

## Notas / Notes

### Notes on the occurrence of the Iberian endemic *Dasylabris egregia* (Klug, 1835) (Hymenoptera, Mutillidae, Dasylabrinae) in Portugal

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#### ABSTRACT

Mutillid wasps (Mutillidae) are widespread ectoparasitoid Hymenoptera, represented in Europe by at least 150 species and are characterized by extreme sexual dimorphism. One of the five Iberian species within the genus *Dasylabris*, *D. egregia* (Klug, 1835), was until recently known only from Spain. This short note focuses on the first three records of the species for Portugal, all from coastal Alentejo, including a new locality. Published data on its occurrence in Spain are also briefly summarized.

**Keywords:** *Dasylabris maura* var. *calonota*, new record, range extension, coastal sand dunes.

#### RESUMEN

##### Notas sobre la presencia del endemismo ibérico *Dasylabris egregia* (Klug, 1835) (Hymenoptera, Mutillidae, Dasylabrinae) en Portugal

Los mutílidos (Mutillidae), son una familia de himenópteros ectoparasitoides de amplia distribución, representados por al menos 150 especies en Europa y caracterizados por presentar dimorfismo sexual extremo. Una de las cinco especies ibéricas del género *Dasylabris*, *D. egregia* (Klug, 1835), era hasta hace poco únicamente conocida de España. Esta breve nota se centra en los tres primeros registros de la especie para Portugal, todos de la costa del Alentejo, incluyendo una nueva localidad. Además, se resumen brevemente los datos publicados sobre su presencia en España.

**Palabras clave:** *Dasylabris maura* var. *calonota*, nuevo registro, extensión de distribución, arenales costeros.

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Mutillid wasps (Mutillidae; also known as velvet ants) are ectoparasitoid Hymenoptera with more than 4600 species known worldwide, of which at least 150 occur in Europe (e.g. Lelej, 2002; Pagliano *et al.*, 2020); within this family, species are characterized by extreme sexual dimorphism (generally males are winged and females wingless), with both sexes frequently exhibiting very different chromatic patterns; in consequence, unless both sexes are found in copula, sex-associations are difficult to establish and each sex is frequently described independently as a different species.

The Mutillid wasp fauna of Spain has been studied in some detail during the 20<sup>th</sup> century; elaborated over an unfinished manuscript by the entomologist Ricardo García Mercet, the work by José Giner Marí (1944) was an attempt to summarize the knowledge to that date, and from the 1950's Francisco J. Suárez published what are still the most relevant works regarding Iberian Mutillid wasps to the present day (e.g. Suárez, 1952, 1954a, b, 1959, 1988, among others). By contrast, the respective fauna of Portugal has received little attention, and despite occasional mentions to

Mutillid wasps in general faunistic works (e.g. Diniz, 1959, 1989, and more recently Baldock *et al.*, 2020), the present country-level knowledge about this family is extremely incomplete, with gaps that will take considerable effort to mitigate.

The genus *Dasylabris* Radoszkowski, 1885 (Dasylabrinae) is currently considered to be composed of five species within the Iberian Peninsula, four of those in the subgenus *Dasylabris* s.s.: *D. atrata* (Linnaeus, 1767), *D. egregia* (Klug, 1835), *D. iberica* Giner, 1942 and *D. maura* (Linnaeus, 1758), and one in the subgenus *Inbaltilla* Lelej, 1976: *D. lugubris* (Klug, 1835); e.g. Giner Marí (1944), Lelej (2002).

*Dasylabris egregia* was originally described from the male sex, collected in Puerto Real (Andalusia, Spain; Klug, 1835; Lelej, 2002); the female sex was described separately by André (1903), as *Mutilla maura* var. *calonota*, based on a specimen from Madrid; the correct male-female sex association was first suggested by García Mercet (1903), then by Junco y Reyes (1941) and finally formalized by Giner Marí (1944) by inference (*i.e.* no pair in copula was obtained), synonymizing André's taxon. Records of this species are relatively scarce and known from the southern half of Spain, from Madrid to Andalusia and particularly from the south-eastern provinces (Fig. 1; Appendix 1); the species was thought to be endemic of Spain until two records were recently reported by Baldock *et al.* (2020). Partially in consequence of its

scarcity nothing is known about its potential host species or other aspects of its ecology.

In July 2019, while making a direct effort to collect Mutillid wasps, the author found a female *D. egregia* running over the dunes north of Vila Nova de Milfontes (Odemira, Beja, Portugal).

**MATERIAL:** 1♀, Vila Nova de Milfontes (Odemira, Beja, Portugal), 37°45'18.04"N, 8°47'56.70"W, alt. 51 m a.s.l., 18.vii.2019, 11:10 GMT (R. Matias, det., leg. & coll.); Figs. 2-3.

The specimen (length: 14.2 mm) lacks the last antennomere of the right antenna and, attached to the right femur 2, there is a parasite (undetermined Acari). Morphologically, it is identical in every respect to typical Spanish specimens.

The two other records recently published from coastal Portugal (Baldock *et al.*, 2020), both localities north of the record here described, are: 1♀, Carvalhal (Grândola, Setúbal), 22.vii.2016, det. Romano, leg. J. Halada, coll. Romano; 1♀, Santo André (Santiago do Cacém, Setúbal), 5.viii.2018, det. Baldock, leg. M. & E. Howe.

*Dasylabris egregia* is therefore an Iberian endemic, but evidently rare in Portugal, where it currently is known only from three coastal locations (Fig. 1), all in Alentejo, associated with extensive sand dunes. In Spain it occurs not only in this type of habitat but also in well preserved cork oak forests and other dry and

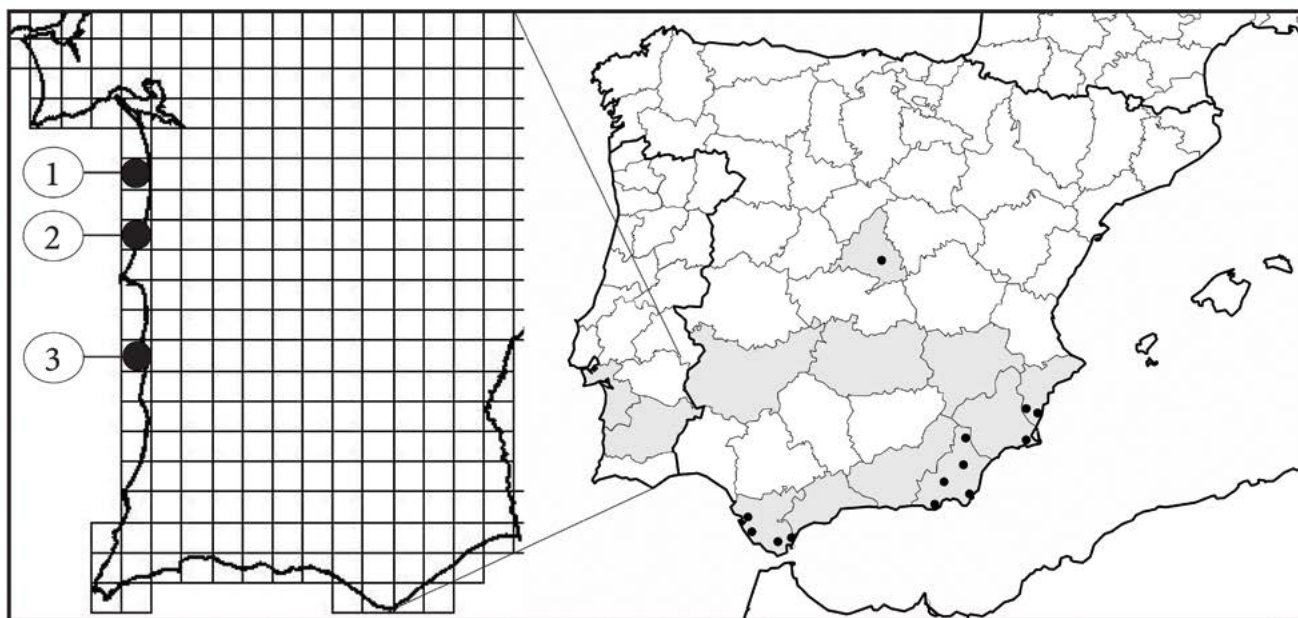


Fig. 1.— Occurrence of *Dasylabris egregia* in Portugal and Spain. The 10×10 km UTM grid is shown for Portugal where the three known records are marked: 1. Carvalhal (2016); 2. Santo André (2018); 3. Vila Nova de Milfontes (2019), new record. The Spanish provinces and the Portuguese districts where the species has been recorded are shaded in grey; when the information is available, the exact Spanish locations are marked with a black round spot.

Fig. 1.— Presencia de *Dasylabris egregia* en Portugal y España. La cuadrícula UTM de 10×10 km se muestra para Portugal donde se marcan los tres registros conocidos: 1. Carvalhal (2016); 2. Santo André (2018); 3. Vila Nova de Milfontes (2019), nuevo registro. Las provincias españolas y los distritos portugueses donde se ha registrado la especie están sombreadas en gris; cuando se dispone de información, las ubicaciones españolas exactas están marcadas con un punto negro.



Fig. 2.— *Dasylabris egregia*, female, Vila Nova de Milfontes, 18.vii.2019. Dorsal habitus.

Fig. 2.— *Dasylabris egregia*, hembra, Vila Nova de Milfontes, 18.vii.2019. Habitus dorsal.

non-coastal areas (e.g. Los Alcornocales Natural Park, Cádiz; Appendix 1), including montane habitat and Mediterranean scrubland (e.g. in the provinces of Granada and Malaga; Appendix 1); this fact extends considerably the potential area of occurrence in Portugal, which may be less fragmented than the three currently

known records could suggest. Sand dunes are continuous in a strip along the south-western coast from Tróia to Sines (where the 2016 and 2018 specimens were found), with further large expanses of coastal sand dunes South of Sines at Almogrove, Vila Nova de Milfontes (the locality of the present record), around Aljezur (Amoreira) and at Carrapateira; on the other hand, formerly favourable habitat along the coast of Algarve (southernmost Portuguese province) is now probably too degraded and anthropized to hold populations of the species, but the Ria Formosa Natural Park (in particular at the barrier islands) might be the best area to search for the species presently. Habitat changes and habitat loss are two of the most important threats to the presence of *D. egregia* in the region; large areas of biodiverse habitats are currently under intense human pressure, even within nationally protected areas (e.g. “Parque Natural do Sudoeste Alentejano e Costa Vicentina”), where they are being converted to intensive agriculture and to build tourism-related infrastructures, such as golf courses and large touristic resorts at the expenses of the destruction of natural habitats.

These records significantly increase the previously known distribution of the species; they indicate most probably it has remained undetected in those areas, rather than a recent expansion. This fact is relevant, as it is an indication of the poor sampling effort made in



Fig. 3.— *Dasylabris egregia*, pygidial area (gastral tergum 6) of the same specimen.

Fig. 3.— *Dasylabris egregia*, área pigidial (tergum gastral 6) del mismo espécimen.

Portugal regarding Mutillid wasps (with obvious consequences to the knowledge of this group), given that *D. egregia* is a very large, striking and easily identifiable species (particularly the female), despite being a scarce species. It further suggests an inadequately known biodiversity in large areas of the Portuguese territory, which is a limitation to measure potential biodiversity loss.

In conclusion, further continuous effort is necessary to conveniently describe not only the distribution and real abundance of this species but also of the remainder Portuguese Mutillid wasps fauna.

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Appendix 1.– Published records of *Dasylabris egregia* in Spain.

Apéndice 1.– Registros publicados de *Dasylabris egregia* en España.

A list of records published in journals and publicly available on internet sites (whenever the identity of the species could be safely established) is presented below, ordered chronologically; the websites cited include the *Biodiversidad Virtual* database (<https://www.biodiversidadvirtual.org/insectarium/>; BVI; last accessed 3.xi.2021), *Forum Entomologi Italiani* ([www.entomologiitaliani.net/forum/](http://www.entomologiitaliani.net/forum/); FEI; last accessed 3.xi.2021), the general photography website *Flickr* ([www.flickr.com](http://www.flickr.com/); last accessed 3.xi.2021) and the *BioDiversity4All* database ([www.biodiversity4all.org](http://www.biodiversity4all.org/); BD4A; last accessed 03.xi.2021).

When publicly available, the exact location is provided, followed by the Spanish province and the respective autonomous region (Comunidad Autónoma); the latter is omitted after first being mentioned for a given province

- 1) 1♂ (holotype), Puerto Real (Cádiz, Andalusia), Waltl leg.: Klug (1835).
- 2) 1 (?) ♂, Rosenhauer (1856: 372): Andalusia (listed: possibly refers to the specimen collected by Waltl and described by Klug, 1835).
- 3) 1♂ (as *D. maura* var. *atriventris*), Torreveja (= Torreveja [sic]) (Alicante, Comunidad Valenciana); 3♀ (including type of *D. maura* var. *calonota*), Madrid and Cartagena (Murcia): André (1903).
- 4) 1♂, 30.vii.1902; 1♀ (as *D. maura* var. *calonota*), viii.1902, both from Montarco (Madrid): García Mercet (1903).
- 5) 3♂, 3♀ (as *D. maura* var. *calonota*), May-June, Puerto de Santa María (Cádiz, Andalusia): Junco y Reyes (1941).
- 6) Giner Mari (1944) mentions the occurrence of the species in Central, Southern and Eastern Spain, based on specimens from Andalusia (holotype, as above), Montarco (Madrid; 1♂) and females from the provinces of Madrid, Alicante and Murcia (these include certainly the specimens mentioned by previous authors, as above); by then the only two males known of var. *atriventris* were from Alicante province (Torreveja and Orihuela); the author mentions a male from Montarco collected in July 1903 that should be the specimen mentioned by García Mercet (1903), collected in July 1902.
- 7) 1♀, Vélez Blanco (Almería, Andalusia), vi.1944, Canales leg, Suárez det.: Suárez (1952).
- 8) 2♀, Albánchez (Almería), vi.1949, Suárez leg. & det.: Suárez (1952).
- 9) 2♀, Gérgal (Almería), vii.1950; 1♀, Gérgal, viii.1950, all Márquez leg., Suárez det.: Suárez (1952).
- 10) 1♀, Gérgal (Almería), 23.vi.1951, Suárez leg. & det., Museo di Genova coll. in FEI (<http://www.entomologiitaliani.net/public/forum/phpBB3/viewtopic.php?f=85&t=52255&hilit=egregia>; photograph by M. Romano).
- 11) 1♂ (var. *atriventris*), Gérgal (Almería), 19.vi.1951, Suárez leg. & det., Museo di Genova coll., ex-coll. Invrea, in FEI (<http://www.entomologiitaliani.net/public/forum/phpBB3/viewtopic.php?f=85&t=52255&hilit=egregia>; photograph by M. Romano).
- 12) 1♀, La Isleta, Cabo de Gata Natural Park (Almería), 1.vi.2005, A. Foucart leg. & coll., M. Romano det., in FEI (<http://www.entomologiitaliani.net/public/forum/phpBB3/viewtopic.php?f=85&t=52255&hilit=egregia>; with photograph by A. Foucart).
- 13) 2♂ (at least 2♂ ssp. *atriventris* collected), Almería, no date (but probably June 2005), A. Foucart leg., coll & det., in FEI (<http://www.entomologiitaliani.net/public/forum/phpBB3/viewtopic.php?f=85&t=52255&hilit=egregia>; no photograph); over *Ziziphus* flowers.
- 14) 1♂ (typical), Granada (Andalusia), 17.viii.2008, photographed (G. Booth), J. M. Sesma det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img46159.html>); grassland in high mountain.
- 15) 1♂ (*D. e. atriventris*), Almería, 24.v.2013, photographed (F. Rodríguez), D. Parejo-Pulido det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-atriventris-img463188.html>); coastal sands.
- 16) 1♀, Malaga (Andalusia), 10.viii.2015, photographed (F. Fañanás), J. M. Sesma det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img732304.html>); montane grassland.
- 17) 1♂ (*D. e. atriventris*), Almería, 20.v.2016, photographed (F. Rodríguez), D. Parejo-Pulido det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-atriventris-img796331.html>); coastal sands.
- 18) 2♀, Punta Entinas-Sabinar (El Ejido, Almería), 2.viii.2016, photographed (F. Rodríguez), M. Romano det., in BVI ([https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-\(Klug-1835\)-img825605.html](https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-(Klug-1835)-img825605.html) and [https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-\(Klug-1835\)-img825604.html](https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-(Klug-1835)-img825604.html)); (same record in <https://www.biodiversity4all.org/observations/66956791>); coastal sands.
- 19) 1♀, Los Alcornocales Natural Park (Cádiz), 10.x.2016, photographed (G. Hampshire), R. Matias det., in Flickr ([https://www.flickr.com/photos/gails\\_pictures/33181565386/](https://www.flickr.com/photos/gails_pictures/33181565386/) and [https://www.flickr.com/photos/gails\\_pictures/33095144271/](https://www.flickr.com/photos/gails_pictures/33095144271/)); Mediterranean sclerophyllous forest.
- 20) 1♀, Cañada del Tarajal, Conil de la Frontera (Cádiz), 5.vi.2017, A. Verdugo leg. & coll., M. Romano det., in FEI (<http://www.entomologiitaliani.net/public/forum/phpBB3/viewtopic.php?f=85&t=75231&hilit=egregia>; with photograph).
- 21) 1♀, Almería, 10.vi.2017, photographed (F. Rodríguez), M. Romano det., in BVI ([https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-\(Klug-1835\)-img894056.html](https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-(Klug-1835)-img894056.html)); coastal sands.
- 22) 1♀, Almería, 1.vii.2018, photographed (F. Rodríguez), D. Parejo-Pulido det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1002998.html>); coastal sands.

- 23) 1♀, Albacete (Castilla-La Mancha), 5.viii.2018, photographed (M. Alvarez), M. Romano det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1057555.html>); field where *Eryngium campestre* was dominant.
  - 24) 1♀, Badajoz (Extremadura), 15.viii.2018, photographed (A. Cordero), D. Parejo-Pulido det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1033040.html>); near river. Comment: this specimen shows an unusual mesosomal chromatic pattern, where only a thin black pronotal band is visible, with the central mesonotum (between the two lateral round spots of pale pubescence) being apparently of a purplish grey shade.
  - 25) 2♀, Cádiz, 30.ix.2018, both photographed (R. Angulo and O. Ventura), M. Romano det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1062438.html> and <https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1047703.html>); coastal sand dunes.
  - 26) 1♀, ca. 2km NE of Santa Margarita (San Roque, Cádiz), 21.vii.2020, photographed (J. M. Palmero and D. Palmero), D. Parejo-Pulido and K. Williams det., in BD4A (<https://www.biodiversity4all.org/observations/53848117> and <https://www.biodiversity4all.org/observations/53933354>); coastal sands.
  - 27) 1♀, Punta Entinas-Sabinar (El Ejido, Almería), 12.v.2021, photographed (J. B. Vera), D. Parejo-Pulido det., in BD4A (<https://www.biodiversity4all.org/observations/86165349>); coastal sands.
  - 28) 1♀, Punta Entinas-Sabinar (El Ejido, Almería), 13.v.2021, photographed (F. Rodríguez), D. Parejo-Pulido det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1298125.html>), also in BD4A (<https://www.biodiversity4all.org/observations/78837038>); coastal sands.
  - 29) 1♀, ca. 2km N of Santa Margarita (San Roque, Cádiz), 4.vi.2021, photographed (H. Ruido), M. Romano det., in BD4A (<https://www.biodiversity4all.org/observations/81707040>); coastal sands.
  - 30) 1♀, Ciudad Real (Castilla-La Mancha), 7.vii.2021, photographed (F. Hidalgo), D. Parejo-Pulido det., in BVI (<https://www.biodiversidadvirtual.org/insectarium/Dasylabris-egregia-img1320964.html>); Mediterranean sclerophyllous forest (with *Quercus ilex*, *Q. coccifera*, *Cistus* spp.).
  - 31) 1♂ (typical), ca. 5 km ENE of Mijas (Málaga), 19.viii.2021, photographed (D. Bulnes), D. Parejo-Pulido det., in BD4A (<https://www.biodiversity4all.org/observations/91825521>); Mediterranean sclerophyllous scrubland; 426 m a.s.l.
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