Granada, 30SVG8835, 950 m, 20-V-1992, F. J. Pérez-López leg. (gen. prep. J. Gastón 5649JG) (JPAS); 1 ♀, Barranco del Espartal, Baza, Granada, 30SWG2753, 770 m, 2-VI-2010, F. J. Pérez-López leg. (gen. prep. J. Gastón 5648JG) (JPAS); 1 ♀, Cueva de los Burreros, Guadix, Granada, 30SVG8931, 900 m, 20-III-1991, F. J. Pérez-López leg. (gen. prep. J. Pérez 420) (JPAS).

Description: Adult males (Fig. 1): Wingspan 28,20 mm (n=10). Head scales brown. Antenna brown, ciliate and flagellum with small basal notch. Eyes black, well developed; labial palpi strong, 1,5 times as long as head, completely covered with brown scales. Forewings broad, outer margin rounded, with

yellow-brownish ground colour interrupted by darker transverse lines suffused by reddish brown scales. Costal margin with five evident brown spots (particularly visible in fresh individuals), which correspond with the beginning of the basal, postbasal, submedian, median and postmedian bands. Hindwings broad, with rounded margin and similar brownish ground colour to forewings, but with two evident curved brown dark bands parallel to outer margin. All wings fringed with pale brown fringes. Underside of all wings paler, without bands and with light yellow sheen. Middle legs with pair of long spurs on each tibia.

Adult females (Fig. 2): Wingspan 30 mm (n=5). Very similar to males, with paler ground colour, wing-shape less rounded and antenna not ciliate.

Male genitalia (Figs. 7-12): Corresponding to general pattern of *Aglossa*, as it has very long and narrow dactyliform uncus, and ostentatious, long and sclerotized gnathos terminated with shape reminiscent of eagle's beak. Valvae are simple, triangularly shaped, pointing slightly towards their apex. Clasper absent, costal margin almost straight. Juxta rectangular, bilobed and well developed; saccus short and quite pointed; phallus cylindrical, with big coecum penis slightly curved showing large group of spines in its distal end, just at the union with juxta and large cornutus with bulbous base, covered with strong sclerotized spines.

Female genitalia (Figs. 19-20): The 8th and 9th segments proportionally large in comparison to rest of structure (ductus and corpus bursae) and strongly sclerotized. Anal papillae triangularly-shaped, finishing in strongly sclerotized margin, with long posterior apophyses reaching central part of antrum. Anterior apophyses proportionally shorter. The 8th segment, very wide, highly sclerotized, tergite with triangular spot, finishing with base near ostium with two emarginations. Antrum membranous, slightly sclerotized and with troncoconical shape. Just below antrum, in colliculum, there is small grain-like deformation just at the beginning of ductus seminalis. Ductus bursae short and membranous with vertical striae. Bursa copulatrix small, delicate and membranous with small signum formed by a few sclerotized scales.

Diagnosis: The forewing pattern of *Aglossa mayrae* sp. n. is most similar to *A. pinguinalis* (Figs. 5-6) and *A. rubralis* (Figs. 3-4). *Aglossa mayrae* generally differs in lighter coloration and more distinct lines on the hindwings (mostly absent in *A. pinguinalis*). Forewings of *A. rubralis* are more pointed on the apex and distinctly reddish (only slightly suffused in *A. mayrae*).

The male genitalia of *A. mayrae*, *A. pinguinalis* and *A. rubralis* are very similar. They all share a characteristic highly developed and sclerotized gnathos, which always surpasses the length of the uncus. The gnathos of *A. pinguinalis*, however, differs from the other two species in its shorter length and more robust form, ending a shape more reminiscent of a parrot's beak than the eagle's beak (Fig. 15). *Aglossa pinguinalis* also differs in the shape of the saccus, which is triangular and terminated by a characteristic dactyliform process (Fig. 13), while in *A. mayrae* and *A. rubralis* it is triangular but ending in to a point. The uncus is another character enabling recognition of the three species. In *A. mayrae* it is elongated and thin, of the same width throughout its length (Fig. 7), while in *A. pinguinalis* and *A. rubralis* it is shorter and triangular and also smaller in size than in *A. pinguinalis* (Fig. 15). Finally, the phallus is the most elongate and slenderest in *A. rubralis* (Fig. 17), while in *A. mayrae* and *A. pinguinalis* it is thicker and shorter (Figs. 9, 11, 14); all of them have the cornutus inside but of different size and structure. The largest is that of *A. mayrae*, which has a stiletto shape, is highly sclerotized, with a bulbous, mace-shaped base, and covered with spines (Fig. 10). Similar, but smaller, is that of *A. pinguinalis*, in which the base has a small cone shape, i.e. similar to maize. In *A. rubralis*, the cornutus is reduced to a lenticular form while the base of the aedeagus shows a peculiar membranous area covered with numerous spines (Fig. 18).

The female genitalia of these three species can be divided into two groups. The first comprises *A. pinguinalis* and *A. rubralis*, very similar to each other and signum-shaped, and the only significant difference is size: larger and strongly sclerotized in *A. pinguinalis*, while smaller and poorly sclerotized in *A. rubralis* (Figs. 21, 22, 23, 24). Both species share very long anterior apophysis, which is in *A. mayrae* distinctly shorter. This character, in combination with shape of the antrum, the ductus and the bursa copulatrix, differentiates the new species from the previous two. The signum of bursa copulatrix in *A. mayrae* is very small in comparison to the two other species (Figs. 19, 20).

Biology: According to our findings, *A. mayrae* probably has two generations, as adult moths are active during April to July and then October. They are active during night and are attracted to lights. SÁNCHEZ & PÉREZ-LÓPEZ (1998) and PÉREZ-LÓPEZ (2002) described the behaviour of larvae of *A. pinguinalis* in Baza but they belong in fact, to *A. mayrae* sp. n. According to source they display coprophagy as a main feeding habit. They are found inside caves where 98% of the larvae fed mostly on excrements and only 2% were recorded as eating other kind of detritus (decayed mushrooms). The larvae of this moth require two years, to complete development, and construct silk tubes connecting the food source with a shelter chamber. This behaviour allows them to compete successfully with other coprophagous specialists that thrive in open fields, such as scarabeids and dipteran larvae.

Distribution: The new species is probably endemic to Spain, known only at present, from the south east of the Iberian Peninsula (Fig. 25), where it inhabits semi desert or desert habitats, typical for the area. *Aglossa mayrae* is probably stenochorous (a species, which has a small range of distribution) due to the extreme climate conditions in its habitat.

Accordingly, the distribution of *A. mayrae* follows the chain of arid depressions, rich in gypsum, which contain characteristic habitats in this area (e.g. Hoya de Baza, Hoya de Guadix and Hoya de Huéscar) (Fig. 26).

Etymology: The species name is derived from Mayra, name of the wife of the first author.

Remarks: Some published records of *A. pinguinalis* from southern Spain might belong to this new species.

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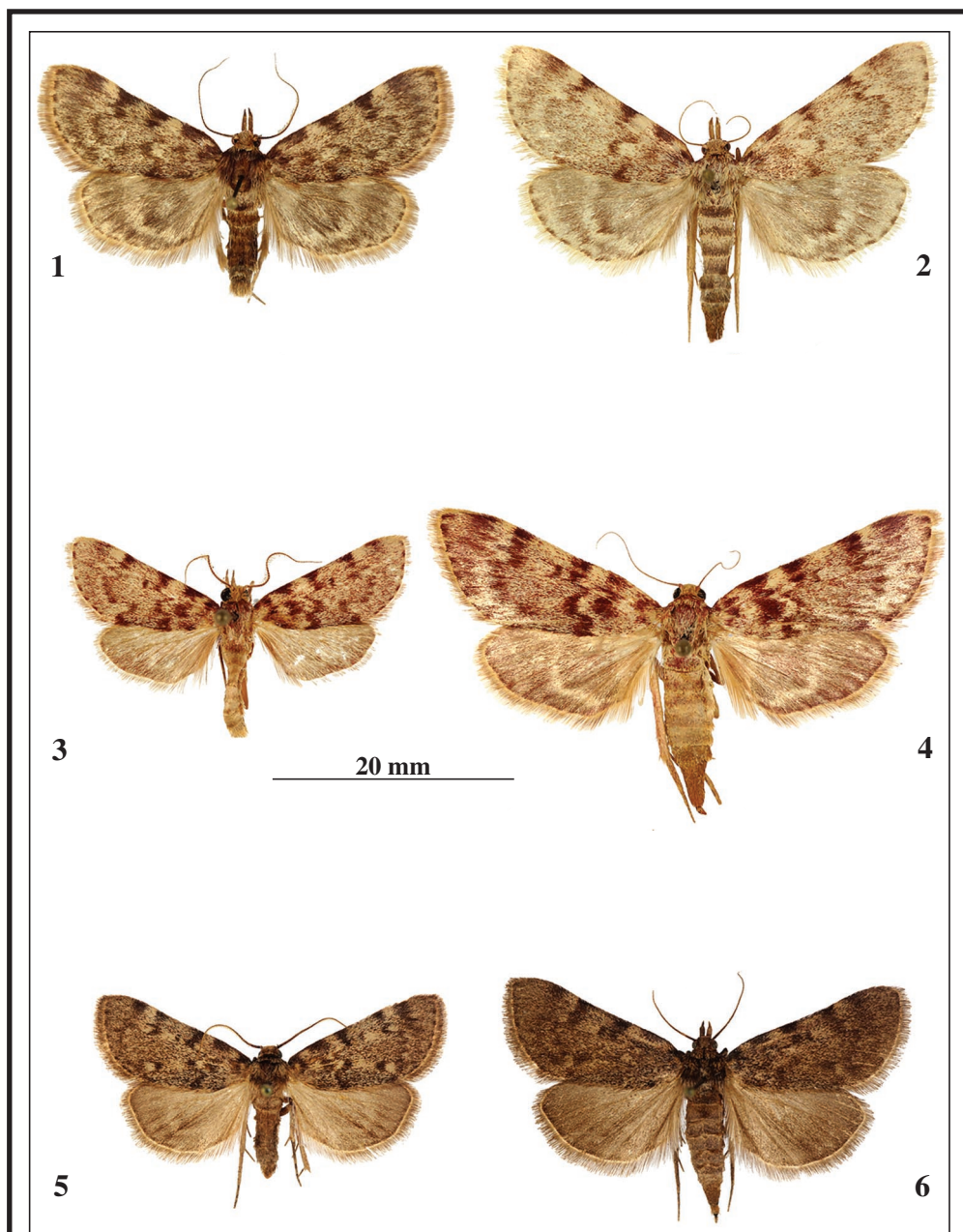
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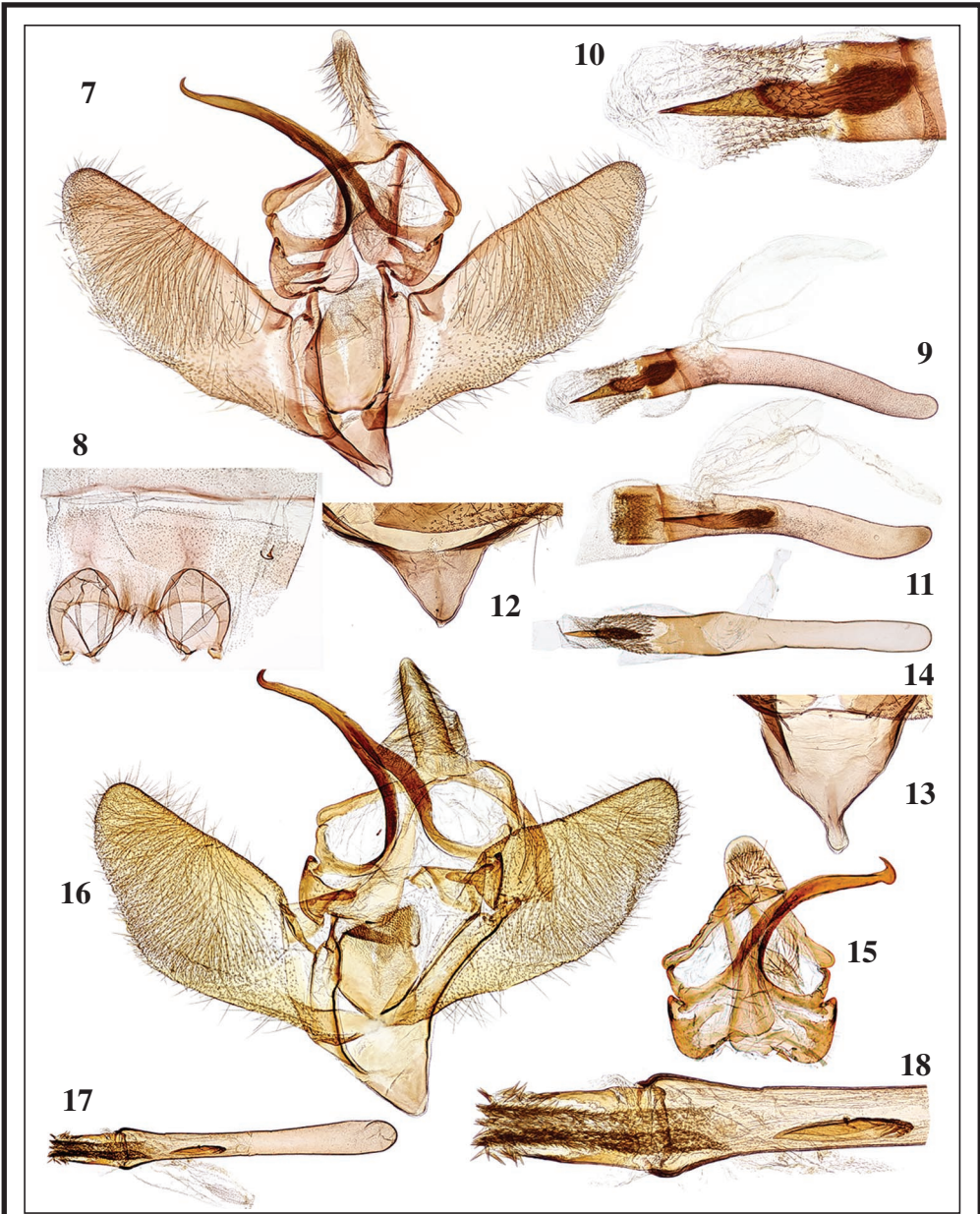
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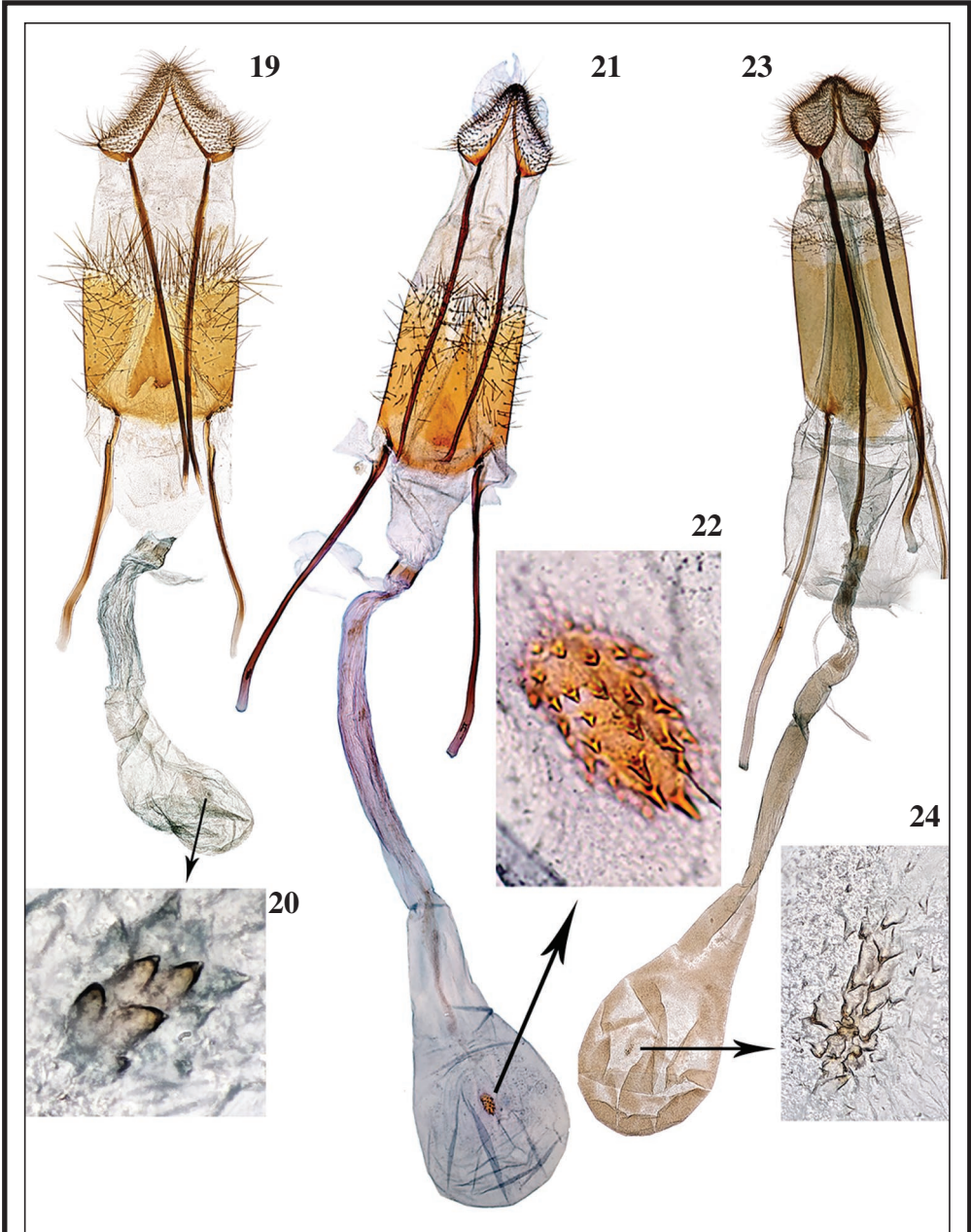
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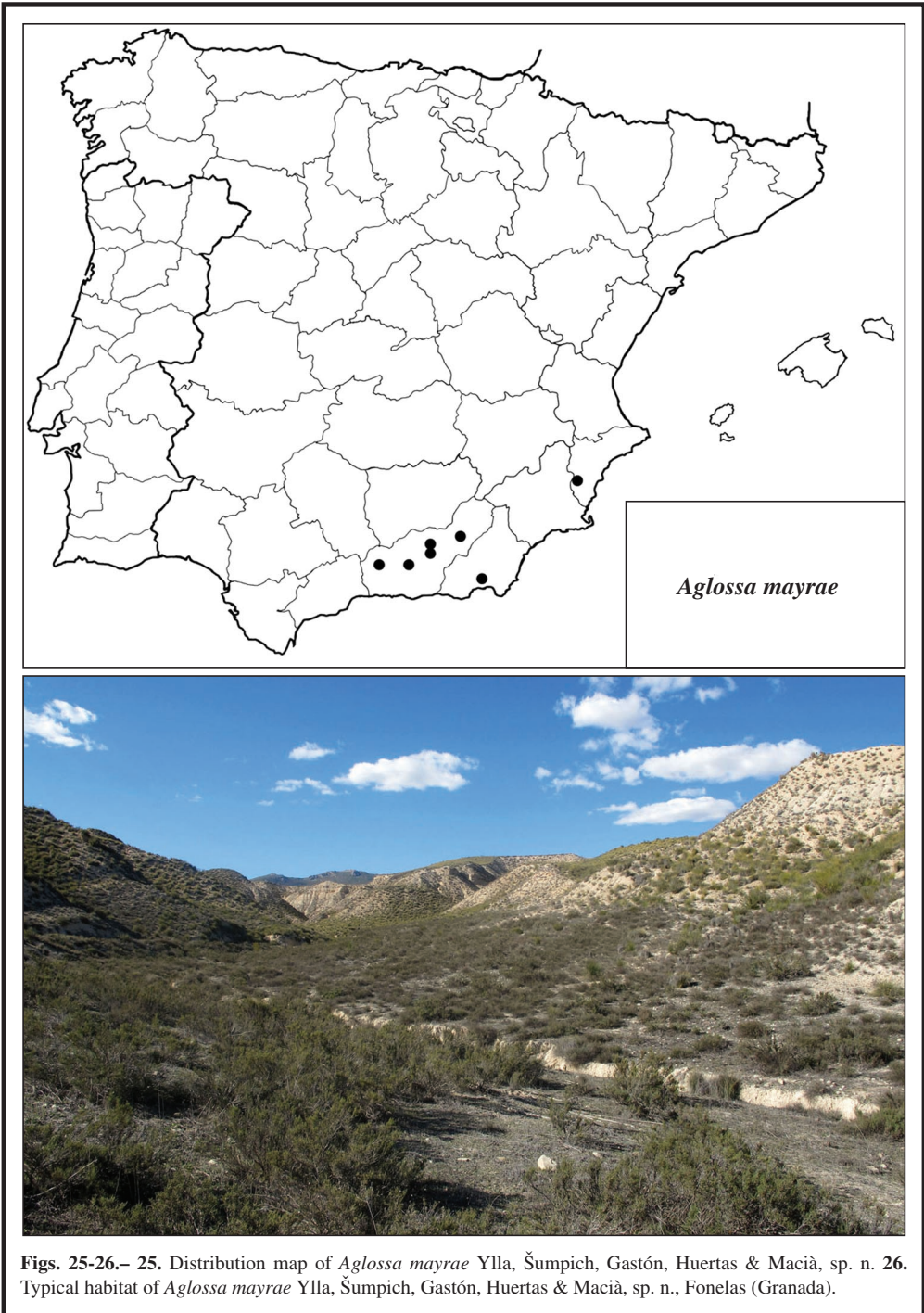
Figs. 1-6.— Habitus. **1-2.** *Aglossa mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., Spain. **1.** ♂, Baza, paratypus. **2.** ♀, Albaterra, holotypus. **3-4.** *Aglossa rubralis* Hampson, 1900, Israel, Nahal Oren, Mt Carmel. **3.** ♂, 1-VIII-1997. **4.** ♀, 20-IX-1997. **5-6.** *Aglossa pinguinalis* (Linnaeus, 1758). **5.** ♂, Plzeň, Czechia. **6.** ♀, Hradec Králové, Czechia. All in coll. NMPC.



Figs. 7-18.— Male genitalia. **7-12.** *Aglossa mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., paratypus. **7.** General view. Spain, Baza. **8.** Sternit I. Spain, Baza. **9.** Phallus. Spain, Baza. **10.** Detail of cornutus. Spain, Baza. **11.** Phallus. Spain, Tabernas. **12.** Detail of saccus. Spain, Tabernas. **13-15.** *Aglossa pingualis* (Linnaeus, 1758). **13.** Detail of saccus. Spain, Aragón, Los Monegros. **14.** Phallus. Spain, Mirantes de Luna, León. **15.** Detail of uncus and gnathos. Spain, Mirantes de Luna, León. **16-18.** *Aglossa rubralis* Hampson, 1900. Israel, Nahal Oren, Mt Carmel. **16.** General view. **17.** Phallus. **18.** Detail of cornutus.



Figs. 19-24.— Female genitalia. **19-20.** *Aglossa mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., Spain, Albatera, holotypus. **19.** General view. **20.** Detail of signum. **21-22.** *Aglossa pinguinalis* (Linnaeus, 1758), Spain, Algorta, Vizcaya. **21.** General view. **22.** Detail of signum. **23-24.** *Aglossa rubralis* Hampson, 1900, Israel, Nahal Oren, Mt Carmel. **23.** General view. **24.** Detail of signum.



Figs. 25-26.– 25. Distribution map of *Aglossa mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n. **26.** Typical habitat of *Aglossa mayrae* Ylla, Šumpich, Gastón, Huertas & Macià, sp. n., Fonelas (Granada).