



Entomofauna

Zeitschrift für Entomologie

Supplement 22, 164 Seiten

ISSN 0250-4413

Ansfelden, 12. März 2018



THE BEES OF PORTUGAL

(Hymenoptera: Apoidea: Anthophila)

by David BALDOCK, Thomas J. WOOD, Ian CROSS & Jan SMIT

**Printed with the support of the Thomas Witt Foundation
for the promotion of science and research in the field of
zoological systematics**

Entomofauna, Supplementum 22

ISSN-Nr. 0250-4413

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Edited and published by

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Cover Picture

Andrena lateralis female. Despite being one of the larger and more striking *Andrena*, nothing seems to have been published on its pollen preferences, but our observations suggest it is oligolectic on Apiaceae. Photo credit: Ian Cross

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Supplement 22	1-164	ISSN 0250-4413	Ansfelden, 12. März 2018
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The Bees of Portugal (Hymenoptera: Apoidea: Anthophila)

David BALDOCK, Thomas J. WOOD, Ian CROSS & Jan SMIT

Abstract

The present paper provides a list of records, both from literature and from recent collections, of 680 bee species from mainland Portugal. Up to 1996 there were remarkably few published records of Portuguese bees, consisting of only around 325 species. However, in the last 15 years or so there has been a considerable amount of collecting by numerous Hymenopterists, mainly in the Algarve, as well as inspection of unpublished material housed in museums and private collections. This effort has added over 300 species to the list. Further recording is needed, especially in the north. It is thought that the total number of bee species in Portugal could be as high as 700.

Introduction

Portugal is a small country, about one seventh the size of Spain and slightly smaller than England, but being on the extreme western edge of the Palaearctic it has an interesting bee fauna. Many species are restricted to the Iberian Peninsula and some are only found elsewhere in North Africa. However, there are very few published records for the country, the main ones being old e.g. SAUNDERS (1881), DUSMET (1921; 1931), DINIZ (1959; 1960; 1989) and KUHLMANN (1996). This paper is not intended to be a Checklist of the Bees of Portugal, as there are undoubtedly more species yet to be found. It is instead a list of all records of bees known to the authors, both from literature and from unpublished data supplied by various specialists, as well as the recent records of the authors, of A. Livory and R. Coulomb, A. Penado and of many other recorders. However, it is hoped that the present list will encourage other recorders who have collected in Portugal to send their records or specimens to the authors so that the list can be augmented and improved.

The present list covers only the bees of mainland Portugal; BORGES et al. (2005) and WEISSMANN et al. (2017) have listed the bees of the Azores and KRATOCHWIL, AGUIAR & SMIT (2008) have listed the bees of the Madeira archipelago.

Published records:

SAUNDERS (1881): A list of bees collected by A.E. Eaton during a visit to Portugal from April to June 1880, containing 61 species, many of them new species, with localities.

DUSMET (1921): A list of bees collected by him and his associates on a visit by car from Elvas to Porto, from 19-30 June 1921, containing 64 species.

DUSMET (1931): A list of all bees known to him from Portugal, containing 62 species with localities.

DUSMET (1932): A further list of bees collected on his visit to Portugal in 1921.

DINIZ (1959): A list of all Portuguese bees known to him, containing 147 species.

DINIZ (1960): Checklist of the Portuguese Hymenoptera, with 180 bee species (including the 120 species recorded by SAUNDERS and DUSMET.).

DINIZ (1989): A list of bees in Megachilidae (except Osmiini and Megachilini), adding 27 species to those already cited, making a total of 207 species.

WARNCKE (1967): This paper on West Palaearctic *Andrena* added 7 species.

WARNCKE (1976a): A list of all known records of *Andrena* species in Iberia adding 60 new species.

KUHLMANN (1996): A list of 105 species of bees collected in Serra da Estrela in June 1989 and July and August 1990. This list added about 50 more species to the Portuguese list.

Unpublished records:

CÖLLN, RISCH, SORG. A list of all bees collected by them during a rainy week in April 1985 at Sobreda near Lisbon and from a Malaise trap operated there between the 1st of April 1985 and the 17th of April 1986. This list comprises more than 100 species of which about 55 are new species for Portugal. *Andrena* were determined by F. Giesenleitner, *Panurgus* by K.H. Schwammberger, Halictidae by A.W. Ebmer, Megachilidae by D. Peters and *Anthophora* by P. Westrich. This valuable information was supplied by S. Risch.

Almost the entire collection of the aculeate Hymenoptera in the Lisbon Museum (National Museum of Natural History and Science) was destroyed by a fire in 1978. However, the Mendoça Collection was donated after this date and comprises about 250 bee specimens, all collected by five different members of the Mendoça family from numerous sites all over Portugal between 1960 and 2000. However, very few of these specimens had been named. DB visited the Museum in December 2013 and the Curator, Luis Filipe Lopes, very kindly allowed him to take about 250 specimens of bees and wasps back to England on loan. These were determined by DB and by various experts, and were returned to the Museum in May 2014. The Curator again allowed DB to take another 215 bees and wasps back to England on loan; these were all determined and returned to the Museum in 2016. Overall, the Mendoça collection provided the earliest record for 75 previously unpublished Portuguese bee species. The Diniz collection is housed at Coimbra University, but we have not yet had the opportunity to examine this, though a certain amount of the *Colletes* and *Nomada* material has been seen by Schwarz and Kuhlmann, and those records are included below.

By the end of 1996 the total number of published species was around 325, rising to 380 with the inclusion of the records of Cölln, Risch and Sorg. However, very little recording had been carried out in the Algarve.

Most of the more recent records have come from the following seven collectors and predominantly from the Algarve:

- D. Baldock, who visited the Algarve, for a few days annually from 1999 to 2017 and collected mainly around Guia and Silves but also on Monchique, along the south and west coasts and occasionally in southern Baixo Alentejo
- J. Smit who visited the Algarve for two weeks in April/May 2005 and again in July 2011 and April 2017
- A. Livory and R. Coulomb, who visited the Algarve between 2009 and 2016, collecting mainly around Tavira and Aljezur, especially Odeceixe. They also visited other places on the west coast north and south of Lisbon, Mértola in Baixo Alentejo and also Serra da Estrela
- I. Cross who recorded in six provinces from 2011-2017, focusing mostly on the western Algarve
- T.J. Wood, who visited the Algarve for five weeks between 2014 and 2016 and Trás-os-Montes e Alto Douro in the north for one week during June/July 2016
- A. Penado, who collected near Lisbon in 2011 and 2016, and in the north at Alfândega da Fé between 2014-2016 using a large number of pan traps

Many of the records made by these collectors were of species new for Portugal.

Other collectors whose records are cited include:

- H. Teunissen, collected extensively across central and southern Portugal during the 1970s, 80s and 90s, particularly in the Algarve (his records were kindly supplied by M. Schwarz)
- F. Gusenleitner, collected in north Portugal in April/May 1990 (his records were kindly supplied by M. Schwarz)
- H. Tussac, May/June 1987, Algarve (his specimens were kindly given to the authors by O. Berg)
- J. Gusenleitner, collected in the western Algarve in May 1995 (his records were kindly supplied by M. Schwarz)
- M. Schwarz, who worked and collected at Fafe in the far north between 1991 and 1995
- G. Seidler, collected around Fafe from 1991 to 1997 (his records were kindly supplied by M. Schwarz)
- M. Jenner, 1994, 1997, 1998, 2000, 2002, 2014, 2017, central and northern Portugal
- D. Keen, May 1995 and 1996, near Lagoa, Algarve
- P. Hartmann, March/April 1997, western Algarve (his records were kindly supplied by M. Schwarz)
- G. Allen, two weeks near Lagos, Algarve in 2001
- C. Schmid-Egger, various sites all over Portugal, July/August 2001
- H. Whiteley, two weeks near Faro, Algarve in September 2010
- J. Franco, 2011/12, pear orchards north of Lisbon

- C. Reis, 2012-13, pear orchards north of Lisbon
- Albernaz Valente, 2011-13, pan traps near Montemor-o-Novo, Évora
- R. Andrade, 2011-2015, central and northern Portugal
- van Harten, 2012, pan traps at Portalegre
- G. Le Goff, 2 weeks in Algarve 2014
- E. Dufrêne, 2 weeks in Algarve 2014
- J. D'Haeseleer, Algarve between January and August 2015, predominantly in the Alvor region
- Gonçalves, various sites all over Portugal, 2015 and 2016
- M. Carvajal and V. Zina, Lisbon Institute of Agronomy, 2016

Some of these collectors were visiting the Algarve for a week or two on holiday and only collected in their spare time. The contemporary records, combined with the examination of museum material, have added over 300 species to the Portuguese bee list.

The present paper contains a list of 680 species from 55 genera; **Andrenidae 126**, *Andrena* 113, *Camptopoeum* 1, *Flavipanurgus* 4, *Melitturga* 1, *Panurgus* 6, *Panurginus* 1

Apidae 190, *Amegilla* 5, *Ammobates* 4, *Ammobatoides* 1, *Anthophora* 22, *Apis* 1, *Biastes* 1, *Bombus* 13, *Ceratina* 12, *Epeolus* 6, *Eucera* 25, *Melecta* 7, *Nomada* 71, *Pasites* 1, *Tetralonia* 1, *Tetraloniella* 9, *Thyreus* 6, *Xylocopa* 5

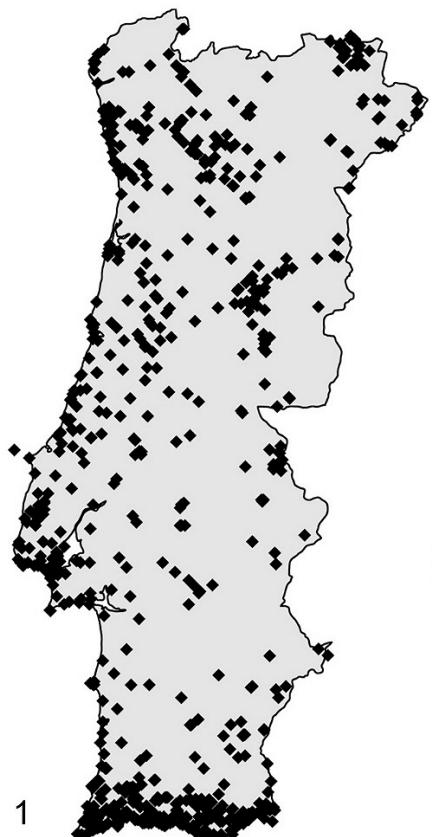
Colletidae 66, *Colletes* 27, *Hylaeus* 39

Halictidae 125, *Ceylalictus* 1, *Dufourea* 4, *Halictus* 20, *Lasioglossum* 70, *Nomioides* 2, *Pseudapis* 3, *Sphecodes* 24, *Systropha* 1

Megachilidae 160, *Afranthidium* 1, *Aglaooapis* 1, *Anthidium* 8, *Anthidiellum* 2, *Chelostoma* 7, *Coelioxys* 15, *Dioxys* 3, *Ensliniana* 1, *Heriades* 3, *Hoplitis* 28, *Icteranthidium* 3, *Lithurgus* 3, *Megachile* 27, *Osmia* 35, *Protosmia* 6, *Pseudoanthidium* 4, *Rhodanthidium* 4, *Stelis* 6, *Trachusa* 3

Melittidae 13, *Dasypoda* 9, *Macropis* 1, *Melitta* 3

This number is similar to the total number of bee species (596) recorded in Andalucia, Spain (ORTIZ-SÁNCHEZ 2006), a region slightly smaller than Portugal. Spain (including the Balearic and Canary Islands), which is about seven times the size of Portugal, has a list of 1034 species (ORTIZ-SÁNCHEZ 2011). Portugal is still very poorly recorded, especially the interior, and more generally in the central and northern parts, and there must be many species that have not yet been found. It seems likely that the true total number of species could be as high as 700. Only five species appear to be endemic to Portugal; *Colletes dinizi*, *Camptopoeum baldocki*, *Dasypoda michezi*, *Flavipanurgus fuzetus* and *Protosmia lusitanica*. All have been described since 1999, reflecting the increased interest in the Portuguese fauna during this period.



1

Fig. 1: The geographical distribution of Portuguese bee records presented in this paper.



2

Fig. 2: The 1936 provinces of Continental Portugal.

Material and methods

First, the literature available to the authors has been searched. Those references that added a species or a new locality to a species are given. A species has been included in this list only when Portugal has actually been mentioned, as opposed to the indeterminate ‘Iberia’. Secondly, numerous specialists have been asked to add to the list any species for which they had unpublished records. Almost all specimens of previously unpublished species that are mentioned in the text have been identified by specialist Hymenopterists, other than those of common species; these specialists are mentioned in Acknowledgements below.

Families and genera are listed in the order given in MICHENER (2007); subgenera are generally not mentioned except where a subgenus is or has been considered to be a valid genus by some authors. Species are listed alphabetically within each genus; subspecies names are only included where this is relevant to Iberia or the West-Mediterranean region.

For each species the following information is given:

Species name

An asterisk * indicates a probable first published record for Portugal. There are probable first records for Portugal for over 200 species in the list.

Geographic distribution

Below the name of certain species we have added a very brief note of its geographic distribution so that readers may be aware of the very restricted range of some of the Portuguese species. Many species are known only from Portugal, Spain, south-west France and the Maghreb; there are a number of Iberian endemic species. Species are listed as West-Mediterranean when records are known only from Iberia, France, Italy, Morocco, Algeria and Tunisia, including the Balearic Islands and the islands of Corsica, Sardinia and Sicily. As a proportion of the total fauna, 5 species (0.7%) are endemic to Portugal, 34 species (5.0%) are endemic to Iberia, 144 species (21.1%) are restricted to the West-Mediterranean and 49 species (7.2%) are North African and/or near-Eastern species with the only European mainland records coming from Iberia.

Portuguese distribution

In addition to global distribution, a Portuguese distribution is also given. Portugal is divided into three sections, northern, central and southern based roughly on the course of the two major rivers of Portugal: the Douro and the Tejo. In common with previous Portuguese faunal publications (e.g. CORLEY 2015), we use the 1936 administrative divisions. Consequently, Minho, Trás-os-Montes e Alto Douro and Douro Litoral comprise northern Portugal, Beira Litoral, Beira Alta, Beira Baixa, Estremadura and Ribatejo comprise central Portugal and Alto Alentejo, Baixo Alentejo and Algarve comprise southern Portugal. ‘Widespread’ indicates presence in all three sections.

A list of the historic provinces from which the species has been recorded is given at the end of each species account. This is in descending geographical basis, from north to south and west to east. To save space Trás-os-Montes e Alto Douro is simply given as Trás-os-Montes.

Status

Species are grouped into four categories based on the number of unpublished records: rare, up to 5 records; scarce, up to 15 records; frequent, up to 30 records and common, over 30 records.

Number of records

All records are listed for rare and scarce species, only provinces are listed for frequent and common species, with the earliest known date for species not previously published as present in Portugal. Because much of the published work refers simply to a locality without specific dates or information on collectors and determiners, all mentions of ‘records’ in this paper refer specifically to unpublished material that either we or experts have seen ourselves.

Pollen Preferences or Host-Parasite Relationship

Notes on pollen preferences and host-parasite relationships are given with Portugal-specific associations for poorly characterised or noteworthy species. The phrase, "confirmed pollen source" refers to our own analysis of pollen loads. Original observations of host-parasite relationships in Portugal are also given.

List of Records

For each species we have listed the known localities in Portugal, with dates and the name of the author or collector and in many cases the name of the determiner.

Acknowledgements

The publication of this paper would not have been possible without the enormous amount of help that we have received from numerous specialists who determined most of the recent material and also supplied us with older data. In respect of each family, subfamily or group these specialists are;

Parasitic species; M. Schwarz, Austria, J. Straka and P. Bogusch, Czech Republic

Colletini; M. Kuhlmann, Germany

Hylaeinae; H. Dathe, Germany, F.J. Ortiz-Sánchez, Spain and B. Tomozii, Romania

Andreninae; E. Scheuchl, Germany, Z. Jozan, Hungary and B. Tomozii

Panurginae; S. Patiny, Belgium

Halictidae; A.W. Ebmer, Austria and A. Pauly, Belgium

Melittidae; D. Michez, Belgium

Megachilini; G. Le Goff, France and C. Praz, Switzerland

Osmiini; G. Le Goff and A. Müller, Switzerland

Anthidiini; G. Le Goff

Anthophorini; F.J. Ortiz-Sánchez, G. Le Goff and M. Schwarz

Eucerini; S. Risch, Germany

Xylocopinae; G. Le Goff

Bombini; L. Castro, Spain and P. Williams, United Kingdom

Z. Jozan determined many boxes of specimens from various families, as did F.J. Ortiz-Sánchez

We also thank L.F. Lopes for his help with the determination of the Mendoça Collection, and D. Notton for extracting Portuguese material from the BMNH collection and J. Devalez for some additional new records and making some improvements on the nomenclature and taxonomy.

Most of the distribution notes have been extracted from;

KUHLMANN et al. 2017: Checklist of the Western Palaearctic Bees (Hymenoptera: Apoidea: Anthophila). <http://westpalbees.myspecies.info>

Photographs were taken *in situ* across Portugal by I. Cross and T.J. Wood

BMNH = British Museum, Natural History, London

FSAGX = Faculté des Sciences agronomiques de l'Etat, Gembloux

MNHNC = Museu Nacional de História Natural e da Ciência, Lisboa

OLML = Oberösterreichisches Landesmuseum, Linz

RNHL = Rijksmuseum van Natuurlijke Historie, Leiden (Naturalis)

C o l l e t i d a e

Colletini

Genus *Colletes* LATREILLE, 1802

27 species. The pollen preferences of the genus have been well characterised in Europe by MÜLLER & KUHLMANN (2008).

Colletes abeillei PÉREZ, 1903

West-Mediterranean. Widespread, common, 45 records. Oligolectic on Asteraceae.

M a t e r i a l : DUSMET 1932: Mitra

Minho, Trás-os-Montes, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve.

Colletes acutiformis NOSKIEWICZ, 1936 *

Southern Portugal, rare, 1 record. Polyleptic with a strong preference for Brassicaceae.

M a t e r i a l : Algarve, Aljezur, Ponta da Atalaia, 2.v.2005, 1♀, det. Kuhlmann, leg. Smit.

Colletes acutus PÉREZ, 1903

West-Mediterranean. Widespread, common, 32 records. Mesolectic on Brassicaceae and Asteraceae. Additional confirmed Portuguese pollen sources include *Thapsia villosa* and *Cistus*.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Carcavelos and Algarve

Douro Litoral, Estremadura, Baixo Altentejo, Algarve.

Colletes albomaculatus (LUCAS, 1849)

Widespread, common, 67 records. Polyleptic with a strong preference for Resedaceae.

M a t e r i a l : DINIZ 1959: Carcavelos, Castelo do Vide, Coimbra, Estoril, Estremoz, Eucalypto, Gambelo, Lagos, Luz, Portimão, Porto, Sagres, Salema, Silves, Soure, Vila do Bispo
Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve.

Colletes brevigena NOSKIEWICZ, 1936 *

Central and Southern Portugal, scarce, 6 records. Polyleptic.

M a t e r i a l : Beira Litoral, Leiria, Pedras Negras, 22.ix.1998, 2♂♂, det. Kuhlmann, leg. M. Jenner
Estremadura, Pataias, Praia de Ouro, 18.v.1996, 1♀, det. Kuhlmann, leg. M. Jenner
Baixo Alentejo, Vila Nova de Milfontes, 20.v.2012, 1♂, det. Kuhlmann, leg. A. Livory & R. Coulomb

Algarve, Silves, 20.iv.2012, 1♂, det. Kuhlmann, leg. Baldock
Algarve, Aljezur, Vale da Telha, 1-9.v.2016, 1♂, det. Kuhlmann, leg. Wood; Algarve, Budens, Monte da Sinceira, 14.v.2017, 1♀, det. Kuhlmann, leg. Cross

[*Colletes canescens* SMITH, 1853]

ORNOSA & ORTIZ-SÁNCHEZ 2004: Algarve. No specimens are known and Kuhlmann considers this record to be doubtful, probably a misidentification for *Colletes gallicus*.

Colletes cunicularius (LINNAEUS, 1761)

Central and Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Figueira de Foz, near Coimbra
Douro Litoral, Mindelo, Vila do Conde, 23.iii.2016, 1♀, det. Baldock, leg. R. Andrade

Colletes daviesanus SMITH, 1846 *

Southern Portugal, rare, 1 record. First record for Iberia. Oligolectic on Asteraceae.

M a t e r i a l : Algarve, Guia, 15.v.2009, 1♂, 1♀, det. Kuhlmann, leg. Baldock

Colletes dinizi KUHLMANN, ORTIZ & ORNOSA 2001

Portuguese endemic. Central and Southern Portugal, scarce, 11 records. No published pollen preferences, but probably oligolectic on Asteraceae, based on observations and because this species is part of the *C. fodiens*-group which is predominantly comprised of Asteraceae oligoleges.

M a t e r i a l : ORTIZ-SÁNCHEZ, ORNOSA & KUHLMANN 2001: Cascais, Boca d'Inferno, 7.vii.1982, 2♂♂, 3♀♀, leg. K.M. Guichard, Cabo de Sines, 25.viii.1969, 2♀♀, Sines, 26.viii.1969, 1♂, Monte Gordo, 5.vi.1967, 2♀♀, all leg. M.A. Dimiz

Estremadura, Pataias, Praia de Ouro, 16.ix.2007, 1♀, det. Kuhlmann, leg. M. Jenner

Estremadura, Nazaré, southern dunes, 19.viii.2015, 1♀, det. Kuhlmann, leg. A. Ivory & R. Coulomb

Algarve, Carrapateira, 9.viii.2001, 2♂♂, 4♀♀, det. Kuhlmann, leg. C. Schmid-Egger
26.viii.2015, 1♂, det. & leg. Cross

20.ix.2015, 1♀, det. Kuhlmann, leg. Wood

Algarve, Tavira, 9.vii.2009, 1♂, 2♀♀, det. Kuhlmann, leg. A. Ivory

Algarve, Aljezur, Praia de Monte Clérigo, 19.vii.2009, 3♀♀, det. Kuhlmann, leg. Baldock

Algarve, Amoreira, 21/22.vii.2015, 2♂♂, 1♀, 28.vii.2015, 5♂♂, 3♀♀, 28.viii.2015, 1♂, 1♀, det. Kuhlmann, leg. Cross

Colletes dusmeti NOSKIEWICZ, 1936

Iberia, France, Morocco. Widespread, frequent, 20 records. Polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Aveiro, Setúbal, Leiria, Lisboa and Algarve
Beira Litoral, Estremadura, Baixo Alentejo, Algarve

Colletes eous MORICE, 1904

Widespread, common, 35 records. Widely polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Serra da Estrela and Serra da Lousã
Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Colletes escalerae* NOSKIEWICZ, 1936**

Iberia, Morocco and Tunisia. Southern Portugal, rare, 2 records. Oligoleptic on Fabaceae.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Algarve, Monte Gordo, 12-19.iii.1999, 4♂♂, leg.
M. Boness, coll. Kuhlmann

Algarve, Faro, Ria Formosa, 6.ii.2016, many hundreds of nests, det. Kuhlmann, phot. J. Devalez

Algarve, Pêra, Praia Grande, 8.ii.2017, large nesting aggregation, det. & leg. Cross

***Colletes fodiens* (FOURCROY, 1785) ssp. *hispanicus* NOSKIEWICZ, 1936 ***

Widespread, common, 50 records. Oligoleptic on Asteraceae.

M a t e r i a l : Estremadura, Cascais, 10.vi.1953, 1♂, leg. N.F. d'Andrade
Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

***Colletes foveolaris* PÉREZ, 1903**

Central and Southern Portugal, rare, 5 records. Oligoleptic on Resedaceae.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Southern Portugal, 3 localities
Beira Alta, Manteigas, Vale do Zézere, 14.v.2016, 2♂♂, det. Kuhlmann, leg. A. Livory & R. Coulomb
Baixo Alentejo, Mértola, 15 km W, 17.iv.2017, 4♂♂, 2♀♀, det. Kuhlmann, leg. Baldock
Baixo Alentejo, Mértola, 15 km S, 18.iv.2017, 1♂, det. Kuhlmann, leg. Baldock
Algarve, Castelejo, 2.iv.1997, 1♂, 1♀, det. Kuhlmann, leg. P. Hartmann
Algarve, Silves, 5.iv.1997, 1♂, det. Kuhlmann, leg. P. Hartmann

***Colletes gallicus* RADOSZKOWSKI, 1891**

Central Portugal, scarce, 3 records. Polyleptic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Coimbra and Lisboa, Cascais Estremadura, Cascais,
20.vi.1954, 2♀♀, det. Kuhlmann, leg. N. F. d'Andrade
Estremadura, Cascais, Boca d'Inferno, 7.vii.1982, 2♂♂, det. Kuhlmann leg. K.M. Guichard
Estremadura, Cabo Espichel, 4.vi.2011, 1♂, det. Kuhlmann, leg. A. Livory & R. Coulomb

***Colletes hederae* WESTRICH & SCHMIDT, 1991 ***

Northern Portugal, rare, 1 record. Polyleptic with a strong preference for *Hedera*.

M a t e r i a l : Douro Litoral, Porto, 9.x.2015, 5♀♀, det. Devalez & Arts, phot. F. Arts.

***Colletes hylaeiformis* EVERSMANN, 1852**

Central and Northern Portugal, rare, 2 records. Narrowly oligoleptic on *Eryngium*.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: central Portugal

Trás-os-Montes, Bragança, Alfândega da Fé, 22.vii.2015, 1♀, det. Kuhlmann, leg. Penado

Beira Alta, Guarda, Almeida, Castelo Bom, 26.vii.2015, 1♂, det. Kuhlmann, leg. A. Goncalves

***Colletes intricans* SPINOLA, 1838**

Iberia and North Africa. Central Portugal, rare, 1 record. Mesolectic on Fabaceae and Resedaceae.

M a t e r i a l : KUHLMANN & ORTIZ-SÁNCHEZ 2007: Estremadura, Marateca, 16.v.1958, 2♂♂. First record for Europe

***Colletes ligatus* ERICHSON, 1835**

West-Mediterranean. Widespread, rare, 5 records. Oligolectic on Apiaceae.

- M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: north and central Portugal; Douro Litoral, Resende, 3.viii.1951, 1♀; 27.viii.1951, 1♀, det. Kuhlmann, leg. N.F. d'Andrade
Estremadura, Trafaria, 21.vii.1950, 1♀, det. Kuhlmann, leg. P.M.F. Verhoeff
Algarve, Portimão, 17.viii.1951, 1♀, det. Kuhlmann, leg. N. d'Andrade
Algarve, Guia, 17.vii.2009, 3♀♂, det. Kuhlmann, leg. Baldock
Algarve, Salema, Boca do Rio, 29.vii.2015, 1♂; 2.ix.2015, 1♀, det. Kuhlmann, leg. Cross

***Colletes maidli* NOSKIEWICZ, 1936 ***

Central and Southern Portugal, rare, 4 records. Polylectic.

- M a t e r i a l : Estremadura, Nazaré, southern dunes, 19.viii.2015, 1♀, det. Kuhlmann, leg. A. Livory & R. Coulomb;
Algarve, Aljezur, Odceixe, 4.vii.2009, 1♀, det. Kuhlmann, leg. A. Livory & R. Coulomb;
Algarve, Carrapateira, 9.vii.2009, 1♀, det. Kuhlmann, leg. A. Livory & R. Coulomb
Algarve, Pêra dunes, 23.vi.2014, 1♀, det. Kuhlmann, leg. Baldock

***Colletes marginatus* SMITH, 1846**

Central and Southern Portugal, scarce, 6 records. First confirmed record for Portugal.
Polylectic.

- M a t e r i a l : [SAUNDERS 1881: Coimbra-Santo António, 3.vi.1880, 1♂, leg. A.E. Eaton. Kuhlmann considers this record to be difficult to confirm because of the difficulty in distinguishing this species from *Colletes pulchellus*, which was described several years after Saunders published this record]
Beira Litoral, Leiria, Pedras Negras, 22.ix.1998, 1♂, 3♀♂, det. Kuhlmann, leg. M. Jenner
Estremadura, Pataias, Praia de Ouro, 16.ix.2007, 1♂, det. Kuhlmann, leg. M. Jenner
Algarve, Carrapateira, 9.vii.2009, 1♀, det. Kuhlmann, leg. A. Livory
Algarve, Carrapateira, 14.x.2016, 1♂, det. & leg. Cross
Algarve, Amoreira, 30.x.2016, 1♂, det. & leg. Cross
Algarve, Aljezur, Ponta da Atalaia, 17.v.2017, 1♂, det. Kuhlmann, leg. Cross

***Colletes mlokossewiczi* RADOSZKOWSKI, 1891**

Central and Southern Portugal, rare, 3 records. Oligolectic on Asteraceae.

- M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Beja and Coimbra
Beira Litoral, Pinhal de Marocos, Coimbra, 30.v.1968, 1♂, det. Kuhlmann, leg. M.A. Diniz
Estremadura, Marateca, 16.v.1958, 5♀♂. RNHL. Kuhlmann, pers. comm.
Alto Alentejo, Montemor-o-Novo, 24.iv.2011, 1♀, det. Kuhlmann, leg. A. Albernaz Valente

***Colletes nigricans* GISTEL, 1857**

Widespread, common, 58 records. Widely polylectic.

- M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Well represented in Portugal to 1550m in Serra da Estrela
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Colletes noskiewiczi* COCKERELL, 1942 ***

Iberia and Morocco. Central Portugal, rare, 1 record. Oligolectic on Asteraceae.

- M a t e r i a l : Estremadura, Setúbal, Troia, 11.ix.1985, 1♀, det. Kuhlmann, leg. K. Cölln

***Colletes pulchellus* PÉREZ, 1903**

Iberia and France. Central and Northern Portugal, rare, 1 record. Polylectic with a strong preference for Fabaceae.

M a t e r i a l : DUSMET 1932: (as *Colletes ibericus* NOSKIEWICZ) Lavos, 5.viii.1926

DINIZ 1959: Mata de Lavos near Figueira de Foz, Coimbra

Douro Litoral, Póvoa de Varzim, Estela, 14.viii.2013, 2♀♀, det. Kuhlmann, leg. R. Andrade

***Colletes similis* SCHENCK, 1853 ***

Northern Portugal, rare, 1 record. Oligolectic on Asteraceae.

M a t e r i a l : Minho, Braga, San Jorge, 15.vi.1991, 4♀♀, det. Kuhlmann, leg. Schwarz

***Colletes succinctus* (LINNAEUS, 1758)**

Widespread, frequent, 16 records. Polylectic with a strong preference for Ericaceae.

M a t e r i a l : DUSMET 1932: Coimbra, KUHLMANN 1996: Serra da Estrela, Vale do Zêzere, viii.1987, 1♂; Lagoa dos Cântaros, 28.vii.1990, 1♂

Minho, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Algarve

***Colletes tuberculiger* NOSKIEWICZ, 1936 ***

Iberian endemic. Central and Southern Portugal, rare, 2 records. Oligolectic on Asteraceae.

M a t e r i a l : Estremadura, Caparica, 13.vii.1982, 4♂♂, det. Kuhlmann, leg. K.M. Guichard
Algarve, Albufeira, Poller, 23.v-6.vi.2004, 1♀, det. Kuhlmann, leg. K.M. Guichard

HYLAEINAЕ

Genus *Hylaeus* FABRICIUS, 1793

39 species. Published pollen preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2014).

***Hylaeus absolutus* (GRIBODO, 1894)**

Southern Portugal, rare, 3 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal except the northern part

Algarve, Sagres, Beliche, 7.v.1995, 1♀, leg. J. Giesenleitner. Coll. Schwarz

Algarve, Carrapateira, 13.v.1995, 1♂, 1♀, leg. J. Giesenleitner. Coll. Schwarz

Algarve, Vila do Bispo, 16.v.1995, 2♂♂, leg. J. Giesenleitner. Coll. Schwarz

***Hylaeus angustatus* (SCHENCK, 1861)**

Central and Northern Portugal, scarce, 9 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: All Portugal except south-west quarter. Minho, Braga, Gondar, 30.iv.1990, 2♂♂, leg. J. Giesenleitner

Minho, Fafe, Lagoa, 5.ix.1994, 1♀; 18.v.1995, 1♀, leg. G. Seidler

Minho, Braga, Vila do Gerês, 31.vii.2001, 1♀, leg. C. Schmid-Egger

Trás-os-Montes, Bragança, Gondesende, 1.vii.2016, 1♀, det. & leg. Wood

Douro Litoral, Padronelo, 29.iv.1990, 2♂♂; Amarante, 2.v.1990, 7♂♂, 1♀; Carneiro, 3.v.1990, 2♂♂; leg. J. Giesenleitner

Beira Alta, Serra da Estrela, 20.iv.2015, 1♂, det. Baldock, confirmed Tomozii, leg. A. Gonçalves

***Hylaeus annularis* (KIRBY, 1802) (sensu NOTTON & DATHE 2008 =*Hylaeus spilotus* FÖRSTER, 1871)**

Widespread, common, 31 records. Probably polylectic.

M a t e r i a l : ERLANDSSON 1986: Lagos, 14.vii.1980, 1♀; ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal.

Minho, Trás-os-Montes, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

***Hylaeus brachycephalus* (MORAWITZ, 1868)**

Widespread, scarce, 12 records. Probably polylectic but commonly encountered on Reseda.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: River Douro basin

Trás-os-Montes, Vila Real, Peso da Régua, 8.v.1990, 1♂, 1♀, leg. J. Gusenleitner

Estremadura, Sesimbra, 14.v.2012, 1♂, 1♀, det. Livory/Baldock, leg. A. Livory & R. Coulomb

Baixo Alentejo, Almograve, 21.v.2012, 3♂♂, det. Livory, leg. A. Livory & R. Coulomb

Baixo Alentejo, Mértola, 15 km S, 17.iv.2017, 1♂, 1♀, det. Baldock/Tomozii, leg. Baldock

Baixo Alentejo, Mértola, 15 km W, 18.iv.2017, 1♂, det. Baldock/Tomozii, leg. Baldock

Baixo Alentejo, São Sebastião dos Carros, 1♂, 1♀, det. & leg. Cross

Algarve, Salema, Boca do Rio, 4.iv.2015, 1♂, 2♀♀, det. Baldock/Wood, leg. Cross/Wood

Algarve, Amoreira, 11.iv.2015, 1♂, 1♀, det. & leg. Cross

Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 1♀, det. Wood/Tomozii, leg. Wood

Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 3♂♂, det. & leg. Wood

Algarve, Barragem de Bravura, 31.iii.2017, 1♂, det. & leg. Cross

Algarve, Vilarinha, 16.iv.2017, 1♂, det. & leg. Cross

***Hylaeus brevicornis* NYLANDER, 1852**

Widespread, frequent, 16 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal

Minho, Trás-os-Montes, Beira Alta, Estremadura, Algarve

***Hylaeus clypearis* (SCHENCK, 1853)**

Widespread, common, 43 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal

Minho, Trás-os-Montes, Beira Alta, Estremadura, Algarve

***Hylaeus communis* NYLANDER, 1852**

Central Portugal, rare, 3 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal except the south-west quadrant

KUHLMANN 1996: Serra da Estrela, Manteigas, 26.vii.1990, 1♀

Beira Alta, Manteigas, Vale do Zêzere, 25.viii.2015, 2♀♀, det. Tomozii, leg. A. Livory & R. Coulomb

Beira Alta, Manteigas, Poço do Inferno, 26.viii.2015, 1♂, 1♀, det. Tomozii, leg. A. Livory & R. Coulomb

Beira Alta, Manteigas, Rota do Sol, 27.viii.2015, 1♀, det. Tomozii, leg. A. Livory & R. Coulomb

***Hylaeus confusus* NYLANDER, 1852**

Central and Southern Portugal. Probably polylectic.

M a t e r i a l : DUSMET 1921: Buçaco near Coimbra
ORNOSA & ORTIZ-SÁNCHEZ 2004: Portel, Algarve

***Hylaeus convergens* DATHE, 2000**

Iberian endemic. Southern and Northern Portugal, rare, 3 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Padornelo, Aveiro;
Douro Litoral, Padronela 3 km south-east of Amarante, 29.iv.1990, 1♂, leg. J. Giesenleitner
Minho, Fafe, Lagoa, 6.viii.1995, 1♀, leg. G. Seidler
Baixo Alentejo, São Sebastião dos Carros, 4.iv.2017, 1♂, det. & leg. Cross

***Hylaeus coriaceus* (PÉREZ, 1895)**

Central and Northern Portugal, rare, 1 record. Probably polylectic.

M a t e r i a l : DUSMET 1931: Mitra, Castelo de Vide
DINIZ 1959: Castelo de Vide, Coimbra, Mitra, Soure
ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal, frequent
Minho, Fafe, Lagoa, 13.viii.1991, 1♂, leg. J. Giesenleitner

***Hylaeus cornutus* CURTIS, 1831**

Widespread, scarce, 6 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Porto
Trás-os-Montes, Bragança, Alfândega da Fé, 25.vii.2015, 1♂, 1♀, det. Wood, leg. Penado
Douro Litoral, Porto, Amarante, 4.v.1990, 1♂, leg. J. Giesenleitner
Douro Litoral, Porto, Padronela, 24.iv.1990, 2♀, leg. J. Giesenleitner
Algarve, Guia, 20.iv.2005, 1♀, det. & leg. Baldock
Algarve, Amoreira, 7.vi.2016, 1♀, det. & leg. Cross
Algarve, Burgau, Barrancão, 2♀, det. & leg. Cross

***Hylaeus crassanus* (WARNCKE, 1972)**

Southern Portugal, rare, 2 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal (south)
Algarve, Aljezur, Praia de Monte Clérigo, 17.vii.2009, 1♂, det. Dathe, leg. Baldock
Algarve, Aljezur, Odeceixe, 25.v.2011, 1♂, leg. A. Ivory

***Hylaeus difformis* (EVERSMANN, 1852) ssp. *hispanicus* WARNCKE, 1972 ***

Iberian endemic subspecies. Southern Portugal, scarce, 7 records. No published pollen preferences, but to date males and females have only been found on *Scrophularia* species.

M a t e r i a l : Algarve, Salema, Praia da Figueira, 11.v.2016, 1♂, det. & leg. Cross
Algarve, Praia da Cordama, 12.iv.2017, 1♂, det. & leg. Cross
Algarve, Vilarinha, 15-16.iv.2017, 3♂♂, 3♀♀, det. & leg. Cross
Algarve, Pedralva, 15.iv.2017, field, det. & leg. Cross
Algarve, Carrapateira, 24.iv.2017, 1♂, det. & leg. Cross
Algarve, Salema, Boca do Rio, 4.v.2017, 1♀, det. & leg. Cross

***Hylaeus dilatatus* (KIRBY, 1802) (sensu NOTTON & DATHE 2008 =*Hylaeus annularis* auct. nec KIRBY)**

Widespread, scarce, 10 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal.
Minho, Braga, Vila Nova de Famalicão, Mouquim, 16.viii.2013, 1♀, det. Tomozii, leg. R. Andrade
Trás-os-Montes, Bragança, Alfândega da Fé, 1.vii.2014, 1♂; 29.v.2015, 1♀, det. Tomozii, leg. Penado
Trás-os-Montes, Serra da Montesinho, Barragem de Serra Serrada, 4.vii.2016, 1♂, det. & leg. Wood
Estremadura, Lisboa, Institute of Agronomy, 18.vii.2016, 1♀, det. Baldock, leg. M. Carvajal
Algarve, Aljezur, Praia de Monte Clérigo, 17.vii.2009, 1♂, det. Dathe, leg. Baldock
Algarve, Aljezur, Odeciexe, 25.v.2011, 1♂, det. Baldock, leg. A. Livory & R. Coulomb
Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♀, det. Tomozii, leg. Wood
Algarve, Aljezur, W of Vale da Telha, 1-9.v.2016, 1♀, det. Tomozii, leg. Wood
Algarve, Salema, Boca do Rio, 18.v.2017, 1♂, det. & leg. Cross

***Hylaeus euryscapus* FÖRSTER, 1871 ***

Southern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : Algarve, Amoreira, 20.ix.2015, 1♀, det. Tomozii, leg. Wood
Algarve, Salema, Praia da Figueira, 22.ix.2015, 1♀, det. Tomozii, leg. Wood
Algarve, Pêra dunes, 22.x.2015, 1♀, det. Wood, leg. Baldock
Algarve, Salema, Boca do Rio, 6.ix.2016, 1♀, det. Tomozii, leg. Cross

***Hylaeus garrulus* (WARNCKE, 1981) ***

Iberian endemic. Northern Portugal, rare, 1 record. Probably polylectic.

M a t e r i a l : Trás-os-Montes, Vila Real, Peso da Régua, 8.v.1990, 1♂, leg. A. Roth

***Hylaeus garrulus* group**

M a t e r i a l : Baixo Alentejo, Mértola, Mina de São Domingos, 3.vi.2016, 1♀, det. Tomozii, leg. A. Livory & R. Coulomb.

***Hylaeus gibbus* SAUNDERS, 1850 (sensu STRAKA & BOGUSCH 2011) ***

Widespread, frequent, 27 records. First confirmed record for Portugal. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: no definite record for Portugal.
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo,
Algarve

***Hylaeus gredleri* FÖRSTER, 1871**

Widespread, scarce, 7 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Lisboa
Minho, Rio Tinto, Espoende, 2.vi.2015, 1♂, det. Tomozii, leg. R. Andrade
Beira Litoral, Costa Nova, Praia da Barra, 11-12.vi.2016, 2♂♂, det. Tomozii, leg. A. Livory & R. Coulomb
Estremadura, Sesimbra, 14.v.2012, 2♂♂, det. Livory/Baldock, leg. A. Livory & R. Coulomb
Baixo Alentejo, Vila Nova de Milfontes, 18.v.2012, 1♂, det. Livory/Baldock, leg. A. Livory & R. Coulomb
Algarve, Lagos, 2.vi.1987, 1♀, det. Dathe, leg. H. Tussac
Algarve, Guia, 20-28.iv.2005, 1♂, 2♀♀, det. Ortiz-Sánchez/Tomozii, leg. Baldock
Algarve, Alvor, Abicada, 27.v.2015, 2♀♀, det. Tomozii, leg. J. D'Haeseleer

***Hylaeus hyalinatus* SMITH, 1843**

Widespread, rare, 5 records. Probably polylectic.

- M a t e r i a l : MÉDINA 1898: Valongo, 1♀, leg. Reis jnr.; KUHLMANN 1996: Serra da Estrela, Vale do Zêzere, viii.1987, 1♀
Douro Litoral, Póvoa de Varzim, Estela, 1.vii.2013, 1♀, det. Tomozii, leg. R. Andrade
Beira Alta, Manteigas, Vale do Zêzere, 25.viii.2015, 4♂♂, 1♀, det. & leg. A. Ivory & R. Coulomb
Algarve, Salema, Praia da Figueira, 28.iv.2016, 1♂, 1♀, det. & leg. Cross
Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 1♀, det. Tomozii, leg. Wood
Algarve, Aljezur, W of Vale da Telha, 1-9.v.2016, 1♂, det. Tomozii, leg. Wood

***Hylaeus imparilis* FÖRSTER, 1871**

Widespread, frequent, 24 records. Probably polylectic.

- M a t e r i a l : ERLANDSSON 1986: (as *Hylaeus diplonymus* SCHULZ) Lagos, 10-28.viii.1980, 5♂♂,
5♀♀; ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal
Trás-os-Montes, Beira Alta, Baixo Alentejo, Algarve

***Hylaeus incongruus* FÖRSTER, 1871 ***

Northern Portugal, rare, 1 record. First record for Iberia

- M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 24.vi.2016, 1♂, det. Tomozii, leg. Penado

***Hylaeus kahri* FÖRSTER, 1871 ***

Southern and Northern Portugal, rare, 3 records. Probably polylectic.

- M a t e r i a l : Douro Litoral, Frende, 17.vi.2016, 1♀, det. & leg. Cross
Algarve, Sagres, Beliche, 7.v.1995, 1♀, leg. J. Gusenleitner
Algarve, Silves, Messines, 12.vii.2014, 1♀, det. Tomozii, leg. R. Andrade

***Hylaeus leptocephalus* (MORAWITZ, 1870) ***

Northern Portugal, rare, 2 records. Probably polylectic.

- M a t e r i a l : Trás-os-Montes, Bragança, Espinhosela, 9.ix.2014, 1♀, det. Tomozii, leg. R. Andrade
Trás-os-Montes, Bragança, 3km N of Fontes, 1.vii.2016, 1♀, det. & leg. Wood

***Hylaeus lineolatus* (SCHENCK, 1861) ***

Central and Northern Portugal, rare, 2 records.

- M a t e r i a l : Trás-os-Montes, Vila Real, Aveção do Cabo, 28.vi.2016, 1♀, det. Tomozii, leg. Wood
Beira Alta, Almeida, Castelo Bom, 26.vii.2015, 1♂, det. Tomozii, leg. A. Goncalves

***Hylaeus meridionalis* FÖRSTER, 1871**

Widespread, scarce, 9 records. Probably polylectic.

- M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal
Minho, Gilmonde, Barcelos, 6.ix.2015, 1♀, det. Tomozii, leg. R. Andrade
Beira Alta, Guarda, Mido, 8.vii.1985, 1♀, leg. E. Speijer
Beira Alta, Viseu, Armamar, 1.viii.2001, 1♂, 1♀, leg. C. Schmid-Egger
Beira Alta, Manteigas, Rota do Sol, 27.viii.2015, 1♀, det. Tomozii, leg. A. Ivory & R. Coulomb
Estremadura, Sobreda, May-Sept 1985, 8♀♀, leg. Cölln, Risch, Sorg

Algarve, Aljezur, 1.vi.1987, 1♀, det. Tomozii, leg. H. Tussac
Algarve, Lagos, 2.vi.1987, ♀, det. Tomozii, leg. H. Tussac
Algarve, Guia, 17.v.1999, 1♀, det. Tomozii; 15.vii.2009, 1♂, 3♀♀, det. Dathe, all leg. Baldock

***Hylaeus penalaris* DATHE, 1979**

Iberian endemic. Southern and Northern Portugal, scarce, 9 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: north Portugal

Minho, Fafe, Lagoa, 6.v.1995, 4♂♂, 1♀, leg. G. Seidler

Minho, Braga, Vila do Gerês, 31.vii.2001, 1♀, leg. C. Schmid-Egger

Trás-os-Montes, Vila Real, Peso da Régua, 8.v.1990, 2♂♂, leg. J. Gusenleitner

Trás-os-Montes, Vila Real, Pardelhas, 28.vi.2016, 1♂, 1♀, det. & leg. Wood

Trás-os-Montes, Bragança, Reconço, 3.vii.2016, 1♂, det. & leg. Wood

Douro Litoral, Gondar, 30.iv.1990, 2♂♂, leg. J. Gusenleitner

Douro Litoral, Amarante, 2.v.1990, 5♂♂, leg. J. Gusenleitner

Baixo Alentejo, Mértola, 5.vi.2016, 1♂, det. Tomozii, leg. A. Livory & R. Coulomb

Baixo Alentejo, São Sebastião dos Carros, 1♂, det. & leg. Cross

***Hylaeus pictipes* NYLANDER, 1852**

Widespread, common, 31 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal.

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

***Hylaeus pictus* (SMITH, 1853) (=*Hylaeus purpurissata* VACHAL)**

Central and Southern Portugal, frequent, 18 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal

Beira Litoral, Estremadura, Alto Alentejo, Algarve

***Hylaeus pilosulus* (PÉREZ, 1903)**

Central and Southern Portugal, rare, 1 record. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Coimbra

Lusitania, 3♂♂, 2♀♀. No date. Rijksmuseum, Stockholm

Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 2♀♀, det. Tomozii, leg. Wood

***Hylaeus praenotatus* FÖRSTER, 1871 ***

West-Mediterranean. Northern Portugal, rare, 2 records. Probably polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Montesinho, 29.vi.2016, 2♀♀, det. Tomozii, leg. Wood

Trás-os-Montes, Moimenta, hills E of, 2.vii.2016, 1♀, det. Tomozii, leg. Wood

***Hylaeus punctatus* (BRULLÉ, 1832) ***

Central Portugal, rare, 2 records. Probably polylectic.

M a t e r i a l : Estremadura, Sesimbra, 3.vi.2011, 1♀, det. Dathe, leg. A. Livory

Estremadura, Corroios, 6.vi.2016, 1♀, det. Tomozii, leg. Penado

***Hylaeus punctulatissimus* SMITH, 1842**

Widespread, rare, 9 records. Narrowly oligoleptic on *Allium*.

M a t e r i a l : DUSMET 1931: Coimbra, 1♂; ORNOSA & ORTIZ-SÁNCHEZ 2004: northern and central Portugal

Trás-os-Montes, Bragança, Rabal, 29.vi.2016, 1♂, det. & leg. Wood

Baixo Alentejo, Mina de São Domingos, 3.v.2017., 1♂, det. & leg. Cross

Algarve, Tavira, 23-25.v.2012, 2♂♂, det. Livory/Baldock, leg. A. Livory & R. Coulomb

Algarve, Lagos, Ponta da Piedade, 2.vi.2015, 2♀♀, det. & leg. Cross

Algarve, Cabanas Velhas, 28.v.2016, 2♂♂, det. & leg. Cross

Algarve, Burgau, 29.iv.2017, 1♂, det. & leg. Cross

Algarve, Meia Praia, 2.v.2017, 1♂, det. & leg. Cross

Algarve, Vale da Telha, 6.v.2017, 1♂, det. & leg. Cross

Algarve, Aljezur, Ponta da Atalaia, 17.v.2017, 1♂, det. & leg. Cross

***Hylaeus signatus* (PANZER, 1798)**

Widespread, scarce, 10 records, Narrowly oligoleptic on *Reseda*.

M a t e r i a l : DUSMET 1931: Soure; ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal

Trás-os-Montes, Bragança, Rabal, 29.vi.2016, 1♂, det. & leg. Wood

Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♂, det. & leg. Wood

Baixo Alentejo, Zambujeira do Mar, 17.vii.2012, 1♂, det. Tomozii, leg. A. Livory & R. Coulomb

Baixo Alentejo, Mina de São Domingos, 3.v.2017, 2♂♂, det. & leg. Cross

Estremadura, Sobreira, 4.iv.1985, 1♀, leg. S. Risch

Estremadura, Sesimbra, 14.v.2012, 1♀, det. Baldock, leg. A. Livory & R. Coulomb

Algarve, Mexilhoeira Grande, 19.viii.2015, 1♂, det. Wood, leg. J. D'Haeseler

Algarve, Cacela Velha, 27.iv.2016, 2♀♀, det. Wood/Tomozii, leg. Wood

Algarve, Sinceirinha, 15.iv.2017, 1♀, det. & leg. Cross

***Hylaeus sinuatus* (SCHENCK, 1853)**

Central and Southern Portugal, scarce, 6 records.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal

Estremadura, Nazaré, south dunes, 19.viii.2015, 1♂, 1♀, det. Tomozii, leg. A. Livory & R. Coulomb

Baixo Alentejo, Mértola, Mina da São Domingos, 3.vi.2016, 2♂♂, det. Tomozii, leg. A. Livory & R. Coulomb; 3.v.2017, 1♂, det. Tomozii, leg. Cross

Algarve, Salema, Boca do Rio, 16.ix.2015, 1♂, 1♀, det. Tomozii, leg. Wood

Algarve, Pêra, Praia Grande, 18.ix.2015, 1♀, det. Tomozii, leg. Wood

Algarve, Salema, Praia da Figueira, 22.ix.2015, 1♂, det. Tomozii, leg. Wood

***Hylaeus soror* (PÉREZ, 1903)**

Southern Portugal, rare, 3 records. Probably polyleptic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Algarve

Algarve, Guia, 28.iv.2004, 2♂♂, 1♀, det. Dathe, leg. Baldock

Algarve, Silves, 20.iv.2005, 1♂, det. Dathe, leg. Baldock

Algarve, Pêra, Praia Grande, 13.v.2016, 2♂♂ det. & leg. Cross

***Hylaeus sulphuripes* (GRIBODO, 1894)**

West-Mediterranean. Central and Southern Portugal, rare, 1 record. Probably polyleptic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Lisboa

Algarve, Tavira, Route de Cachopo, 29.v.2016, 1♂, det. Wood, leg. A. Livory & R. Coulomb

***Hylaeus taeniolatus* FÖRSTER, 1871**

Central and Southern Portugal, frequent, 26 records. Probably polylectic.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 2004: Portugal
Trás-os-Montes, Beira Alta, Estremadura, Alto Alentejo, Algarve

***Hylaeus teruelus* (WARNCKE, 1981)**

possibly a subspecies of *Hylaeus garrulus*, Dathe, pers. comm.

Iberian endemic. Northern Portugal, rare, 1 record. Probably polylectic.

M a t e r i a l : Douro Litoral, Padronelo, 3km southeast of Amarante, 29.iv.1990, 1♂, leg. J. Gusenleitner

***Hylaeus variegatus* (FABRICIUS, 1798)**

Widespread, common, 39 records. Probably polylectic.

DUSMET 1921: Estremoz, Buçaco
Trás-os-Montes, Douro Litoral, Beira Alta, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

A n d r e n i d a e

ANDRENINAE

Genus *Andrena* FABRICIUS, 1775

113 species. Published pollen preference data is from England (CHAMBERS 1968; WOOD & ROBERTS 2017), Central Europe (WESTRICH 1989; AMIET et al. 2010) and Spain (MARTÍN et al. 2015).

***Andrena abjecta* PÉREZ, 1895 ***

Spain and north-west Africa. Southern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♀, det. Tomozii, leg. A. van Harten

***Andrena abrupta* WARNCKE, 1967**

Iberia and Morocco. Central and Southern Portugal, rare, 7 records. No published pollen preference data but highly likely to be oligoleptic on Asteraceae like other *Andrena* (*Chlorandrena*) species. The one available pollen load contained pure *Chrysanthemum*/*Anthemis*-type pollen.

M a t e r i a l : WARNCKE 1967: 2♂♂, 1♀, Algarve, Faro; Pêra
Estremadura, Corroios, 12.v.2016, 1♀, det. Wood, leg. Penado
Ribatejo, Sesimbra, 14.v.2012, 1♀, det. Scheuchl, A. Ivory & R. Coulomb
Algarve, Silves, 20.iv.2012, 1♂, det. Scheuchl, leg. Baldock
Algarve, Pêra dunes, 7.iv.2015, 3♂♂, det. Baldock, leg. Wood
Algarve, Cacela Velha, 200m E, 27.iv.2016, 1♀, det. & leg. Wood; 16.iv.2017, 1♀, det. Tomozii, leg. Baldock

Algarve, Lagos, Ponta da Piedade, 9.iv.2015, 1♂, 1♀, det. & leg. Cross

Andrena aeneiventris MORAWITZ, 1872

Central and Southern Portugal, rare, 5 records. Polylectic.

M a t e r i a l : WARNCKE 1976A: Évora

Estremadura, Lisboa, Institute of Agronomy, apple orchard, 24.iii.2016, 1♀, det. Baldock, leg. M. Carvajal

Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 2♀♀, det. Baldock, leg. A. van Harten

Baixo Alentejo, Vila Nova de Milfontes, 19.v.2012, 1♀, det. Scheuchl, leg. A. Ivory & R. Coulomb

Algarve, Silves, 20.iv.2012, 1♀, det. Scheuchl, leg. Baldock

Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. & leg. Wood

Andrena aerinifrons DOURS, 1873

Central and Southern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Lisboa

Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♂, 3♀♀, det. Scheuchl, leg. A. van Harten

Andrena afrensis WARNCKE, 1967

Widespread, rare, 3 records. Polylectic with a strong preference for Brassicaceae.

M a t e r i a l : WARNCKE 1967: 1♀ Serra da Estrela; Gerês, 1♂

WARNCKE 1976A: Guarda, Serra da Estrela; Braga, Serra do Gerês; Algarve, Lagos

WESTRICH, GUSENLEITNER & AMIET 1997: Covilhã, Sete Fontes, 23.vi.1987, 2♀♀, leg. F. Torres; Unhais da Serra, 1♀ 25.vi.1987, leg. F. Torres; Cabeça, 1♀, 25.vi.1987, leg. F. Torres

Minho, Braga Fafe, Lagoa, 5.vii.1995, 1♂, 1♀, det. Scheuchl, leg. G. Seidler

Trás-os-Montes, 1km N of Bragança, 29.vi.2016, 1♀, det. & leg. Wood

Douro Litoral, Povoa de Varzim, 7.v.1995, 1♀, det. Scheuchl, leg. G. Seidler

Andrena agilissima (SCOPOLI, 1770)

Widespread, common, 36 records. Oligolectic on Brassicaceae.

M a t e r i a l : DUSMET 1931: 2♂♂, 1♀; Almendres; Santarem; Herd da Mira

DINIZ 1959: Corroios; Ribeira de Valverde

Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Andrena albopunctata (ROSSI, 1792)

Central and Southern Portugal, rare, 4 records. Pollen preferences unknown.

M a t e r i a l : ILLIGER 1806: "Portugall" (as *Andrena funebris* PANZER)

WARNCKE 1976A: Coimbra; Viseu; Lisboa; Santarem: Torres Novas

Estremadura, Cascais, 8.iv.1947, 1♀, det. Baldock, leg. N.F. Andrade. BMNH

Estremadura, Mafra, Encarnação, 9.v.2012, 1♀, det. Baldock, leg. C. Reis

Algarve, Lagos, 2.vi.1987, 1♂, det. Jozan/Scheuchl, leg. H. Tussac

Algarve, Carvoeiro, 18.vi.1988, 1♀, det. Wood, leg. J.W. Ismay

Andrena alckenella PERKINS, 1914

Widespread, scarce, 14 records. Polylectic.

M a t e r i a l : WARNCKE 1976a: Lisboa: Ramalhal; Coimbra: Pinhal de Marracos, Figueira da Foz, Ponte da Portelam, near Rio de Vide; Pontevedra: Pontevedra; Guarda: Pinzio
 DARDÓN 2010: Guarda, Pinzio, 1963; Coimbra, 1968; Viana do Castelo, 1968, all coll. Warncke; Lisboa Minho, Barcelos, Gilmonde, 29.ii.2016, 1♀, det. Wood, leg. R. Andrade
 Trás-os- Montes, Vila Real norte, 28.vi.2016, 1♀, det. & leg. Wood
 Trás-os- Montes, Bragança, Gondesende, 1♀, det. & leg. Wood
 Estremadura, Torres Vedras, Quinta Nova da Ermegeira, 14.iv.2011, 2♀♀, det. Tomozii/Wood, leg. J. Franco
 Estremadura, Cabo Espichel, 4.vi.2011, 1♀; 15.v.2012, 1♀, det. Tomozii, leg. A. Livory & R. Coulomb
 Alto Alentejo, Montemor-o- novo, Foros de Vale de Figueira, 4.viii.2011, 1♀, det. Tomozii, leg. A. Albernaz Valente
 Alto Alentejo, Portalegre, Vaiamonte, 1-28.ii.2012, 3♀♀, det. Tomozii, leg. A. Albernaz Valente
 Baixo Alentejo, Mértola, Alcaria river, 25.iii.2016, 1♀, det. Wood, leg. A. Gonçalves
 Algarve, Odeceixe, Aljezur, 24.v.2011, 1♀, det. Tomozii, leg. A. Livory & R. Coulomb
 Algarve, Bensafrim, 11.iv.2015, 1♀, det. Wood, leg. J. D'Haeseler
 Algarve, Tavira grand plaza, 22.iv.2016, 1♀, det. & leg. Wood
 Algarve, Tavira, Cerro da Santo Miguel, 28.iv.2016, 1♀, det. & leg. Wood
 Algarve, Carrapateira, Bordeira, 22.iv.2017, 1♀, det. Tomozii, leg. Cross

Andrena alluaudi BENOIST, 1961

Iberia, Morocco and Tunisia. Central and Southern Portugal, scarce, 14 records. No published pollen preference data but highly likely to be oligolectic on Asteraceae like other *Andrena (Chrysandrena)* species, with the two analysed pollen loads containing pure Asteraceae. *Andryla integrifolia* is a confirmed Portuguese pollen source.

M a t e r i a l : WARNCKE 1976A: Lisboa
 Baixo Alentejo, Vila Nova de Milfontes, Odemira, 28.v.1987, 3♂♂ det. Scheuchl, leg. H. Tussac
 Algarve, Guia, 17.v.1999, 1♂; 4.v.2002, 2♂♂, 1♀; 28.iv.2004, 7♂♂, 4♀♀; 2.v.2008, 5♂♂, 6♀♀, 12.vi.2011, 1♀, all det. Scheuchl, leg. Baldock
 Algarve, Aljezur, Ódeceixe, 24+26.v.2011, 2♀♀, det. Baldock, leg. A. Livory & R. Coulomb
 Algarve, Monte Gordo, Praia do Cabeço, 26.iv.2016, 2♂♂, 2♀♀, det. & leg. Wood
 Algarve, Carrapateira, 26.iv.2016, 3♂♂, 1♀, det. & leg. Cross
 Algarve, Pêra, Praia Grande, 1.v.2016, 1♂; 17.iv.2017, 1♂, both det. & leg. Cross
 Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♂, 1♀, det. & leg. Wood
 Algarve, Amoreira, 14.v/1.vi.2016, 2♂♂, det. & leg. Cross

Andrena alutacea STOECKHERT, 1942 *

Southern and Northern Portugal, scarce, 10 records. No published pollen preferences, but highly likely to be oligolectic on Apiaceae like its close relative *Andrena (Proxiandrena) proxima*. *Thapsia villosa* is a confirmed Portuguese pollen host.

M a t e r i a l : Douro Litoral, Frende, 17.vi.2016, 1♀, det. Wood, leg. Cross
 Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 3♂♂, det. Scheuchl, leg. Baldock
 Baixo Alentejo, Mértola, Alcaria river, 25.iii.2016, 2♀♀, det. Wood, leg. A. Gonçalves
 Algarve, Silves, 16-20.iv.2012, 1♂, 4♀♀, det. Scheuchl, leg. Baldock
 Algarve, Salema, 15.iv.2016, 1♂, 2♀♀, det. Wood, leg. Cross
 Algarve, Cerro de Santo Miguel, 28.iv.2016, 1♂, 1♀, det. & leg. Wood
 Algarve, Barragem de Bravura, 31.iii.2017, 1♂, det. & leg. Cross
 Algarve, Burgau, Barrancão, 7-9.iv.2017, 1♂, 2♀♀, det. & leg. Cross
 Algarve, Marmalete, 18.iv.2017, field, det. & leg. Cross

Andrena ampla WARCKE, 1967

Central and Southern Portugal, rare, 2 records. No published pollen preferences, but highly likely to be oligoleptic on Apiaceae like its close relative *Andrena (Proxiandrena) proxima*.

M a t e r i a l : WARCKE 1967: Matto do Fundão, 1♀. WARCKE 1976A: Faro Algarve, Lagos area, 20.iii.1967, 2♂♂, det. Scheuchl, leg. K.M. Guichard, BMNH Algarve, Santa Bárbara de Nexe, 20.iv.2005, 1♂, det. Scheuchl, leg. Baldock

Andrena angustior (KIRBY, 1802)

Widespread, rare, 4 records. Polylectic.

M a t e r i a l : WARCKE 1967: 1♀ Mata do Fundão, 1♂, 1♀; Cardigos, (*Andrena angustior impressa*)
WARCKE 1976A: Coimbra: Cardigos; Ponte da Portela; Castelo Branco: Fundão (*Andrena angustior impressa*)
Minho, Braga, Fafe, Lagoa, 18.ii.1995, 2♂♂, 3♀♀; 15.iii.1995, 2♀♀, det. Scheuchl, leg. G. Seidler
Algarve, Lagos, Bensafrim, 5.iii.2015, 1♀, det. Tomozii, leg. Cross
Algarve, Vilarinha, 16.iv.2017, 1♀, det. Tomozii, leg. Cross.

Andrena antigana PÉREZ, 1895

Iberia and North Africa. Widespread, rare, 5 records. No published pollen preferences. Possibly oligoleptic on Brassicaceae, with all seven analysed Portuguese pollen loads containing pure Brassicaceae pollen.

M a t e r i a l : WARCKE 1976A: Coimbra: Figueira da Foz; Lisboa: Caparica
Minho, Braga, Fafe, Lagoa, 18.ii.1995, 9♂♂, det. Scheuchl, leg. G. Seidler
Estremadura, Caparica, 19.iii.1946, 1♀, det. Scheuchl, leg. N.F. d'Andrade, BMNH
Algarve, Guia, 2.v.2008, 1♀, det. Wood, leg. Baldock
Algarve, Monte Gordo, 23.iv.2016, 2♀♀, det. & leg. Wood
Algarve, Altura, near Monte Gordo, 23.iv.2016, 4♀♀, det. & leg. Wood

Andrena assimilis RADOSZKOWSKI, 1876

Andrena gallica SCHMIEDEKNECHT is the same taxon as *Andrena assimilis*, but it remains unclear if *Andrena gallica* is a distinct species or just a subspecies of *Andrena assimilis*. Scheuchl, pers. comm. For now, all records are considered *Andrena assimilis* s.l.)

Central and Southern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : DUSMET 1931: *Andrena thoracica* var. *assimilis*, Coimbra, 1♀; Corroios, 1♀ (this record is certainly conspecific with *Andrena gallica* resp. *Andrena assimilis gallica* Scheuchl, pers. comm.)
WARCKE 1976A: Coimbra: Guipúzcoa; Sobreiro (as *Andrena assimilis gallica*)
GUSENLEITNER & SCHWARZ 2002: Portugal (as *Andrena gallica*)
Baixo Alentejo, Vila Nova de Milfontes, 14.vii.1971, 1♀, det. Scheuchl, leg. N. Mendoça. MNHNC, coll. Mendoça
Algarve, Carrapateira, 3.iv.2015, 2♀♀, det. & leg. Wood

Andrena astrella WARCKE, 1975

Iberian endemic

Central and Southern Portugal, rare, 5 records. No published pollen preferences. The two available Portuguese pollen loads contained pure *Raphanus raphanistrum* pollen.

M a t e r i a l : WARCKE 1976A: Coimbra: Cardigos; Lisboa: Seixal
 Alto Alentejo, Portalegre, Vaiamonte, ii.2012, 1♀, det. Tomozii, leg. A. van Harten
 Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♂, det. Scheuchl, leg. Baldock
 Algarve, Pêra dunes, 2.iv.2015, 4♂♂, det. Cross/Wood, leg. Wood
 Algarve, Tavira grand plaza, 22.iv.2016, 2♀♀, det. & leg. Wood
 Algarve, Monte Gordo, Altura, 23.iv.2016, 1♂, det. & leg. Wood

***Andrena avara* WARCKE, 1967 ***

Southern and Northern Portugal, rare, 5 records. Pollen preferences unknown.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 15.iii.1995, 3♂♂; 4.iii.1995, 2♂♂, det. Scheuchl, leg. G. Seidler
 Trás-os-Montes, Bragança, Alfândega da Fé, 27.v.2014, 1♀, det. Tomozii, leg. A. Penado
 Algarve, Guia, 12.iii.2009, 1♀, det. Scheuchl, leg. Baldock
 Algarve, Aljezur, W of Vale da Telha, 1♀, det. & leg. Wood

***Andrena bayona* WARCKE, 1975**

Iberian endemic

Northern Portugal. Pollen preferences unknown.

M a t e r i a l : WARCKE 1976A: Vizeu: Resende, 31.viii.1947, leg. N.F. d'Andrade

***Andrena bellidis* PÉREZ, 1895 ssp. *acutiformis* WARCKE, 1980**

Iberia and north-west Africa. Central and Southern Portugal, scarce, 12 records. Pollen preferences unknown. ssp. *acutiformis* is endemic to the Iberian Peninsula, the nominate form is endemic to the Maghreb, Scheuchl, pers. comm.

M a t e r i a l : WARCKE 1976A: Coimbra; Lisboa; Algarve, Pêra
 Estremadura, Lisboa, 7.v.1946, 1♀, leg. N.F. d'Andrade. BMNH
 Alto Alentejo, Portalegre, Vaiamonte, iii-iv.2012, 19♂♂, 9♀♀, det. Scheuchl, leg. A. van Harten
 Alto Alentejo, Évora, 26.ix.2014, 1♀, det. Baldock, leg. A. Livory & R. Coulomb
 Baixo Alentejo, Castro Verde, 6.iii.2015, 2♂♂, 1♀, det. Wood, leg. J. D'Haeseleer
 Baixo Alentejo, Beja, Mértola, Alcaria River, 25.iii.2016, 2♂♂, det. Baldock, leg. A. Goncalves
 Baixo Alentejo, Mértola, 15 km S, 17.iv.2017, 2♂♂, det. & leg. Baldock
 Algarve, Salema, Boca do Rio, 4.iv.2014, 1♂, det. Scheuchl, 4.iv.2015, 1♂, det. & leg. Wood; 9.iv.2016, 2♂♂, 1♀, det. & leg. Cross
 Algarve, Lagos, Ponta da Piedade, 2.iii.2015, 1♂, det. Baldock, leg. Cross
 Algarve, Budens, Monte da Sinceira, 20.iv.2016, 4♂♂, det. & leg. Cross
 Algarve, Giões, 4.iv.2017, 4♂♂, det. & leg. Cross

***Andrena bicolor* FABRICIUS, 1775**

Widespread, scarce, 15 records. Polylectic.

M a t e r i a l : DUSMET 1921: Buçaco, 1♀; Estremoz, 1♀; Famalicão, 1♂; Porto, 1♀
 WARCKE 1976A: Coimbra: Buçaco, Pinhal de Marrocos, Figueira da Foz; Castelo Branco: Matta do Fundão, São Fiel; Porto: Porto; Braga: Famalicão
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 7.vi.1989, 1♀
 Minho, Braga, Fafe, Lagoa, 5/18.ii.1995, 1♂ 11♀; 4/15.iii.1995, 1♂, 2♀♀; 1.iv.1995, 2♀♀; 5.vii.1995, 1♀, all det. Scheuchl, leg. G. Seidler
 Trás-os-Montes, Gilmonde, Barcelos, 21.v-4.vi.2012, 1♀, det. Wood, leg. R. Andrade
 Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 1♀, det. & leg. Wood
 Douro Litoral, Vila do Conde, Mindelo, 23.iii.2016, 1♀, det. Tomozii, leg. R. Andrade

Douro Litoral, Malta, 14.vi.2013, 1♀, det. Baldock, leg. R. Andrade
 Douro Litoral, Chapa, 18.vi.2016, 1♀, det. & leg. Cross
 Beira Alta, Manteigas, Vale do Zêzere, 17.vi.2016, 1♀, det. D. Genoud, leg. A. Ivory & R. Coulomb
 Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♀, det. Wood, leg. A. van Harten
 Alto Alentejo, Évora, Mora, vi.2013, 1♂, det. Scheuchl, leg. A. Albernaz Valente
 Algarve, São Brás de Alportel, 28.ii.2015, 1♂, det. Wood, leg. A. Gonçalves

Andrena bicolorata (ROSSI, 1790)

Central and Southern Portugal, rare, 5 records. No published pollen preferences, but probably oligoleptic on Brassicaceae. Three analysed pollen loads contained pure Brassicaceae and confirm *Sinapis alba* as a Portuguese pollen source.

M a t e r i a l : WARCKE 1976A: Lisboa
 Estremadura, Lisboa, Lisbon Institute of Agronomy, 7.iv.2016, 1♂, det. Tomozii, leg. M. Carvajal
 Algarve, Mexilhoeira Grande, iii.1993, 1♂, det. Tomozii, leg. A. Gardiner
 Algarve, Guia, 12.iii.2009, 1♀, det. Scheuchl, leg. Baldock
 Algarve, Salema, Praia da Figueira, 5.iv.2015, 4♀♂, det. Baldock, leg. Wood
 Algarve, Portimão, 6.iv.2015, 1♀, det. Baldock, leg. Wood

Andrena bimaculata (KIRBY, 1802)

Widespread, scarce, 14 records. Polylectic.

M a t e r i a l : WARCKE 1976A: Coimbra: Pinhal de Marrosos; Castelo Branco: Castelo Novo; Lisboa
 Minho, Braga, Fafe, Lagoa, 4/15.iii.1995, 11♂, 8♀♀; 1/6.iv.1995, 3♀♀; 1.v.1995, 6♂♂; 5.vii.1995, 2♂♂,
 det. Scheuchl, leg. G. Seidler
 Trás-os-Montes, Vila Real, 1km E of Pardelhas, 28.vi.2016, 1♂, det. & leg. Wood
 Trás-os-Montes, Serra do Montesinho, Alto Falgueirão, 30.vi.2016, 1♂, det. & leg. Wood.
 Trás-os-Montes, Serra da Montesinho, Barragem de Serra Serrada, 29.vi.2016, 2♀♀, det. & leg. Wood
 Trás-os-Montes, PN Douro Internacional, 8.iv.2017, 1♀, det. Tomozii, leg. M. Jenner
 Beira Alta, Serra da Estrela, 20.iv.2015, 2♂♂, det. Wood, leg. A. Gonçalves
 Estremadura, Pataias, Praia do Ouro, 30.iv.-1.v.2000, 2♀♀, det. Baldock, leg. M. Jenner
 Alto Alentejo, Portalegre, PN Serra São Mamede, 3.iv.2017, 1♀, det. Tomozii, leg. M. Jenner
 Baixo Alentejo, Milfontes, Odemira, 28.v.1987, 1♂, det. Scheuchl, leg. H. Tussac

[*Andrena boyerella* DOURS, 1872]

Most probably all records of *Andrena boyerella* in Iberia are *Andrena leucolippa*. As far as I can see, *A. boyerella* is restricted to north-west Africa, and all records from Europe are *Andrena leucolippa*. Scheuchl, pers. comm.

M a t e r i a l : SAUNDERS 1881: (as *Andrena distincta* LUCAS) Algarve, near Monchique, 19.v.1880,
 1♀, leg. A.E. Eaton
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500 m, 7.vi.1989, 1♀]

Andrena cineraria (LINNAEUS, 1758)

Central and Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : WARCKE 1967: Guarda
 WARCKE 1976A: Serra da Estrela, São Tiago
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 5.vi.1989, 1♀
 Trás-os-Montes, Ermelo, Mondim de Basto, Vila Real, 30.iv.2016, 1♂, det. Baldock, leg. R. Andrade

Andrena cinerea BRULLÉ, 1832

Widespread, frequent, 30 records. No published pollen preference data but highly likely to be oligolectic on Asteraceae like other *Andrena* (*Chlorandrena*) species. Analysis of eight pollen loads supports this position, with *Crepis vesicaria* a confirmed Portuguese pollen source.

M a t e r i a l : WARNCKE 1976A: (as *Andrena cinerea elliptica* PÉREZ): Coimbra: Serra de Boa Viagem; Lisboa; Algarve, Faro, São Bartolomeu de Messines
Trás-os-Montes, Beira Litoral, Estremadura, Algarve

[*Andrena coitana* (KIRBY, 1802)]

Probable misidentification, RASMONT et al. (2013) list *Andrena coitana* in Iberia as restricted to the Pyrenees.

ILLIGER 1806: Portugal]

Andrena colletiformis MORAWITZ, 1874

Central and Southern Portugal, scarce, 11 records. No published pollen preferences. *Daucus carota* is a confirmed Portuguese pollen source.

WARNCKE 1976A: Lisboa: Caparica, Cascais, Praia das Maçãs, Sintra; Santarem: Ado Pinto; Évora
M a t e r i a l : Estremadura, Sobreda, 24.v-13.vi, 1985, 1♀, det. F. Gusenleitner, leg. Cölln, Risch,
Sorg

Estremadura, Sesimbra, 14.v.2012, 1♀, det. Scheuchl, leg. A. Livory & R. Coulomb
Estremadura, Torres Vedras, 16.v.2012, 1♂; Mafra, 15-16.v.2012, 2♀♀, all det. Baldock, leg. C. Reis
Alto Alentejo, Évora, Mora, vii.2013, 1♀, det. Scheuchl, leg. A. Albernaz Valente
Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 2♂♂, 3♀♀, det. Baldock, leg. A. van Harten
Algarve, Odolouce, 22.vi.1988, 1♀, det. Wood, leg. J.W. Ismay
Algarve, Querença, 28.iv.2004, 1♀; Silves, 22.vi.2014, 1♂, all det. Scheuchl, leg. Baldock
Algarve, Salema, Boca do Rio, 7.iv.2015, 1♂, det. Baldock, leg. Wood
Algarve, Portimão, Figueira, 6.iv.2015, 2♀♀, 2♂♂, det. Baldock, leg. Wood
Algarve, Tavira, Butoque, 25.iv.2016, 1♀, det. & leg. Wood

Andrena combinata (CHRIST, 1791)

Widespread, scarce, 7 records. Polylectic.

M a t e r i a l : WARNCKE 1967: (as *Andrena combinata crudelis* WARNCKE) Braga; Castelo Branco
WARNCKE 1976A: (as *Andrena combinata crudelis*): Coimbra: Pinhal de Marrocos
Minho, Braga, Fafe, Lagoa, 1.iv.1995, 3♂♂; 1.v.1995, 1♂; 6.v.1995, 6♂♂, 4♀♀, det. Scheuchl, leg. G. Seidler

Trás-os-Montes, Bragança, Montesinho, 29.vi.2016, 1♀, det. & leg. Wood
Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 3♀♀, det. Jozan/Scheuchl, leg. Baldock
Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 1♀, det. & leg. Wood
Algarve, Burgau, Barrancão, 7.iv.2017, 1♀, det. Tomozii, leg. Cross

Andrena congruens SCHMIEDEKNECHT, 1884

Central Portugal. Polylectic. *Andrena confinis* STÖCKHERT is considered a valid species (see SCHMIDT et al. 2015; KUHLMANN et al. 2018) and is known from the Picos de Europa in northern Spain (det. Scheuchl, leg. Baldock). The true identity of the Portuguese material listed below is not clear and could belong to either species.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 7.vi.1989, 1♀

***Andrena corax* WARNCKE, 1967**

Iberian endemic. Southern Portugal. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Algarve, Armação de Pêra

***Andrena cyanomicans* PÉREZ, 1895 ***

Northern Portugal, rare, 3 records. Oligolectic on Brassicaceae.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 15.iii.1995, 2♀♀; 1/6.iv.1995, 2♂♂, 2♀♀; det. Scheuchl, leg. G. Seidler

***Andrena dinizi* WARNCKE, 1975**

Iberian endemic. Central Portugal. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Coimbra, Pinhal de Marrocos; Ponte da Portela

***Andrena discors* ERICHSON, 1840 ***

Previously known only from Spain and north-west Africa. Central and Southern Portugal, rare, 4 records. No published pollen preferences. Analysis of two pollen loads suggests polylecty, with loads containing Brassicaceae, Cistaceae, Asteraceae, *Echium*, and Geraniaceae.

M a t e r i a l : Estremadura, Torres Vedras, Quinta Nova d'Ermegereira, 14.iv.2011, 4♀♀, det. Scheuchl, leg. J. Franco

Estremadura, Torres Vedras, Ermegereira, 11.iv.2012, 1♀, det. Baldock/Scheuchl, leg. C. Reis

Algarve, Tavira, Santo Estêvão, 25.iv.2016, 1♀, det. & leg. Wood

Algarve, Burgau, Barrancão, 2.iv.2017, 1♀, det. & leg. Cross

***Andrena djelfensis* PÉREZ, 1895 ***

Southern Portugal, scarce, 8 records. No published pollen records. Possibly polylectic with a preference for Cistaceae, with five analysed Portuguese pollen loads containing *Cistus ladanifer* and *Cistus albidus* with traces of Asteraceae, Brassicaceae and Fabaceae. More study is required.

M a t e r i a l : Baixo Alentejo, Beja, Mértola, Alcaria River, 25.iii.2016, 1♂, det. Baldock, leg. A. Goncalves

Algarve, Guia, 12.iii.2009, 4♂♂, 1♀, det. Scheuchl, leg. Baldock

Algarve, Benagil, near Carvoeiro, 2.iv.2015, 1♀, det. & leg. Wood

Algarve, Salema, Boca do Rio, 4.iv.2015, 1♀, det. Baldock, leg. Wood

Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 3♀♀, det. Baldock, leg. Wood

Algarve, Salema, Figueira, 16.ii.2016, 2♂♂, det. Wood, leg. Cross

Algarve, Lagos, Barragem de Bravura, 27.iii.2015, det. & leg. Cross

Algarve, Salema, 13.iv.2016, 1♀, det. & leg. Cross

***Andrena espanola* WARNCKE, 1967**

Central and Southern Portugal, rare, 2 records. Pollen preferences unknown. It is reasonable to regard *Andrena espanola* as a distinct species, and not as the western ssp. of *Andrena truncatilabris*, because the penis valves differ clearly and constantly from those of *Andrena truncatilabris* in the Eastern Mediterranean, Scheuchl, pers. comm.

M a t e r i a l : WARCKE 1976a: (as *Andrena truncatilabris espanola*) Coimbra; Algarve, Faro; Paderne
Estremadura, Lisboa, 16.iii.1946, 1♂, det. Scheuchl, leg. N.F. d'Andrade. BMNH
Estremadura, Lisbon Institute of Agronomy, 27.iv.2016, 1♂, det. Tomozii, leg. M. Carvajal

***Andrena fabrella* PÉREZ, 1903**

Widespread, scarce, 7 records. No published pollen records. Six analysed Portuguese pollen loads contained *Cistus ladanifer* with traces of Asteraceae and Brassicaceae. More study is required.

M a t e r i a l : WARCKE 1976A: Coimbra: Figueira da Foz, Serra da Boa Viagem; Castelo Branco: Sobreiral; Lisboa
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 3.vi.1989, 5♀♀
Trás-os-Montes, Bragança, Alfândega da Fé, 17.iv.2015; 1♀; 26.v.2015, 1♀; vi-viii.2015, 6♀♀, all det.
Wood, leg. Penado
Beira Litoral, Leiria, Portinho, 8-20.iv.1970, 1♂, det. Scheuchl, leg. J.F. Perkins. BMNH
Alto Alentejo, Montemor-o-Novo, 1.v.2011, 1♀, det. Scheuchl, leg. A. Albernaz Valente
Algarve, Rocha da Penha, Benafim, 20.iv.2012, 1♂, det. Scheuchl, leg. Baldock
Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 5♂♂, 8♀♀, det. Baldock, leg. Wood

***Andrena falsifica* PERKINS, 1915 ***

Northern Portugal, rare, 1 record. Polylectic, though possibly with a preference for *Potentilla*.

M a t e r i a l : Trás-os-Montes, Vila Real, Lamas do Olo, 30.iv.2016, 1♀, det. Tomozii, leg. R. Andrade

***Andrena ferrugineicrus* DOURS, 1872**

Southern Portugal, rare, 3 records. No published pollen preferences. Probably oligoleptic on Brassicaceae, with the only available Portuguese pollen load and one additional load from Ibiza, Spain containing pure Brassicaceae pollen.

M a t e r i a l : DUSMET 1931: Mitra
Algarve, Silves, 20.iv.2012, 2♀♀, det. Scheuchl, leg. Baldock
Algarve, Portimão, Figueira, 6.iv.2015, 1♀, det. Baldock, leg. Wood
Algarve, Burgau, Barrancão, 7.iv.2017, 1♀, det. & leg. Cross

***Andrena fertoni* PÉREZ, 1895 ***

Iberia and Algeria. Southern Portugal, rare, 1 record. No published pollen preference data but highly likely to be oligoleptic on Asteraceae like other *Andrena* (*Chrysandrena*) species.

M a t e r i a l : Algarve, Guia, 17.v.1999, 1♀, det. Scheuchl, leg. Baldock

***Andrena flavipes* PANZER, 1799**

Widespread, common, 79 records. Widely polylectic.

M a t e r i a l : SAUNDERS 1881: (as *Andrena fulvicrus* KIRBY) Sintra, 27.iv.1880, 1♂; Coimbra-Santo António, 3.vi.1880, 1♀, leg. A.E. Eaton
DUSMET 1921: Porto, 3♀♀; Buçaco, 1♀
WARNCKE 1976A: numerous localities in north and south Portugal
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 7.vi.1989, 1♀

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Algarve

***Andrena florea* FABRICIUS, 1793**

Widespread, frequent, 22 records. Narrowly oligolectic on *Bryonia*.

M a t e r i a l : MÉDINA 1898: São Mamede, 1♀, leg. A. Nobre

DUSMET 1931: Ribeira de Valverde, 1♀

WARNCKE 1976A: Coimbra: Pinhal de Marrocos; Santarem: Coruche; Algarve, Monchique
Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Algarve

***Andrena florentina* MAGRETTI, 1883**

West-Mediterranean. Central and Northern Portugal, rare, 3 records. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1967: (as *Andrena florentina subflorina* WARNCKE) Lisboa

WARNCKE 1976A: (as *Andrena florentina subflorina*) Coimbra: Pinhal de Marrocos, Ponte da Portela,
near Rio de Vide; Castelo Branco: São Fiel; Lisboa

Minho, Barcelos, Gilmonde, 28.i.2013, 1♂, det. Scheuchl, leg. R. Andrade

Estremadura, Lisboa, 16.iv.1946, 1♀, det. Scheuchl, leg. N.F. d'Andrade. BMNH

Estremadura, PN das Serras de Aire e Candeeiros, Arrimal, 5.iv.2017, 2♀♀, det. Tomozii, leg. M. Jenner

***Andrena fulva* (MÜLLER, 1766)**

Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : WARNCKE 1976a: Porto

Douro Litoral, Povoa de Varzim, 9.iv.1995, 1♀, det. Scheuchl, leg. G. Seidler

***Andrena fulvago* (CHRIST, 1791)**

Central and Southern Portugal. Oligolectic on Asteraceae.

M a t e r i a l : SAUNDERS 1881: Algarve, São Barnabé-São Bartolomeu de Messines, 13.v.1880, 1♀,
leg. A.E. Eaton

WARNCKE 1976A: Coimbra: Cumeada

***Andrena fulvicornis* SCHENCK, 1853 ***

Central and Southern Portugal, scarce, 17 records. No published pollen preferences but likely to be oligolectic on Apiaceae like its close relative *Andrena nitidiuscula*. Three analysed pollen loads from the spring generation contained pure Apiaceae, with *Daucus carota* a confirmed Portuguese pollen source.

M a t e r i a l : Algarve, Quarteira S.L., 16-19.vi.1978, 1♀, det. Scheuchl, leg. K.M. Guichard. BMNH
Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Andrena fuscipes* (KIRBY, 1802)**

Central and Northern Portugal, rare, 2 records. Oligolectic on Ericaceae.

M a t e r i a l : MÉDINA 1898: Senhora da Hora, 1♀, leg. A. Nobre

WARNCKE 1976A: North Portugal: Lusitanian

KUHLMANN 1996: Serra da Estrela, Lagoa dos Cântaros 1650m, 28.vii.1989, 5♂♂, 3♀♀; Penhas da Saúde 1500m, 22-29.vii.1990, 12♂♂; Torre 2000m, 4.viii.1990, 1♀; Vale de Candieira 1400m, 2.viii.1990, 2♂♂, 3♀♀
Douro Litoral, Amarante, Chapa, 10.ix.2016, 1♀, det. & leg. Cross
Beira Alta, Serra da Estrela, x.2014, 1♀, det. Wood, leg. A. Gonçalves

***Andrena gelriae* s.l. VAN DER VECHT, 1927 ***

Central and Northern Portugal, rare, 2 records. Oligoleptic on Fabaceae. This is a taxonomically challenging group, with several named subspecies including ssp. *gredana* WARNCKE reported from Spain and Portugal only. Until this species complex is resolved it is best to refer to this group as *Andrena gelriae* s.l.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 1/6.v.1995, 6♀♀, det. Scheuchl, leg. G. Seidler
Beira Alta, PN Serra da Estrela, 20.iv.2015, 1♂, det. Tomozii, leg. A. Gonçalves

***Andrena granulosa* PÉREZ, 1902**

Widespread, scarce, 7 records. Oligoleptic on Cistaceae.

M a t e r i a l : SAUNDERS 1881: Monchique 550m (Algarve), 20.v.1880, 1♀, leg. A.E.Eaton
WARNCKE 1976A: Coimbra: Serra da Boa Viagem; Castelo Branco: Fundão; Bragança: Vimioso Trás-os-Montes, Alfândega da Fé, Bragança, 17.iv.2015, 1♀, det. Wood/Tomozi, leg. A. Penado Estramadura, Pataias, Praia do Ouro, 1.v.2000, 1♀, det. Scheuchl, leg. M. Jenner
Estremadura, Cabo Espichel, 15.v.2012, 1♂, det. Scheuchl, leg. A. Livory & R. Coulomb
Estremadura, PN das Serras de Aire e Candeeiros, Covão do Feto, 27.iv.2014, 1♀, det. Scheuchl, leg. M. Jenner
Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 2♂♂, 9♀♀, det. Wood/Tomozi, leg. Wood
Algarve, Salema, Carriços, 12.iv.2016, 1♀, det. Wood, leg. Cross
Algarve, Barragem de Bravura, 30.iii.2017, 2♂♂, det. Tomozii, leg. Cross

***Andrena hedikae* JÄGER, 1934**

Central and Southern Portugal, rare, 2 records. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Algarve, Monchique
Estremadura, Sobreda, 24.v-25.vi.1985, 3♀♀, det. F. Gusenleitner, leg. Cölln, Risch, Sorg

***Andrena hesperia* SMITH, 1853**

Widespread, frequent, 30 records. Oligoleptic on Asteraceae.

M a t e r i a l : WARNCKE 1976A: Coimbra: Pinhal de Marrosos, Serra da Boa Viagem; Algarve, Monchique
Trás-os-Montes, Beira Litoral, Beira Alta Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Andrena hispania* WARNCKE, 1967**

Iberia, France and Morocco.

Widespread, common, 36 records. No published pollen preferences. Analysis of three pollen loads and observations suggest polylecty with a preference for Cistaceae. Confirmed Portuguese pollen sources include *Carpobrotus edulis*, *Cistus ladanifer*, *Cistus salvifolius*, *Halimium calycinum* and *Thapsia villosa*.

M a t e r i a l : WARNCKE 1976A: Coimbra; Castelo Branco; Resende; Bragança

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Andrena humilis* IMHOFF, 1832**

Widespread, frequent, 19 records. Oligoleptic on Asteraceae.

M a t e r i a l : WARCKE 1976A: Coimbra: Figueira da Foz, Ponte a Portelo, Serra da Boa Viagem; Castelo Branco; Braga

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 4.vi.1989, 1♀

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Algarve

***Andrena hypopolia* SCHMIEDEKNECHT, 1883**

Widespread, rare, 3 records. Polyleptic.

M a t e r i a l : MÉDINA 1898: São Mamade, 1♀, leg. A. Nobre

WARCKE 1976A: (as *Andrena numida hypopolia*) Coimbra; Aveiro: Santo António; Vizeu: Resende; Bragança: Gimonde; Lisboa: Caparica; Algarve, Pêra

Beira Litoral, Aveiro, Canelas, Estarreja, 20.vii.2015, 1♀, det. Wood, leg. R. Andrade

Estremadura, Corroios, 18.vii.2016, 3♀♀, det. Wood, leg. Penado

Algarve, Carrapateira, 3.iv.2015, 1♀, det. & leg. Wood

***Andrena hystrix* SCHMIEDEKNECHT, 1883 ***

Northern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : Trás-os-Montes, Gondesende, Bragança, 1.vii.2016, 2♀♀, both red and black forms, det. & leg. Wood

[*Andrena incisa* EVERSMANN, 1852]

RASMONT et al. 2013: Southern Portugal.

The distribution of this species in Europe is predominantly mountainous, known from the central plateau in Spain and the Swiss-Italian Alps. The only putative record listed by RASMONT et al. 2013 comes from coastal Baixo Alentejo, and hence the record is considered doubtful. The record may be of the similar *Andrena (Campylogaster) lateralis* which is known from the western Algarve]

***Andrena labialis* (KIRBY, 1802)**

Widespread, scarce, 10 records. Considered oligoleptic on Fabaceae by WESTRICH (1989) but polyleptic by CHAMBERS (1968), AMIET et al. (2010) and WOOD & ROBERTS (2017). Analysis of two pollen loads and observations supports polylecty, with confirmed Portuguese pollen sources including *Cistus*, *Erica*, Fabaceae and *Jasione montana*.

M a t e r i a l : WARCKE 1976A: (as *Andrena labialis stenura* WARCKE) Coimbra: Pinhal de Marrocos, Figueira de Foz, Ponte da Portela; Lisboa

Trás-os-Montes, Bragança, 3km N of Fontes, 1.vii.2016, 1♀, det. & leg. Wood

Douro Litoral, Amarante, Chapa, Linha do Tamega, 18.vi.2016, 1♀, det. Wood, leg. Cross

Beira Litoral, Leiria, Portinho, 8-20.iv.1970, 2♂♂, 2♀♀, det. Scheuchl, leg. J.F. Perkins. BMNH

Estremadura, Sesimbra, 14.v.2012, 1♀, det. Scheuchl, leg. A. Livory & R. Coulomb

Estremadura, Mafra, Encarnação, 30.iv.2013, 1♂, det. Baldock, leg. C. Reis

Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. & leg. Wood

Algarve, Marmelete, 9.v.2016, 1♀, det. & leg. Wood
Algarve, Amoreira, 12.iv.2015, 1♂; 8.iv.2017, 1♂, both det. & leg. Cross
Algarve, Budens, Lagoa de Budens, 29.iv.2016, 2♂♂, det. & leg. Cross

***Andrena labiata* FABRICIUS, 1781**

Widespread, scarce, 24 records. Polylectic.

M a t e r i a l : WARNCKE 1976A: (as *Andrena labiata bellina* WARNCKE) Coimbra: Ponte da Portela, Serra da Boa Viagem, Bandeira; Lisboa: Cascais
Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Andrena lagopus* LATREILLE, 1809**

Widespread, frequent, 28 records. Oligolectic on Brassicaceae.

M a t e r i a l : WARNCKE 1976A: Castelo Branco: Vila Velha de Rodão; Coimbra: Pinhal de Marocos, Ponte da Portela
Trás-os-Montes, Beira Litoral, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Andrena lapponica* ZETTERSTEDT, 1838**

North Portugal. Oligolectic on Ericaceae.

M a t e r i a l : WARNCKE 1976A: North Portugal: Lusitanien

***Andrena lateralis* MORAWITZ, 1876**

Southern Portugal, scarce, 6 records. Pollen preferences unknown. but all specimens have been found on Apiaceae; *Thapsia villosa* in April, *Cachrys libanotis* in May.

M a t e r i a l : WARNCKE 1976A: (as *Andrena lateralis sexmaculata* FRIESE) Algarve, Lagos, Portimão
Algarve, Carrapateira, 25.iv.2016, 3♂♂, 2♀♀, det. Wood/Cross, leg. Cross; 16.v.2016, 1♀; 24.iv.2017, 2♂♂, det. & leg. Cross
Algarve, Salema, Boca do Rio, 27.iv.2016, 1♀, det. & leg. Cross
Algarve, Burgau, Barrancão, 20.iv.2017, 1♀, det. & leg. Cross
Algarve, Amoreira, 23.v.2017, 1♀, det. & leg. Cross

***Andrena lepida* SCHENCK, 1861**

Central Portugal. Polylectic.

WARNCKE 1976A: (as *Andrena lepida eleonorae* WARNCKE) Coimbra: Pinhal de Marocos, Ponte da Portela; Castelo Branco: Fundão

***Andrena leptopyga* PÉREZ, 1895**

West-Mediterranean. Widespread, rare, 2 records. Pollen preferences unknown, probably polylectic like its close relative *Andrena (Leucandrena) barbilabris*.

M a t e r i a l : WARNCKE 1976A: (as *Andrena maroccana* BENOIST) Coimbra: Pinhal de Maroccos; Lisboa
Minho, Braga, Fafe, Lagoa, 6.iv.1995, 1♂, det. Scheuchl, leg. G. Seidler
Algarve, Carrapateira, 7.iii.2015, 3♂♂, 3♀♀, det. Wood, leg. Cross

Andrena leucolippa PÉREZ, 1895

Iberia, France and Sicily. Widespread, frequent, 23 records. No published pollen preference data but highly likely to be oligoleptic on Asteraceae like other *Andrena* (*Chlorandrena*) species.

M a t e r i a l : WARCKE 1976A: (as *Andrena boyerella leucolippa*) Coimbra; Guarda, Estrela; Bragança; Lisboa
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

Andrena limata SMITH, 1853

Widespread, frequent, 24 records. Polylectic.

M a t e r i a l : MÉDINA 1898: Valongo, 1♀, leg. Reis jnr.
DINIZ 1959: Elvas (as *Andrena pectoralis* SCHMIEDEKNECHT)
Minho, Douro Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Andrena limbata EVERSMANN, 1852

Central Portugal, rare, 2 record. Narrowly oligoleptic on *Campanula*.

M a t e r i a l : WARCKE 1967: (as *Andrena limbata dusmeti* WARCKE) Manteigas, Serra da Estrela
WARCKE 1976A: (as *Andrena limbata dusmeti*) Lisboa: Seixal; Coimbra: Pinhal de Marocos, Ponte da Portela
Beira Litoral, Leiria, Portinho, 8-20.iv.1970, 1♀, det. Scheuchl, leg. J.F. Perkins. BMNH
Ribatejo, Torres Novas, Casa da Juge, Site 15, 1.v.2014, 1♀, stylopised, det. Scheuchl, leg. M. Jenner

Andrena livens PÉREZ, 1895

West-Mediterranean. Widespread, scarce, 10 records. Oligoleptic on Asteraceae.

M a t e r i a l : WARCKE 1976A: Coimbra: Figueira da Foz, Serra da Boa Viagem-Bandeira
Trás-os-Montes, Bragança, Alfândega da Fé, 23.iv.2015, 1♀, det. Wood, leg. Penado
Beira Litoral, Leiria, Portinho, 8-20.iv.1970, 1♂, det. Scheuchl, leg. J.F. Perkins. BMNH
Beira Litoral, Leiria, Ansião, Chão de Couce, 23.iv.2015, 1♂, det. Wood, leg. A. Goncalves
Estremadura, Sobreira, 1-12.iv.1985, 1♀, det. F. Gusenleitner, leg. Cölln, Risch, Sorg
Estremadura, Cabo Espichel, 15.v.2012, 1♂, det. Scheuchl, leg. A. Ivory & R. Coulomb
Estremadura, Lisboa, Institute of Agronomy, 22.iv.2016, 1♂, det. Wood, leg. V. Zina
Algarve, Guia, 12.iii.2009, 1♂, det. Scheuchl, leg. Baldock
Algarve, Alvor, Abicada, 25.iii.2016, 2♂♂, 1♀, det. Wood, leg. J. D'Haeseler
Algarve, Mexilhoeira Grande, 31.iii.2015, 1♂, det. Wood, leg. J. D'Haeseler
Algarve, Portimão, Figueira, 6.iv.2015, 2♂♂, 2♀♀, det. & leg. Wood

Andrena longibarbis PÉREZ, 1895

Central and Southern Portugal, rare, 5 records. No published pollen preferences, but probably oligoleptic on Brassicaceae like other *Andrena* (*Distandrena*) species. The one available Portuguese pollen load contained pure Brassicaceae pollen.

M a t e r i a l : WARCKE 1976A: Coimbra: Pinhal de Marocos, Ponte da Portela; Algarve, Paderne
Algarve, Silves, 20.iv.2012, 1♀, det. Scheuchl, leg. Baldock
Algarve, Mexilhoeira Grande, 31.iii.2015, 1♂, det. Wood, leg. J. D'Haeseler
Algarve, Tavira, Sinagoga, 25.iv.2016, 1♂, det. & leg. Wood
Algarve, Cacela Velha, 200 m E, 27.iv.2016, 1♂, det. & leg. Wood
Algarve, Fuseta, 1 km W, 28.iv.2016, 1♀, det. & leg. Wood

***Andrena macroptera* WARNCKE, 1974 ***

Iberia and Morocco. Southern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : Alto Alentejo, Montemor-o-Novo, 7.v.2011, 1♀; 4.vi.2011, 1♀, det. Scheuchl, leg. A. Albernaz Valente

***Andrena mariana* WARNCKE, 1968**

Central and Southern Portugal, rare, 4 records. No published pollen preferences, but probably oligoleptic on Brassicaceae like other *Andrena* (*Distandrena*) species.

M a t e r i a l : WARNCKE 1976a: (as *Andrena mariana alma* WARNCKE) Coimbra: Cardigos
Alto Alentejo, PN de Serra São Mamede, Castelo de Vide, 3.iv.2017, 1♀, det. Tomozii, leg. M. Jenner
Alto Alentejo, PN de Serra São Mamede, south of Porta da Espada, 4.iv.2017, 1♀, det. Tomozii, leg. M. Jenner

Algarve, Lagoa, Albandeira, 20.iv.2005, 1♀, det. Scheuchl, leg. Baldock
Algarve, Barragem de Bravura, 30.iii.2017, 1♀, det. Tomozii, leg. Cross

***Andrena miegiella* DOURS, 1873**

Central Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Lisboa: Carcevelos
Estremadura, Sesimbra, 3.vi.2011, 1♀, det. Scheuchl, leg. A. Ivory & R. Coulomb

***Andrena minutula* KIRBY, 1802**

Widespread, frequent, 17 records. Polylectic.

M a t e r i a l : MÉDINA 1898: Valongo, 1♀, leg. Reis jnr.

DUSMET 1921: (as *Andrena parvula* PERKINS) Buçaco, 2♂♂

WARNCKE 1976A: (as *Andrena minutula lenis* PÉREZ) Coimbra: Buçaco, Pinhal de Marrocos, Foz do Ceira, Ponte da Portela

DARDÓN 2010: Coimbra, 1968; Viseu, 1962, all coll. Warncke

Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Algarve

***Andrena minutuloides* PERKINS, 1914**

Widespread, rare, 2 records. Polylectic.

M a t e r i a l : WARNCKE 1976A: Coimbra: Pinhal de Marrocos, Figueira da Foz, Ponte da Portela;
Porto: Póvoa de Varzim; Braga: Necessidades

DARDÓN 2010: Coimbra, coll. Warncke; Braga, Porto, Viana do Castelo

Trás-os-Montes, Bragança, Gondesende, 1.vii.2016, 1♀, det. & leg. Wood

Alto Alentejo, Montemor-o-Novo, 4.viii.2011, 1♀, det. Scheuchl, leg. A. Albernaz Valente

***Andrena morio* BRULLÉ, 1832**

Widespread, rare, 4 records. Pollen preferences unknown.

M a t e r i a l : MÉDINA 1898: var. *collaris*, Valongo, 1♀, leg. Reis jnr.

DUSMET 1921: var. *collaris*; Porto, 1♀

DUSMET 1931: var. *collaris*; Sintra, 2♂♂, 2♀♀, Beja, N. do Alfeite

DINIZ 1959: var. *lugubris*, Almendres, Beja, Corroios, Matas do Alfeite, Matas de Leiria e de Mira, Minhotães, Pragal

WARNCKE 1976A: (as *Andrena morio lugubris* ERICHSON) Porto; Lisboa; Beja: Aljustrel; Algarve, Faro
Trás-os-Montes, Bragança, Alfândega da Fé, 2014, 1♀, det. Wood, leg. Penado

Ribatejo, Porto Alto, 30.v.1971, 1♀, det. Baldock. MUNHAC, coll. Mendoça
Alto Alentejo, Évora, Mora, Foros de Mora, iv.2013, 1♀, det. Baldock, leg. A. Albernaz Valente
Baixo Alentejo, Vila Nova de Milfontes, 9.vii.1971, 1♀, det. Baldock. MNHNC, coll. Mendoça

***Andrena mucida* KRIECHBAUMER, 1873**

Central and Southern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : WARNCKE 1976A: Estoril; Algarve, Salir
Ribatejo, Fátima, 1.vii.1969, 1♀, det. Scheuchl, leg. N. Mendoça. MUNHAC, coll. Mendoça
Algarve, Tavira, 24.v.2012, 1♀, det. Scheuchl, leg. A. Ivory & R. Coulomb

***Andrena murana* WARNCKE, 1967**

Iberian endemic. Southern Portugal. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Algarve, Pêra

***Andrena nana* (KIRBY, 1802)**

Widespread, frequent, 17 records. Polylectic.

M a t e r i a l : WARNCKE 1976A: Coimbra: Pinhal de Marrocos, Figueira da Foz, Ponte da Portela;
Porto
DARDÓN. 2010: Aveiro; Castelo Branco; Coimbra; Viana do Castelo; Viseu
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Alto Alentejo, Algarve

***Andrena nigroaenea* (KIRBY, 1802)**

Widespread, common, 46 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: Coimbra-Santo António, 3.vi.1880, 1♂; Sintra, 27.iv.1880, 1♂, leg.
A.E. Eaton
WARNCKE 1976A: (as *Andrena nigroaenea nigrosericea* DOURS) Coimbra; Estoril; Algarve, Lagos,
Armação de Pêra
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Andrena nigroolivacea* DOURS, 1873**

Widespread, scarce, 13 records. Oligolectic on Asteraceae.

M a t e r i a l : WARNCKE 1976A: Coimbra: Ponte da Portela
Trás-os-Montes, Douro International Park, W of Salto do Saucelle, 7.iv.2017, 1♀, det. Baldock, leg. M.
Jenner
Beira Litoral, Leiria, Portinho, 5♀♀, det. Scheuchl, leg. J.F. Perkins. BMNH
Estremadura, Lisboa, 14.iii.1946, 1♂, 1♀, det. Scheuchl, leg. N.F. d'Andrade. BMNH
Estremadura, Mafra, 21.iii.2013, 1♀, det. Scheuchl, C. Reis
Alto Alentejo, Portalegre, Vaiamonte, iii.2012, 2♂♂, 11♀, det. Baldock/Scheuchl, leg. A. van Harten
Algarve, Guia, 12.iii.2009, 1♀, det. Scheuchl, leg. Baldock
Algarve, Silves, 20.iv.2012, 1♀, det. & leg. Baldock
Algarve, Benafim, Rocha da Pena, 20.iv.2012, 1♀, det. & leg. Baldock
Algarve, Rasmalho, 16.iii.2015, 1♀, det. Wood, leg. Cross
Algarve, Salema, Figueira, 16.ii.2016, 1♂, det. Wood, leg. Cross
Algarve, Amoreira, 6.ii.2017, 1♂, det. & leg. Cross
Algarve, Pêra, Praia Grande, 8.ii.2017, 1♀, det. & leg. Cross

Andrena nigroviridula DOURS, 1873

West-Mediterranean. Central and Southern Portugal, rare, 3 records. Pollen preferences unknown.

Materia : WARCKE 1976A: Algarve, Lagos, Vila do Bispo-Sagres
Estremadura, Cabo Espichel, 4.vi.2011, 1♀, det. Scheuchl, leg. A. Livory & R. Coulomb
Algarve, Quarteira, S.L., 16-19.vi.1978, 1♀, det. Scheuchl, leg. K.M. Guichard. BMNH
Algarve, Lagos, Ponte da Piedade, 20.iii.2015, 1♂, det. Tomozii, leg. Cross

Andrena nitida (MÜLLER, 1776)

Central and Northern Portugal. Polylectic.

Materia : GUSENLEITNER & SCHWARZ 2002: Portugal
RASMONT et al. 2013: Central and Northern Portugal

[*Andrena nitidiuscula* SCHENCK, 1853]

This species has been confused with *Andrena fulvicornis*, thus it is not sure if the records belong to *Andrena nitidiuscula* or to *Andrena fulvicornis*. Scheuchl, pers. comm. So far, all contemporary material from Portugal has belonged to *Andrena fulvicornis*. Saunders' record is highly likely to be *Andrena fulvicornis* due to the April date, as *Andrena fulvicornis* is bivoltine and *Andrena nitidiuscula* is univoltine and flies in July and August.

Materia : SAUNDERS 1881: (as *Andrena lucens* IMHOFF) Sintra, 27.iv.1880, 1♂, leg. A.E. Eaton
WARCKE 1976A: Coimbra: Caceira; Cantanhede; Penacova, Braga: Necessidade, Lisboa:
Carcavelos; Oeiras; Ramalhal; Sintra, Santarem: Amieira; Santana, Évora, Faro:
Belavista; Salir]

Andrena nitidula PÉREZ, 1903

Central and Southern Portugal, frequent, 16 records. Oligolectic on Brassicaceae.

Materia : SAUNDERS 1881: (as *Andrena distinguenda* SCHENCK misidentification) Almodôvar,
27.v.1880, 1♀, leg. A.E. Eaton
Estremadura, Alto Alentejo, Algarve

Andrena niveata FRIESE, 1887 *

Southern Portugal, rare, 3 records. Oligolectic on Brassicaceae.

Materia : Baixo Alentejo, Mértola, 17.iv.2017, 1♀, det. Tomozii, leg. Baldock
Algarve, Amoreira, near Aljezur, 22.ii.2017, 1♀, det. Tomozii, leg. Cross
Algarve, Salema, Carriços, 27.iii.2017, 1♀, det. Tomozii, leg. Cross

Andrena nuptialis PÉREZ, 1902 *

Central Portugal, rare, 1 record. Polylectic.

Materia : Ribatejo, Fátima, 28.ii.1971, 1♂, det. Scheuchl, leg. P. Mendoça. MNHNC, coll.
Mendoça

[*Andrena obsoleta* PÉREZ, 1895

This species has been confused with *Andrena nitidula*, thus it is uncertain to which species

the records belong. Scheuchl, pers. comm. As per GUSENLEITNER & SCHWARZ (2002), *Andrena obsoleta* is restricted to North Africa.

M a t e r i a l : SAUNDERS 1881: Algarve, Almodôvar, 7.v.1880, leg. A.E. Eaton
WARNCKE 1976A: Lisboa; Beja]

***Andrena orana* WARNCKE, 1975 ***

Iberia and Morocco. Central and Southern Portugal, scarce, 6 records. No published pollen preferences, but probably oligolectic on Brassicaceae like other *Andrena* (*Distandrena*) species. Three analysed Portuguese pollen loads contained pure *Raphanus raphanistrum*.

M a t e r i a l : Estremadura, Caparica, 17.iii.1946, 1♂, det. Scheuchl, leg. N.F. d'Andrade. BMNH
Baixo Alentejo, Alcâcer do Sal, 7.iv.2016, 1♀, det. Wood, leg. Cross
Algarve, Guia, 12.iii.2009, 2♂♂, 2♀♀, det. Scheuchl/Wood/Tomozzi, leg. Baldock
Algarve, Pêra dunes, 30.iii.2015, 4♂♂, det. Wood, leg. Cross; 2.iv.2015, 5♀♀, 1♂, det. & leg. Wood
Algarve, Amoreira, 1.iii.2016, 1♂, det. Wood, leg. Cross

***Andrena orbitalis* MORAWITZ, 1871**

West-Mediterranean. Widespread, common, 52 records. No published pollen preferences. *Plantago coronopus* and *Plantago lagopus* are confirmed Portuguese pollen sources.

M a t e r i a l : WARNCKE 1976A: (as *Andrena orbitalis tangana* WARNCKE) Coimbra: Figueira da Foz, Serra da Boa Viagem; Lisboa; Algarve, Faro; Armação de Pêra, Vila de Bispo-Sagres
Trás-os-Montes, Beira Litoral, Estremadura, Ribatejo, Algarve

***Andrena ovatula* (KIRBY, 1802)**

Widespread, frequent, 29 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: Coimbra-Santo António, 3.vi.1880, 1♀, leg. A.E. Eaton
WARNCKE 1976A: Coimbra; Resende; Guarda: Loriga; Bragança: Vimioso; Lisboa: Cascais; Estoril; Beja; Algarve, Salir
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 6.vi.1989, 1♀
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Beira Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Andrena oviventris* PÉREZ, 1895**

West-Mediterranean. Widespread, scarce, 13 records. No published pollen preferences, but all recent records have found the bee exclusively associated with *Reseda*, the only confirmed Portuguese pollen source. More research is required but possibly narrowly oligolectic on *Reseda*.

M a t e r i a l : WARNCKE 1976A: Vizeu; Coimbra: Pinhal de Marrocos; Lisboa
Minho, Braga, Fafe, Lagoa, 18.v.1995, 1♀; 5.iv.1997, 1♂, det. Scheuchl, leg. G. Seidler
Minho, Braga, Fafe, San Jorge, 18.iv.1991, 1♂, det. Scheuchl, leg. Schwarz
Trás-os-Montes, Bragança, 1 km South of Rabal, 29.vi.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Bragança, 3 km North of Fontes, 1.vii.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Bragança, Gondesende, 1.vii.2016, 1♀, det. & leg. Wood
Douro Litoral, Povoa de Varzim, 9.iv.1995, 1♀, det. Scheuchl, leg. G. Seidler
Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♀, det. Scheuchl, leg. Baldock
Algarve, Budens, 29.iv.2016, 2♀♀; Budens, Parc da Floresta, 29.iv.2016, 1♀, all det. Wood, leg. Cross
Algarve, Vilarinha, 15-16.iv.2017, 2♂♂, 1♀, det. & leg. Cross
Algarve, Budens, Monte da Sinceira, 1♀, det. & leg. Cross

Andrena pandellei PÉREZ, 1895

Widespread, scarce, 8 records. Narrowly oligolectic on *Campanula*.

- M a t e r i a l : SAUNDERS 1881; Coimbra-Santo António, 3.vi.1880, 2♂♂, leg. A.E. Eaton
WARNCKE 1976A: (as *Andrena pandellei europaea* WARNCKE) Coimbra
Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♀, det. & leg. Wood
Baixo Alentejo, São Sebastião dos Carros, 7.v.2017, 1♀, det. & leg. Cross
Algarve, Rasmalho, 31.iii.2015, 1♂, det. Tomozil, leg. Cross
Algarve, Carrapateira, 8.vi.2016, 2♀♀, det. & leg. Cross
Algarve, Bordeira, 22.iv.2017, 1♂, 1♀; 9.v.2017, field, all det. & leg. Cross
Algarve, Vilarinha, 9.v.2017, 1♀; 2.vi.2017, 1♀, det. & leg. Cross

Andrena pandosa WARNCKE, 1968

Central and Southern Portugal. Pollen preferences unknown.

- M a t e r i a l : WARNCKE 1976A: (as *Andrena pandosa trigona* WARNCKE) Lisboa; Algarve, Pêra

Andrena panurgina DESTEFANI, 1889

West-Mediterranean. Central and Southern Portugal, rare, 4 records. No published pollen preferences. Analysis of three pollen loads and observations suggest polylecty with a preference for Geraniaceae, with loads containing predominantly *Geranium/Erodium*, with smaller quantities of Asteraceae and Brassicaceae.

- M a t e r i a l : WARNCKE 1976A: Algarve, Faro, Paderne
Estremadura, Sobreira, 1-12.iv.1985, 2♀♀, det. F. Giesenleitner, leg. K. Cölln
Algarve, Guia, 12.iii.2009, 1♀, det. Scheuchl, leg. Baldock
Algarve, Salema, 5.iv.2015, 1♀, det. Wood/Baldock, leg. Wood
Algarve, Portimão, Figueira, 6.iv.2015, 2♀♀, det. Wood/Baldock, leg. Wood

Andrena pilipes FABRICIUS, 1781

Widespread, common, 33 records. Polylectic.

- M a t e r i a l : SAUNDERS 1881: Monchique 550m (Algarve), 21.v.1880, 1♂, leg. A.E. Eaton
MÉDINA 1898: Valongo, 1♀, leg. Reis jnr.
DUSMET 1921: Elvas, 1♀; Dusmet, 1931: Corroios, 1♂
DINIZ 1959: Alfeite; Berlenga
Minho, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

[*Andrena poupillieri* DOURS, 1872]

Given the current taxonomic uncertainty over *Andrena* (*Taeniandrena*), the status of these records is uncertain. All material collected from the west coast of the Algarve in the spring has conformed to *Andrena ovatula* s.s.

- M a t e r i a l : WARNCKE 1976A: Algarve, Sagres, Vila do Bispo, iv.1966]

Andrena propinqua SCHENCK, 1853

Widespread, common, 33 records. Polylectic.

- M a t e r i a l : DUSMET 1921: Porto, vi.1921, 2♀♀; Famalicão, vi.1921, 1♂
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Andrena ranunculi SCHMIEDEKNECHT, 1883 *

West-Mediterranean. Northern Portugal, rare, 1 record. Narrowly oligoleptic on *Ranunculus*.

M a t e r i a l : Douro Litoral, Porto, Campo, 26.iv.2016, 1♀, det. Tomozii, leg. R. Andrade

Andrena rhenana STOECKHERT, 1930

Widespread, scarce, 9 records. Oligoleptic on Asteraceae.

M a t e r i a l : WARCKE 1976A: (as *Andrena taraxaci rhenana*) Coimbra: Ponte da Portela, Serra da Boa Viagem

SCHWENNIGER 2015: Portugal

Minho, Braga, Fafe, Lagoa, 1/23.iv.1995, 3♀♀, det. Scheuchl, leg. G. Seidler

Trás-os-Montes, Bragança, Alfândega da Fé, vi-viii.2015, 3♂♂, 12♀♀, det. Wood, leg. Penado

Trás-os-Montes, PN de Douro Internacional, 8.iv.2017, 1♀, det. Tomozii, leg. M. Jenner

Alto Alentejo, Portalegre, Vaiamonte, iii.2012, 1♀, det. Wood, leg. A. Van Harten

Alto Alentejo, Portalegre, PN de Serra do São Mamede, 4.iv.2017, 1♀, det. Tomozii, leg. M. Jenner

Algarve, São Brás de Alportel, 25.ii.2016, 1♂, det. Wood, leg. J. D'Haeseler

Algarve, Bensafrim, 5.iii.2015, 2♂♂, 1♀, det. & leg. Cross

Algarve, Rasmalho, 16.iii.2015, 1♀, det. Wood, leg. Cross

Andrena rhyssonota PÉREZ, 1895

West-Mediterranean. Widespread, common, 31 records. No published pollen preference data but highly likely to be oligoleptic on Asteraceae like other *Andrena* (*Chlorandrena*) species.

M a t e r i a l : WARCKE 1976A: (as *Andrena rhyssonota flava* WARCKE) Coimbra; Lisboa; Faro; Vila do Bispo-Sagres

Trás-os-Montes, Beira Litoral, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Andrena sardoa LEPELETIER, 1841

West-Mediterranean. Southern and Northern Portugal, rare, 2 records. Narrowly oligoleptic on *Asphodelus* (WESTRICH 2008).

M a t e r i a l : WARCKE 1976A: Algarve, Monchique, Portimão

WESTRICH 2008: Algarve, Salir, 30.iv.2006, 1♂, 1♀

Trás-os-Montes, Bragança, Alfândega da Fé, 16.iv./25.v.2015.2015, 1♂, 1♀, det. Wood, leg. Penado

Algarve, Querença, 7.v.2009, 1♀, phot. V. Jacinto, det. Baldock

Andrena schencki MORAWITZ, 1866

Central and Southern Portugal, scarce, 7 records. Polyleptic.

M a t e r i a l : GUSENLEITNER & SCHWARZ 2002: Portugal

Estremadura, Mafra, Cachouça, 14.v.2012, 1♀, det. Baldock, leg. C. Reis

Estremadura, Torres Vedras, Turcifal, 18.v.2012, 1♂, det. Baldock, leg. C. Reis

Ribatejo, Santarem, 24.v.1970, 1♀, det. Baldock. MHNHC, coll. Mendoza

Baixo Alentejo, Sesimbra, 28.iii.1971, 1♂, det. Baldock. MHNHC, coll. Mendoza

Algarve, Burgau, Barrancão, 1-20.iv.2017, 2♂♂, 2♀♀, det. & leg. Cross

Andrena scotica PERKINS, 1916 *

Central and Southern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : Estremadura, Cabo Espichel, 15.v.2012, 1♀, det. Scheuchl, leg. A. Ivory & R. Coulomb

Algarve, Guia, 17.v.1999, 1♂, det. Scheuchl, leg. Baldock

Andrena semilaevis PÉREZ, 1903

Central and Northern Portugal, rare, 1 record. Polylectic with a strong preference for Apiaceae.

M a t e r i a l : DARDÓN 2010: Guarda, Seia, Vale do Rossim, 24.vi.1987, 1♀, det. F. Gusenleitner, leg. F. Torres

Douro Litoral, Campo, 26.iv.2016, 1♀, det. Tomozii, leg. R. Andrade

Andrena senecionis PÉREZ, 1895

Widespread, frequent, 18 records. No published pollen preference data but highly likely to be oligoleptic on Asteraceae like other *Andrena* (*Chlorandrena*) species. Analysis of four pollen loads supports this position, with *Sonchus asper* a confirmed Portuguese pollen source.

M a t e r i a l : WARNCKE 1976A: Viseu: Castro Daire; Castelo Branco: Vila Velha de Rodão; Coimbra: Ceira Coimbra, Pinhal de Marrocos, Figueira da Foz, Ponte da Portela; Lisboa

SCHWENNIGER 2015: Portugal

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

Andrena similis SMITH, 1849

Widespread, common, 40 records. Oligoleptic on Fabaceae.

Material: WARNCKE 1976a: (as *Andrena ocreata* CHRIST) Coimbra: Figueira da Foz, Ponte da Portela, Serra da Boa Viagem; Castelo Branco; Lisboa: Estoril

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 2.vi.1989, 1♀

Minho, Trás-os-Montes, Beira Litoral, Beira Baixa, Estremadura, Baixo Alentejo, Algarve

Andrena simontornyella NOSKIEWICZ, 1939

Central Portugal. Polylectic.

M a t e r i a l : WARNCKE 1976A: Coimbra, Pinhal de Marrocos, 2.iv.1968, 1♀, leg. M.A. Diniz

Andrena spreta PÉREZ, 1895 (=*Andrena curtula* PÉREZ, =*Andrena pauxilla* STÖCKHERT, =*Andrena pusilla* PÉREZ)

Widespread, scarce, 16 records. Polylectic. There is ongoing taxonomic uncertainty as to the status of *Andrena spreta*, *Andrena pusilla* and other *Andrena* (*Micrandrena*) taxa. DARDÓN (2010) synonymised *Andrena pusilla* with *Andrena spreta pusilla*. Recently collected material corresponds most closely to *pusilla*, but for now, Portuguese specimens are best considered *Andrena spreta* s.l.

M a t e r i a l : DARDÓN 2010: Beja, Castelo Branco, Coimbra, Lisboa, Faro, Guarda, Santarem, Setúbal, Viana do Castelo

Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Andrena suerinensis* FRIESE, 1884**

Widespread, scarce, 8 records. Oligolectic on Brassicaceae.

M a t e r i a l : WARNCKE 1976A: Coimbra: Pinhal de Marrosos, Figueira da Foz, Ponte da Portela; Porto; Braga: Gerês; Lisboa: Seixal

Trás-os-Montes, Douro International Park, Bemposta, 7.iv.2017, 1♀, det. Baldock, leg. M. Jenner

Estremadura, Caparica, 14.iii.1946, 1♂, det. Scheuchl, leg. N.F. d'Andrade. BMNH

Estremadura, Torres Vedras, 14.iv.2011, 1♀, det. Scheuchl, leg. J. Franco

Alto Alentejo, Portalegre, PN Serra São Mamede, Barretos, 3-4.iv.2017, 1♂, 2♀♀, det. Baldock/Tomozii, leg. M. Jenner

Algarve, Guia, 12.iii.2009, 1♂, det. Scheuchl, leg. Baldeck

Algarve, Silves, 20.iv.2012, 1♀, det. Scheuchl, leg. Baldeck

Algarve, Pêra dunes, 2.iv.2015, 2♀♀, det. & leg. Wood

[*Andrena taraxaci* GIRAUD, 1861]

This record is certainly *Andrena rhenana* as Bavaria is the easternmost point of the distribution of *Andrena taraxaci*, Scheuchl, pers. comm., see also SCHMIDT et al. (2015).

M a t e r i a l : RASMONT et al. 2013: Central and Northern Portugal]

***Andrena tenuistriata* PÉREZ, 1895**

Widespread, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Coimbra: Pinhal de Marrosos, Figueira da Foz, Ponte da Portela; Lisboa: Sintra; Bragança: Rio Angueira bei Vimioso

DARDÓN 2010: Lisboa, 1952/53, leg. N.F. d'Andrade, coll. Warncke; Bragança

Alto Alentejo, Portalegre, Vaiamonte, iii.2012, 1♀, det. Tomozii, leg. A. van Harten

***Andrena thoracica* FABRICIUS, 1775**

Widespread, frequent, 21 records. Polyleptic.

M a t e r i a l : DINIZ 1959: Alfeite; Jogueiros; Soure

WARNCKE 1976A: (as *Andrena thoracica melanoptera* HEDICKE) Coimbra: Pinhal de Marrosos, Figueira da Foz; Resende; Porto; Lisboa: Seixal

Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

***Andrena tiarella* WARNCKE, 1974 ***

Spain, North Africa and the Middle East. Southern Portugal, rare, 1 record. No published pollen preferences, but probably polyleptic like most *Andrena* (*Micrandrena*).

M a t e r i a l : Alto Alentejo, Portalegre, PN Serra São Mamede, 3.iv.2017, 1♀, det. Tomozii, leg. M. Jenner

***Andrena trimmerana* (KIRBY, 1802)**

Widespread, rare, 4 records. Polyleptic.

M a t e r i a l : SAUNDERS 1881: var. *spinigera*, A.E. Eaton, Sintra near the Pena, 27.iv.1880, 1♂, leg. A.E. Eaton

DUSMET 1921: Buçaco, 1♂

WARNCKE 1976A: Lisboa (as *Andrena trimmerana fusca* LEPELETIER); Coimbra (as *Andrena trimmerana trimmerana*)

Minho, Braga, Fafe, Lagoa, 15.iii.1995, 3♂♂, det. Scheuchl, leg. G. Seidler

Ribatejo, Fátima, 5.vii.1969, 1♀, det. Scheuchl, leg. P. Mendoça. MNHNC, coll. Mendoça

Alto Alentejo, PN Serra São Mamede, 3.iv.2017, 2♀♀, det. Tomozii, leg. M. Jenner

Algarve, Monchique, 12.iii.2009, 1♂, det. Scheuchl, leg. Baldock

***Andrena tunetana* SCHMIEDEKNECHT, 1900**

Central Portugal. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Lisboa

***Andrena vachali* PÉREZ, 1895 ***

Previously known from North Africa and Greece, first record for Iberia. Southern Portugal, rare, 4 records. Pollen preferences unknown, but probably polylectic like other *Zonandrena*.

M a t e r i a l : Alto Alentejo, Montemor-o-Novo, 27.iv.2011, 1♀, 24.iv.2013, 4♀♀; 1.v.2013, 1♀; 15.v.2013, 1♀, det. Tomozii, all leg. A. Albernaz Valente

***Andrena variabilis* SMITH, 1853**

Central and Southern Portugal, scarce, 7 records. Pollen preferences unknown, but likely to be polylectic like other *Andrena* (*Holandrena*) species (e.g. MANDERY et al. 2008).

M a t e r i a l : WARNCKE 1976A: Lisboa; Caparica; Santarem

Estremadura, Torres Vedras, Ventosa, 11.v.2012, 1♀, det. Wood, leg. C. Reis

Estremadura, Ermegereira, 23.v.2013, 1♀, det. Wood, leg. C. Reis

Algarve, Amoreira, 5/16/25.vi.2015, 4♂♂, 2♀♀, det. & leg. Cross

Algarve, Pêra, Praia Grande, 29.vi.2015, 1♂, 1♀, det. Cross

Algarve, Salema, Praia da Figueira, 14.iv.2016, 1♀, det. Wood, leg. Cross

***Andrena verticalis* PÉREZ, 1895**

Central and Southern Portugal, scarce, 7 records. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Coimbra; Lisboa: Caparica, Carcavelos, Conois, Estoril, Seixal, Sintra; Algarve, Lagos

Beira Litoral, Aveiro, Canelas Esterreja, 20.vii.2015, 1♀, det. Wood, leg. R. Andrade

Estremadura, Sobreira, 13.vi-1.viii.1985, 1♂, 16♀♀, det. F. Gusenleitner, leg. Cölln, Risch, Sorg

Alto Alentejo, Portalegre, Vaiamonte, ii.2012, 1♂, det. Tomozii, leg. A. van Harten

Algarve, Guia, 12.iii.2009, 3♂♂, 3♀♀, det. Scheuchl, leg. Baldock

Algarve, Rasmalho, 16.iii.2015, 1♂, det. Wood, leg. Cross

Algarve, Bensafrim, 11.iv.2015, 1♂, 1♀, det. Wood, leg. J. D'Haeseleer

Algarve, Carrapateira, 28.iii.2017, 1♀, det. Tomozii, leg. Cross

***Andrena vetula* LEPELETIER, 1841**

Central and Southern Portugal, scarce, 7 records. Pollen preferences unknown.

M a t e r i a l : WARNCKE 1976A: Coimbra: Figueira da Foz; Lisboa

Estremadura, Seixal, 17.iv.1946, 1♂, det. Scheuchl, leg. N.F. d'Andrade. BMNH

Estremadura, Cabo Espichel, 15.v.2012, 3♂♂, det. Baldock, leg. A. Livory & R. Coulomb

Estremadura, Lisboa, Institute of Agronomy, 16.v.2016, 1♂, det. Wood, leg. M. Carvajal

Baixo Alentejo, Mértola, 10 km W, 18.iv.2017, 3♀♀, det. Tomozii, leg. Baldock
Algarve, Guia, 20.iv.2006, 1♂, det. Scheuchl, leg. Baldock
Algarve, Cacela Velha, 200 m E, 27.iv.2016, 1♂, det. & leg. Wood
Algarve, Salema, Praia da Figueira, 11.v.2016, 1♂, det. Wood, leg. Cross

Andrena villipes PÉREZ, 1895

Iberia and France. Widespread, scarce, 8 records. Pollen preferences unknown.

M a t e r i a l : GUSENLEITNER & SCHWARZ 2002: Portugal
Trás-os-Montes, Bragança, Alfândega da Fé, vi-viii.2015, 5♂♂, 13♀♀, det. Wood, leg. Penado
Estremadura, Lisboa, 25.iv.1946, 1○, det. Scheuchl, leg. N.F. d'Andrade. BMNH
Baixo Alentejo, Odeceixe, Baiona, 28.iii.2015, 1♂, det. Tomozii, leg. Cross
Algarve, Guia, 12.iii.2009, 1♀, det. Scheuchl, leg. Baldock
Algarve, Silves, 20.iv.2012, 5♂♂, 5♀♀, det. Scheuchl, leg. Baldock
Algarve, Carrapateira, 3.iv.2015, 1○, det. Baldock/Wood, leg. Wood
Algarve, Amoreira, 11/13.iv.2016, 3♂♂, 1♀, det. & leg. Cross

Andrena vulcana DOURS, 1873

Portugal and north-west Africa. Central Portugal. Pollen preferences unknown. but likely to be polyleptic like other *Andrena* (*Zonandrena*) species. In the Canary Islands, *Andrena vulcana nyroca* is known to visit Asteraceae, Euphorbiaceae and Fabaceae.

M a t e r i a l : WARNCKE 1976A: Coimbra: Pinhal de Marrosos, Ponte da Portela

Andrena vulpecula KRIECHBAUMER, 1873

Widespread, rare, 3 records. Oligoleptic on Cistaceae.

M a t e r i a l : WARNCKE 1976A: Coimbra: Figueira da Foz; Vizeu; Algarve, Armação de Pêra
Minho, Braga, Fafe, Lagoa, 6.v.1995, 1♂, det. Scheuchl, leg. G. Seidler
Beira Litoral, Leiria, Portinho, 8-20.iv.1970, 1♀, det. Scheuchl, leg. J.F. Perkins. BMNH
Algarve, Lagos area, 20.iii.1967, 1♀, det. Scheuchl, leg. K.M. Guichard. BMNH

Andrena wilkella (KIRBY, 1802)

Central and Northern Portugal, scarce, 10 records. Oligoleptic on Fabaceae.

M a t e r i a l : DINIZ 1960: Coimbra
WARNCKE 1976A: (as *Andrena wilkella beaumonti* BENOIST) Coimbra: Pinhal de Marrosos, Ponte da Portela
Minho, Braga, Fafe, Lagoa, 1/6.v.1995, 3♀♀; 5/16.vii.1995, 2♀♀, det. Scheuchl, leg. G. Seidler
Trás-os-Montes, Bragança, Serra da Montesinho, 20.vi.2016, 1♀, det. Wood, leg. Cross
Trás-os-Montes, Vila Real, Aveção do Cabo, 28.vi.2016, 1○, det. & leg. Wood
Douro Litoral, Loivos de Monte, 17.vi.2016, 1♀, det. Wood, leg. Cross
Douro Litoral, Amarante, Chapa, Linha do Tamega, 1○, det. Wood, leg. Cross
Beira Alta, Serra da Estrela, 27.iv.2015, 1♀, det. Wood, leg. A. Gonçalves
Beira Alta, Mantegias, Vale do Zêzere, 14.vi.2016, 1♀, det. D. Genoud, leg. A. Livory & R. Coulomb

PANURGINAE

Genus *Camptopoeum* SPINOLA, 1843

1 species.

[*Camptopoeum friesei* MOCSÁRY, 1894

Listed from central and eastern Spain on Atlas Hymenoptera. The original specimen cannot be found at the BMNH. *Flavipanurgus ibericus* (described in 1972) is superficially similar, particularly in the male, is known from northern Portugal and flies at the same time of year; Saunders may well have confused the two species.

M a t e r i a l : SAUNDERS 1881: (as *Camptopoeum frontale* FABRICIUS) Serra da Estrela, São Romão 500 m, 9.vi.1880, 1♂, leg. A.E. Eaton]

Camptopoeum baldocki WOOD & CROSS, 2017

Southern Portugal, rare, 5 records. Analysis of one pollen load and observations suggest narrow oligolecty on *Frankenia laevis*.

M a t e r i a l : WOOD & CROSS 2017: Cacela Velha, 200m east of, 27.iv.2016, 6♂♂, det. & leg. Wood; Pêra, Praia Grande, 15/19.v.2016, 4♂♂, 5♀♀; det. & leg. Cross; Tavira, salt marsh edge, 29-31.v.2016, 1♂, det. Wood, leg. A. Ivory & R. Coulomb
Algarve, Pêra, Praia Grande, 15.v.2017, 1♂, det. & leg. Cross

Genus *Flavipanurgus* WARNCKE, 1972

4 species. A genus of pronounced pollen specialists endemic to Iberia. Published pollen preferences from GONZÁLEZ-VARO et al. (2016) and WOOD & CROSS (2017).

Flavipanurgus flavus (FRIESE, 1897) *

Iberian endemic. Southern Portugal, rare, 4 records. Probably narrowly oligoleptic on *Cistus*, possibly monolectic on *Cistus ladanifer* but this requires formal investigation.

M a t e r i a l : Algarve, Monchique, 20.iv.1955, 1♂, det. Warncke/Patiny, leg. I.H.H. Yarrow. BMNH
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 3♂♂, 2♀♀, det. & leg. Wood; 26.v.2016, 5♀♀;
6.v.2017, 1♀, all det. & leg. Cross

Flavipanurgus fuzetus PATINY, 1999

Portuguese endemic. Southern Portugal, scarce, 6 records. Probably narrowly oligoleptic on *Spergularia* species, with *Spergularia purpurea* and *Spergularia marina* confirmed Portuguese pollen sources.

M a t e r i a l : PATINY 1999: Fuseta, 21.vi.1978, 1♀, leg. K.M. Guichard, female Holotype BMNH
WOOD & CROSS 2017: Cacela Velha, 200m E of, 27.iv.2016, 2♂♂, 3♀♀, det. & leg. Wood; Pêra, Praia
Grande, 30.iv.2016, 2♂♂, 2♀♀, 1-13.v.2016, 3♂♂, det. & leg. Cross
Algarve, Pêra, Praia Grande, 17.iv.2017, 2♂♂; 15.v.2017, field, det. & leg. Cross
Algarve, Cacela Velha, 23.iv.2017, 1♂, det. & leg. Cross

Flavipanurgus granadensis (WARNCKE, 1987)

Iberian endemic. Southern Portugal. No published pollen preferences. Ortiz-Sánchez and PATINY (2007) note a Spanish specimen collected at *Helianthemum syriacum*. Possible Cistaceae oligolege.

M a t e r i a l : PATINY 2012a: Algarve

***Flavipanurgus ibericus* (WARNCKE, 1972)**

Iberian endemic. Southern and Northern Portugal, scarce, 8 records. Material conforming to *Flavipanurgus ibericus kastiliensis* WARNCKE from Trás-os-Montes was found to be narrowly oligoleptic on *Sedum*, with *Sedum brevifolium* and *Sedum pedicellatum* confirmed Portuguese pollen sources. However, material conforming to *Flavipanurgus ibericus ibericus* in Baixo Alentejo was observed visiting *Jasione montana* exclusively. Given the disjunct distribution and differences in pollen preferences, particularly in a subfamily well known for species-specific oligolecty, *Flavipanurgus ibericus kastiliensis* should probably be raised to full species status.

ssp. *ibericus* (WARNCKE, 1972)

Southern Portugal. Narrowly oligoleptic on *Jasione*.

M a t e r i a l : WARNCKE 1972: Baixo Alentejo, Dogueno
Baixo Alentejo, Mértola, 4.vi.2016, 1♂, 1♀, det. Cross, leg. A. Ivory & R. Columb
Baixo Alentejo, São Sebastião dos Carros, 7.v.2017, 5♂♂, 4♀♀, det. & leg. Cross

ssp. *kastiliensis* (WARNCKE, 1985)

Northern Portugal. Narrowly oligoleptic on *Sedum*.

M a t e r i a l : WOOD & CROSS 2017: Serra do Montesinho, Alto do Falgueirão, 30.vi.2016, 4♂♂, 7♀♀,
det. & leg. Wood
Trás-os-Montes, Bragança, Alfândega da Fé, 17.v.2014, 1♀; 25.v.2014, 1♀, det. Patiny; 27.v.2015, 1♂,
2♀♀, det. Wood, all leg. Penado
Trás-os-Montes, Vila Real, 1km E of Pardelhas, 28.vi.2016, 3♀♀, det. & leg. Wood; 11.vi.2017, 5♂♂,
2♀♀, det. & leg. Cross

[*Flavipanurgus venustus* (ERICHSON, 1835)]

Iberian endemic. Southern Portugal. Monolectic on *Cistus crispus* (GONZÁLEZ-VARO et al. 2016). It is not clear which country the cited record, located on the southern border between Portugal and Spain, is in. The presence of this species in Portugal is considered uncertain until more detailed information can be found.

M a t e r i a l : PATINY 2012a: Algarve/Huelva border]

Genus *Panurginus* NYLANDER, 1848

1 species.

***Panurginus albopilosus* (LUCAS, 1849)**

West-Mediterranean. Central and Southern Portugal, frequent, 30 records. Analysis of seven pollen loads and observations suggest oligolecty on Brassicaceae, with *Sinapis alba* a confirmed Portuguese pollen source. ROZEN (1971) describes only *Diplotaxis tenuisiliqua* (Brassicaceae) as a pollen source in Morocco.

M a t e r i a l : SAUNDERS 1881: (as *Panurginus montanus* GIRAUD, misidentification) Algarve,
Silves, 15.v.1880, 1♀, leg. A.E. Eaton
Estremadura, Ribatejo, Algarve

[*Panurginus brullei* (LEPELETIER, 1841)]

Panurgus brullei s.s. is known only from the Canary Islands (PATINY 2001). The material Warncke included in the *Panurginius brullei* complex in his 1972 revision was probably *Panurginus albopilosus*.

M a t e r i a l : WARNCKE 1972: Lisboa, Estoril]

Genus *Panurgus* PANZER, 1806

6 species. A genus of pollen specialists. Published pollen preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2010) and Spain (MARTÍN et al. 2015).

***Panurgus banksianus* (KIRBY, 1802) ssp. *proximus* SAUNDERS, 1881**

West-Mediterranean subspecies. Widespread, frequent, 16 records. Oligoleptic on Asteraceae.

M a t e r i a l : SAUNDERS 1881: Buçaco, 1♀, leg. A.E. Eaton

DINIZ 1959: Bensafrim; Serra de Monchique

DINIZ 1960: Almodôvar-São Barnabé; Silves

WARNCKE 1972: Faro; Lisboa; Porto; Val Baroa; Manteigas

KUHLMANN 1996: Serra da Estrela, Nave de Santo António, 21.vii.1990, 1♂

Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Panurgus calcaratus* (SCOPOLI, 1763)**

Widespread, common, 61 records. Oligoleptic on Asteraceae.

M a t e r i a l : MÉDINA 1898: (as *Panurgus lobatus* PANZER) Valongo, 1♀, leg. Reis jnr.

DUSMET 1921: Buçaco, 1♀; Estremoz, 6♂♂, 1♀; Porto, 1♀

DINIZ 1959: Agolada, Álamo, Aldeia Nova de São Bento, Almodôvar, Coimbra, Évora, Jugueiros, Mata do Lagar do Seminário, Mitra, Serra de Buçaco, Serra do Monfurado, Soure

DINIZ 1960: São Romão

WARNCKE 1972: Alentejo; Faro; Lisboa; Marateca Rama Ihal; Resende; Val Baroa

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 2-5.vi.1989, 6♀♀

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Panurgus canescens* LATREILLE, 1811**

West-Mediterranean. Widespread, frequent, 29 records. Oligoleptic on Asteraceae.

M a t e r i a l : WARNCKE 1972: Coutada; Luso; Coimbra; Montemar; Rama Ihal; Resende; Santo António

Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Panurgus cephalotes* LATREILLE, 1811**

West-Mediterranean. Widespread, common, 35 records. No published pollen preferences, but very probably oligoleptic on Asteraceae. *Andryla integrifolia* is a confirmed pollen source in Portugal.

M a t e r i a l : MÉDINA 1898: Valongo, 1♀, leg. Reis jnr.

DUSMET 1921: Buçaco, 2♀♀

DINIZ 1959: Almendres; Évora; Mitra; Vila Viçosa
WARNCKE 1972: Avegos; Lisboa; Manteigas
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Algarve

Panurgus dargius WARNCKE, 1972 *

Iberia and Morocco. Southern Portugal, rare, 5 records. Oligolectic on Asteraceae.
M a t e r i a l : Baixo Alentejo, Vila Nova de Milfontes, 20.v.2012, 1♂, det. Baldock, leg. A. Ivory & R. Coulomb
Algarve, Guia, 17.v.1999, 2♂♂; 4.v.2002, 4♂♂, det. Patiny, leg. Baldock
Algarve, Pêra, Praia Grande, 30.iv.2016, 3♂♂; 27.v.2016, 1♂, 2♀♀, det. & leg. Cross

[Panurgus dentipes LATREILLE, 1811

Though shown as present by Atlas Hymenoptera (PATINY 2012b) we have seen no material from Portugal corresponding to this species. Moreover, its parasite *Nomada panurgina* has never been recorded from Portugal, and so the presence of *Panurgus dentipes* is here considered doubtful.

M a t e r i a l : MÉDINA 1898: Recarei, 1♀, leg. Reis jnr.]

Panurgus perezi SAUNDERS, 1881

Iberia and Morocco. Widespread, common, 42 records. No published pollen preferences, but very probably oligolectic on Asteraceae. *Andryla integrifolia* is a confirmed pollen source in Portugal.

M a t e r i a l : SAUNDERS 1881: Algarve, vineyard north of Silves, 15.v.1880, 3♂♂, leg. A.E. Eaton
DUSMET 1921: Serra de Buçaco, 1♂, 3♀♀; Porto, 1♀; Estremoz, 1♀
DINIZ 1959: Aldeia Nova de São Bento; Castelo de Vide; Coimbra; Évora; Famalicão; Jogueiros; Mitra; Provença; Ribeira de Valverde; Soure
KUHLMANN 1996: Serra da Estrela, Nave de Santo António, 21.vii.1990, 1♀; Manteigas, 26.vii.1990, 1♂
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Genus Melitturga LATREILLE, 1809

1 species.

Melitturga caudata PÉREZ, 1879

West-Mediterranean. Widespread, scarce, 13 records. No published pollen preferences, but the central European *Melitturga clavicornis* is oligolectic on Fabaceae (AMIET et al. 2010). Analysis of three pollen loads and observations support Fabaceae oligolecty in *Melitturga caudata*, with *Stauracanthus genistoides* a confirmed pollen source in Portugal.

M a t e r i a l : WARNCKE 1972: Lisboa
Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♀, det. & leg. Wood
Baixo Alentejo, Vila Nova de Milfontes, 18-19.v.2012, 2♂♂, det. & leg. A. Ivory
Algarve, Castelejo, west coast, 2.iv.1997, 2♂♂, 1♀, det. & leg. P. Hartmann
Algarve, Armação de Pêra cliffs, 20.iv.2005 2♂♂; 20.iv.2006, 7♂♂, 1♀, det. & leg. Baldock
Algarve, Aljezur, Odeceixe, 25.v.2011, 1♂, det. & leg. A. Ivory
Algarve, Carrapateira, 25.iv/5.vi.2016, 2♂♂, 1♀; 24.iv.2017, field, all det. & leg. Cross

Algarve, Cerro de Santo Miguel, 28.iv.2016, 3♂♂, 3♀♀, det. & leg. Wood
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♂, det. & leg. Wood
Algarve, Amoreira, 1.vi.2016, 1♀, det. & leg. Cross
Algarve, Aljezur, Ponta da Atalaia, 17.v.2017, field, det. & leg. Cross

H a l i c t i d a e

ROPHITINAE

Genus *Dufourea* LEPELETIER, 1841

4 species. A genus of pollen specialists. Published pollen preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2014) and Spain (MARTÍN et al. 2015).

Dufourea gaullei VACHAL, 1897

Iberia and Morocco. Widespread, frequent, 18 records. No published pollen preferences but our own observations suggest oligolecty on Caryophyllaceae, with pollen visits to *Spergularia* and *Paronychia*.

M a t e r i a l : DINIZ 1959: Beja
EBMER 1984: Beja, Évora
Minho, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

Dufourea halictula (NYLANDER, 1852)

Widespread, rare, 1 record. Narrowly oligolectic on *Jasione*.

M a t e r i a l : EBMER 1984: Castelo Branco, São Fiel
EBMER 1989: Algarve, São Bartolomeu de Messines, 18.v.1985, 1♀, leg. Teunissen
Trás-os-Montes, Bragança, Alfândega da Fé, 20.vi.2014, 1♂, det. Baldock/Ebmer, leg. A. Penado

Dufourea lusitanica EBMER, 1999

Iberian endemic, first found in Spain in the Coto Doñana in 2008. Southern Portugal. Pollen preferences unknown, but probably oligolectic.

M a t e r i a l : EBMER 1999: Baixo Alentejo, Sines, 26.v.1956, 1♀, leg. N.F. de Andrade. Holotype.
OLML

Dufourea trautmanni DUSMET, 1935

Iberian endemic. Central and Southern Portugal, scarce, 9 records. No published pollen preferences but analysis of two pollen loads and observations suggest oligolecty on Asteraceae.

M a t e r i a l : EBMER 1984: Estoril, Carcavelos
EBMER 1999: Estoril, São Brás de Alportel, Carcavelos, Vale Colvo, Relvas, Castro Marim
Estremadura, Sesimbra, 14.v.2012, 1♀, det. Baldock, leg. A. Livory & R. Coulomb,
Estremadura, PN das Serras de Aire e Candeeiros, 27.iv.2014, 1♂, det. Baldock, leg. M. Jenner
Baixo Alentejo, São Sebastião dos Carros, 4.iv.2017, 1♂, det. & leg. Cross
Algarve, Guia, 28.iv.2004, 1♀, det. Ebmer, leg. Baldock
Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 4♂♂, 1♀♀, det. Wood/Baldock, leg. Wood
Algarve, Salema, Boca do Rio, 2♂♂, 1♀, 4.iv.2015, det. Wood/Baldock, leg. Wood/Cross

Algarve, Alvor, Cruzina, 10/23.iv.2015, 4♂♂, det. Wood, leg. J. D'Haeseleer
Algarve, Tavira, Quinta das Salinas, 22.iv.2016, 2♀♀, det. & leg. Wood

Genus *Systropha* ILLIGER, 1805

1 species.

[*Systropha curvicornis* (SCOPOLI, 1770)]

All examined *Systropha* material has conformed to *Systropha planidens*. As Diniz did not mention *Systropha planidens* and we have been unable to find *Systropha curvicornis* ourselves or in collections we suspect this original record was a misidentification.

DINIZ 1960: Portugal]

Systropha planidens GIRAUD, 1861 ssp. *grandimargo* PÉREZ, 1905 *

Iberian and southern France subspecies. Southern and Northern Portugal, scarce, 11 records. Oligoleptic on Convolvulaceae (AMIET et al. 2014; MARTÍN et al. 2015). *Convolvulus althaeoides* is the only confirmed pollen source in Portugal.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 25.v-20.vi.2015, 1♂, 2♀♀, det. Wood, leg. Penado

Algarve, Guia, 28.iv.2004, 1♂; 2.v.2008, 1♂; det. Ortiz-Sánchez, leg. Baldock

Algarve, Pêra, Albandeira, 20.iv.2005, 2♂♂, det. & leg. Baldock

Algarve, Pêra, Relvas, 5.v.2005, 2♂♂, leg. Smit

Algarve, Silves, 20.iv.2012, 3♂♂, det. & leg. Baldock

Algarve, Tavira, 23-26.v.2012, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb

Algarve, Cacela Velha, 200m E, 27.iv.2016, 1♂, det. & leg. Wood

Algarve, Pêra, Praia Grande, 30.iv.2016, 3♂♂, 2♀♀; 27.v.2016, 1♀; 17.iv.2017, field, all det. & leg. Cross
Algarve, Carrapateira, 24.iv.2017, field, det. & leg. Cross

NOMIINAE

Genus *Pseudapis* KIRBY, 1900

3 species.

Pseudapis bispinosa (BRULLÉ, 1832)

Widespread, frequent, 27 records. Pollen preferences unknown, likely to be polyleptic.

M a t e r i a l : DUSMET 1931: Amarante, Mira, 2♂♂

DINIZ 1959: Soure

WARNCKE 1976B: Alcoutim; Lagos

Douro Litoral, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

Pseudapis diversipes (LATREILLE, 1806)

Central and Northern Portugal, rare, 5 records. Polyleptic. (AMIET et al. 2014).

M a t e r i a l : EBMER 2005: Braga, Fafe, San Jorge, 15.vi.1991, 1♂, 5♀♀, det. Ebmer, leg. Schwarz
Trás-os-Montes, Bragança, Alfândega da Fé, 26.viii.2015, 1♀, det. Baldock, leg. Penado

Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♀, det. & leg. Wood

Trás-os-Montes, Bragança, Reconço, 3.vii.2016, 1♂, det. & leg. Wood

Douro Litoral, Chapa, Linha do Tamega, 19.vi.2016, 4♂♂, det. & leg. Cross
Beira Alta, Viseu, Leomil, Moimenta da Beira, 7.viii.2013, 1♂, det. Baldock, leg. R. Andrade

***Pseudapris monstrosa* (COSTA, 1861) ***

Southern Portugal, rare, 4 records. Pollen preferences unknown, likely to be polylectic.
M a t e r i a l : Algarve, Silves, 10.vi.2011, 1♀, det. Ebmer, leg. Baldock
Algarve, Pêra dunes, 11.vi.2011, 1♀; 23.vii.2014, 4♀♀, det. & leg. Baldock; 5.x.2017, 1♀, det. & leg. Cross
Algarve, Mexilhoiera Grande, 15.vii.2015, 1♀, det. Wood/Baldock, leg. J. D'Haeseleer

Genus *Ceylalictus* STRAND, 1913

1 species.

***Ceylalictus variegatus* (OLIVIER, 1789)**

Southern Portugal, scarce, 9 records. Highly likely to be polylectic. Confirmed Portuguese pollen sources include *Echium plantagineum* and *Cakile maritima*.

M a t e r i a l : DUSMET 1931: Herd da Mira, 1♀
Algarve, Tavira, 2.viii.2010, 2♀♀; 23-25.v.2012, 3♀♀; det. & leg. A. Livory & R. Coulomb
Algarve, Silves, 10.vi.2011, abundant; 2014, abundant, det. & leg. Baldock
Algarve, Alvor, 22.vii.2012, 3♂♂, det. & leg. A. Livory & R. Coulomb
Algarve, Cacela Velha, 25.vii.2012, 2♀♀, det. & leg. A. Livory & R. Coulomb
Algarve, Cabanas, 24.vii.2012, 1♀, det. & leg. A. Livory & R. Coulomb
Algarve, Lagos, Vale da Lama, 27.ix.2014, 1♂, 1♀, det. & leg. Cross
Algarve, Faro airport, 3.x.2014, many, det. & leg. Cross
Algarve, Carrapateira, 26.viii.2015, 1♂, 1♀, det. & leg. Cross
Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♀, det. & leg. Wood

Genus *Nomioides* SCHENCK, 1867

2 species.

***Nomioides facilis* SMITH, 1853**

Southern and Northern Portugal, scarce, 7 records. Pollen preferences unknown but likely to be polylectic.

M a t e r i a l : DUSMET 1931: Évora, 1♂
Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♀, det. & leg. Wood
Alto Alentejo, Alandroal, 15.vii.1963, 1♀, per. Pauly
Alto Alentejo, Évora, 26.ix.2014, 2♀♀, det. & leg. A. Livory & R. Coulomb
Baixo Alentejo, Serpa, 29.ix.2014, 1♀, det. & leg. A. Livory & R. Coulomb
Baixo Alentejo, Mina de São Domingos, 24.v.2017, 1♀, det. & leg. Wood
Algarve, Albufeira, Aldeia das Acoteias, 27.vii.1973, 1♂, per. Pauly
Algarve, Cacela Velha, 25.vii.2012, 1♂, 1♀, det. & leg. A. Livory & R. Coulomb

***Nomioides minutissimus* (ROSSI, 1790) ***

Widespread, scarce, 15 records. Polylectic (MARTÍN et al. 2015).

M a t e r i a l : Douro Litoral, Póvoa de Varzim, Estela, 18.vii.2013, 1♀, det. Baldock, leg. R. Andrade
Douro Litoral, Vila do Conde, Mindelo, 5.viii.2016, 1♂, det. Wood, phot. R. Andrade

Beira Alta, Paços da Serra, Serra da Estrela, 16.vii.1977, 1♀, det. Baldock. MNHNC, coll. Mendoça
 Beira Alta, Manteigas, Rota do Sol, 27.viii.2015, 1♀ det. & leg. A. Livory & R. Coulomb
 Estremadura, Torres Vedras, 22.vii.2013, 1♀, det. Baldock, leg. R. Andrade
 Estremadura, São MARTINHO do Porto, 21.viii.2015, 4♂♂ det. & leg. A. Livory & R. Coulomb
 Baixo Alentejo, Zambujeira do Mar, 18.vii.2012, 1♂, det. & leg. A. Livory & R. Coulomb
 Baixo Alentejo, Moura, 27.ix.2014, 6♂♂, det. & leg. A. Livory & R. Coulomb
 Algarve, Carrapateira, 9.vii.2009, 2♀♀, det. Baldock, leg. A. Livory & R. Coulomb
 Algarve, Tavira, 2.viii.2010, 2♂♂; 30.v.2011, 2♂♂, 1♀, det. Baldock, leg. A. Livory & R. Coulomb
 Algarve, Odeceixe, 26.vii.2010, 1♀, det. Baldock, leg. A. Livory & R. Coulomb
 Algarve, Alvor, 22.vii.2012, 3♂♂, det. & leg. A. Livory & R. Coulomb
 Algarve, Carrapateira, 28.vi.2015, 2♂♂, 1♀; 25.v.2017, 1♀, both det. & leg. Cross

H a l i c t i n a e

HALICTINI

Genus *Halictus* LATREILLE, 1804

20 species. The genus is clearly polylectic without exception (WESTRICH 1989; AMIET et al. 2001; MARTÍN et al. 2015).

Halictus brunnescens (EVERSMANN, 1852)

Central and Southern Portugal, rare, 2 records.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
 Beira Litoral, Aveiro, Cruz Alta, 21.viii.1984, 1♂, det. Ebmer. RNHL
 Algarve, Monchique, 23.vii.2010, 1♂, det. Ebmer, leg. A. Livory & R. Coulomb

Halictus (Seladonia) confusus SMITH, 1853 ssp. *glacialis* EBMER, 1979

Iberian endemic mountain subspecies. Central and Northern Portugal, scarce, 6 records.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Vale de Candieira 1400m, 2.viii.1990, 4♂♂, 3♀♀;
 Penhas da Sáude 1500m, 20-21.vii.1990; 20-21.vii.1990, 7♂♂, 2♀♀; Nave de Santo António
 1550m, 21.vii.1990, 1♂; Torre 1900m, 4.viii.1990, 3♂♂; Lagoa de Cántaros 1650m, 28.vii.1990,
 1♂, all det. Ebmer
 Minho, 1991/95, 3♀♀. Coll. Schwarz
 Minho, Braga, Fafe, Lagoa, 6.v.1995, 1♀, leg. G. Seidler
 Trás-os-Montes, Vila Real, Pouca de Aguiar, 15.vii.1953, 2♂♂. RNHL
 Trás-os-Montes, Bragança, Serra do Montesinho, Alto do Falgueirão, 30.vi.2016, 1♀, det. Pauly, leg.
 Wood
 Beira Alta, Serra da Estrela, Manteigas 1700m, 19.vi.1987, 3♀♀, leg. H. Teunissen
 Estremadura, Sesimbra, 28.iii.1971, 1♀, det. Ebmer. MNHNC, coll. Mendoça

Halictus consobrinus PÉREZ, 1895

Iberia and Morocco. Central and Northern Portugal, rare, 2 records.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Sáude 1500m, 20.vii.1990, 2♀♀, det.
 Ebmer
 Minho, Lagoa, Fafe, 21♂, 21♀. Coll. Schwarz
 Estremadura, Sobreira, 20.xi.1985, 2♀♀, det. Ebmer, leg. Cölln, Risch, Sorg

***Halictus crenicornis* BLÜTHGEN, 1923**

Iberia, France and Italy. Central and Northern Portugal, rare, 3 confirmed records.

M a t e r i a l : DINIZ 1959: Almendres

Minho, Braga, Fafe, Lagoa, 26.vii.1994, 1♂, leg. Schwarz

Douro Litoral, Resende, 16.vii.1953, 3♂♂, leg. N.F. d'Andrade, det. Ebmer. RNHL

Estremadura, Alfragede, 7.viii.1975, det. Pauly, FSAGX

Halictus crenicornis females not identified with certainty, 14 records

Trás-os-Montes, Estremadura, Baixo Alentejo, Algarve

[*Halictus dives* PÉREZ, 1895]

M a t e r i a l : DUSMET 1921: Famalicão, 1♀. A junior synonym of *Halictus (Seladonius) lucidipennis* SMITH, not in Europe, Ebmer, pers. comm.]

***Halictus fulvipes* (KLUG, 1817)**

Widespread, common, 53 records.

M a t e r i a l : DINIZ 1959: Lagos

KUHLMANN 1996: Serra da Estrela, Penhas da Sáude 1500 m, vi.1989, 2♀♀; vii.1990, 2♀♀, det. Ebmer
Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo,
Baixo Alentejo, Algarve

***Halictus fumatipennis* BLÜTHGEN, 1924 agg. ***

Iberian endemic. Northern Portugal, rare, 1 record. Two morphological forms in males,
with broad or small ringlets on the antennal segments. Ebmer pers. comm.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 16-26.vii.1994, 11♂ with broad ringlets, 1♀, det. Ebmer,
leg. G. Seidler. Coll. Schwarz

***Halictus (Seladonia) gavarnicus* PÉREZ, 1903**

Central Portugal, rare, 1 record.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central Portugal

Beira Alta, Guarda, São Felices de los Galigo, 17.vi.1981, 1♂, leg. H. Teunissen. RNHL

***Halictus (Seladonia) gemmeus* DOURS, 1872**

Widespread, common, 42 records.

M a t e r i a l : DINIZ 1959: many localities

Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Halictus maculatus* SMITH, 1848**

Widespread, scarce, 6 records.

M a t e r i a l : DUSMET 1921: Estremoz, 2♀♀

DINIZ 1959: Aldeia Nova de São Bento, Coimbra, Estremoz, Serra da Boa Viagem

Minho, 1991/95, 2♂♂, 11♀. Coll. Schwarz

Minho, Barcelos, Gilmonde, 24.viii.2014, 1♂, det. Ebmer; 7.ix.2015, 1♂, det. Pauly, both leg. R. Andrade

Trás-os-Montes, Alfândega da Fé, 24.vi.2016, 1♀, det. Pauly, leg. A. Penado

Trás-os-Montes, Rabal, 1 km S, 29.vi.2016, 3♀♀, det. Pauly, leg. Wood

Trás-os-Montes, Bragança, Reçonco, 3.vii.2016, 1♀, det. & leg. Wood

Douro Litoral, Loivos do Monte, 8.ix.2016, 2♂♂, det. & leg. Cross

[*Halictus mediterranellus* STRAND, 1909]

Sicily only. Probable misidentifications, Pauly, pers. comm.

M a t e r i a l : Minho, Braga, Lagoa, 10 km W. Cabaceiras de Castro, 1.v.1990, 1♀, det. Ebmer, leg. J. Guseinleitner
Estremadura, Sobreda, 13-25.vi.1985, 1♀, det. Ember, leg. Cölln, Risch, Sorg]

[*Halictus patellatus* MORAWITZ, 1873]

Not confirmed with certainty with males from Portugal; western males collected in central Spain. Females in Iberia are confused with *Halictus crenicornis*. Ebmer, pers. comm.

M a t e r i a l : DUSMET 1921: Porto, 1♀; Estremoz, 1♀
DINIZ 1959: Coimbra, Mitra
Trás-os-Montes, Vargas, 3 km N.E., 3.vii.2016, 1♀, det. Pauly, leg. Wood
Alto Alentejo, 28.vii.1970, 1♀, leg. H. Teunissen. RNHL]

Halictus (Vestitohalictus) pollinosus SICHEL, 1860

Central and Southern Portugal, scarce, 11 records.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Beira Litoral, Figueira da Foz, 26.viii.1968, 1♂, leg. M.A. Diniz. Coll. Diniz
Beira Alta, Viseu, Leomil, Moimenta da Beira, 9.x.2013, 1♂, det. Baldock/Ebmer, leg. R. Andrade
Estremadura, Lisboa, Parque Eduardo V11, 22.vii.1962, 1♂, det. Pauly, leg. J. Abraham & L. Horacsek.
BMNH
Estremadura, Peniche, Praia da Areia Branca, 29.vi.1969, 1♀, leg. M.A. Diniz. Coll. Diniz
Estremadura, Sobreda, 12.vii-1.viii.1985, 1♀, det. Ebmer, leg. Cölln, Risch, Sorg
Estremadura, Corroios, 18.vii.2016, 1♂, det. Wood, leg. Penado
Alto Alentejo; Alandroal, 15.vii.1963, 1♀, Pauly
Alto Alentejo, Montemor-o-novo, 28.vii.1970, 1♂, Pauly
Algarve, Cabanas, 24.vii.2012, 1♂, det. Baldock, leg. A. Ivory & R. Coulomb
Algarve, Carrapateira, 1.x.2014, 1♀; 14.ix.2016, 1♀, det. & leg. Cross

[*Halictus pyrenaeus* PÉREZ, 1903]

Pyrenees in France and Spain only. Probable misidentification.

M a t e r i a l : SAUNDERS 1881: Coimbra-Santo António, 3.vi.1880, 2♀♀, leg. A.E. Eaton]

Halictus quadricinctus (FABRICIUS, 1776)

Widespread, common, 31 records.

M a t e r i a l : DUSMET 1921: Porto, 1♂
DINIZ 1959: Mata de Leiria, Mitra, Porto, Soure
KUHLMANN 1996: Serra da Estrela, Penhas de Sáude, 17-29.vii.1990, 14♂♂, 1♀; Torre, 4.viii.1990, 1♀,
all det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo,
Alto Alentejo, Baixo Alentejo, Algarve

[*Halictus quadripartitus* BLÜTHGEN, 1924]

Iberian endemic. Central and Southern Portugal, rare, 4 records. No confirmed male records, and females cannot be separated from *Halictus crenicornis* with confidence, Pauly pers. comm.

M a t e r i a l : Estremadura, Sobreda da Caparica, 6.v.1986, 1♀, det. Ebmer, leg. Cölln. S. Risch: K. Brandt
Alto Alentejo, Montemor-o-novo, 28.vii.1970, 2♀♀, leg. H. Teunissen. RNHL
Algarve, Lagos, Barragem da Bravura, 20.vii.1997, 1♀, leg. H. Teunissen. RNHL
Algarve, Odeceixe, 23.vii.2010, 2♀♀, det. Ebmer, leg. A. Ivory & R. Coulomb]

***Halictus rubicundus* (CHRIST, 1791)**

Central and Northern Portugal, rare, 2 records.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela; Vale de Candieira 1400 m, 2.viii.1990, 3♂♂;
Penhas da Saúde 1500 m, 20-31.vii.1990, 11♂, 2♀♀; Torre 1900 m, 4.viii.1990, 1♂; Lagoa dos
Cântaros 1650 m, 28.vii.1990, 1♂, det. Ebmer
Minho, Braga, Fafe, Lagoa, 1994/95, 20♂♂, 30♀♀. Coll. Schwarz
Trás-os-Montes, Bragança, Serra do Montesinho, 4.vii.2016, 1♂, 1♀, det. Pauly, leg. Wood

***Halictus scabiosae* (ROSSI, 1790)**

Widespread, common, 78 records.

M a t e r i a l : SAUNDERS 1881: Coimbra, 3.vi.1880, 4♀♀, leg. A.E. Eaton,
DUSMET 1921: Porto, Estremoz
DINIZ 1959: numerous localities
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo,
Baixo Alentejo, Algarve

***Halictus (Seladonia) seladonius* (FABRICIUS, 1794)**

Widespread, scarce, 15 records.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Widespread
Minho, Caminha, 2.viii.1984, 1♂, RNHL
Minho, Braga, Lagoa environs, 1995, many specimens, leg. J. Guseleinleitner
Minho, Afifé, 7.vi.2001, 1♀, leg. W. Flievoet
Minho, Viana do Castelo, 30.vii.2001, 1♂, det. Ebmer, leg. C. Schmid-Egger
Minho, Braga, Vila Nova de Famalicão, Mouquim, 23.vii.2013, 1♀, det. Baldock, leg. R. Andrade
Minho, Barcelos, Gilmonde, 20.ix.2014, 1♀, det. Baldock, leg. R. Andrade
Douro Litoral, Leca da Palmeira, 3.viii.1962, 1♂, 5♀♀, det. Pauly, leg. J. Abraham & L. Horacsek.
BMNH
Douro Litoral, Angeiras, 5.vii.1969, 1♀, leg. M.A. Diniz
Douro Litoral, Leca de Palmeira, 9.vii.1969, 1♂, 2♀♀, leg. M.A. Diniz
Douro Litoral, Malta, 6.ix.2013, 1♀, det. Ebmer, leg. R. Andrade
Estremadura, Ericeira, 24.vii.1970, per. Pauly
Estremadura, Torres Vedras, 25.v.2012, 2♀♀, det. Baldock, leg. C. Reis
Baixo Alentejo, Cabo de Sines, 26.vii.1969, 1♀, leg. M.A. Diniz
Algarve, Odeceixe, 25.vii.2010, 1♀, det. Ebmer, leg. A. Ivory
Algarve, Monchique, 29.vii.2010, 1♀, det. Ebmer, leg. A. Ivory

***Halictus sexcinctus* (FABRICIUS, 1775)**

Northern Portugal, rare, 1 record.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Northern Portugal
Minho, Braga, Fafe, Lagoa, 17.vii.1994, 2♂♂, det. Ebmer, leg. G. Seidler. Coll. Schwarz. The only
specimens seen by Ebmer

***Halictus (Seladonia) smaragdulus* s.l. VACHAL, 1895**

Widespread, frequent, 30 records. PAULY et al. (2015) split the *Halictus smaragdulus* complex into six cryptic species. Until the geographic distribution of these species is better understood, all material here is referred to as *Halictus smaragdulus* s.l.

M a t e r i a l : DINIZ 1959; Coimbra, Mitra

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 20-31.vii.1990, 4♂♂, 3♀♀; Torre 1900m, 4.viii.1990, 1♂, 1♀; Nave de Santo António 1550m, 21.vii.1990, 1♀, det. Ebmer

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Halictus (Seladonia) subauratus* (ROSSI, 1792)**

Widespread, common, 34 records.

M a t e r i a l : DINIZ 1959; Buarcos, Castelo de Vide, Jugeiros, Mitra

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 20-29.vii.1990, 2♀♀, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Algarve

***Halictus tetrazonius* group KLUG, 1817**

Halictus tetrazonius sensu strictu sec. type, the western male is not in Iberia. Ebmer, pers. comm. Southern Portugal, rare, 1 record.

M a t e r i a l : DUSMET 1921: Estremoz

Algarve, Guia, 17.v.1999, 2♀♀, det. Ebmer, leg. Baldock

[*Halictus (Seladonia) tumulorum* (LINNAEUS, 1758)]

DINIZ 1960: Portugal

Not confirmed for Portugal. Western most limit in Europe is León, Spain. Ebmer, pers. comm.]

***Halictus (Vestitohalictus) vestitus* LEPELETIER, 1841**

Southern Portugal, frequent, 19 records.

M a t e r i a l : EBMER 1975: Cabo de Sines, 25.vii.1969, 1♀, leg. M.A. Diniz
Alto Alentejo, Baixo Alentejo, Algarve

Genus *Lasioglossum* CURTIS, 1833

70 species. The genus is predominantly polylectic, with only a few exceptions (WESTRICH 1989; AMIET et al. 2001; MARTÍN et al. 2015; WOOD et al. 2016).

***Lasioglossum aeratum* (KIRBY, 1802)**

Central and Northern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela: Penhas da Saúde 1500m; Nave de Santo António 1550m; Torre 1900m; Lagoa dos Cântaros 1650m; 18.vii-4.viii.1990, 17♂♂, 2♀♀, det. Ebmer
Minho, 1994/95, 1♂. Coll. Schwarz

Trás-os-Montes, Bragança, Serra do Montesinho, 4.vii.2016, 2♀♀, det. Pauly, leg. Wood

Beira Alta, Serra da Estrela, Torre, 1.viii.2001, 1♀, det. Ebmer, leg. C. Schmid-Egger

Beira Alta, Manteigas, Rota do Carvão, 28.viii.2015, 1♀, det. Pauly, leg. A. Livory & R. Coulomb

***Lasioglossum albipes* (FABRICIUS, 1781)**

Central and Northern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 3+7.vi.1989, 2♀♀; 29.vii.1990, 1♂, det. Ebmer

Minho, 1991/95, 1♂, 1♀. Coll. M. chwarz,

Beira Alta, Serra da Estrela, 1.viii.2001, 2♂♂, 1♀, det. Ebmer, leg. C. Schmid-Egger

***Lasioglossum albocinctum* (LUCAS, 1849)**

Widespread, common, 36 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: (as *Halictus platycestus* DOURS) A.E. Eaton, Silves, 15.v.1880, 1♀, leg. A.E. Eaton

DUSMET 1921: Estremoz, Porto

DINIZ 1959: Beja

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 18-24.vii.1990, 3♀♀, det. Ebmer

Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum algericolellum* STRAND, 1909**

West-Mediterranean. Widespread, frequent, 16 records. Previously considered a synonym of *Lasioglossum pauxillum*. Probably polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Widespread

Trás-os-Montes, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum angusticeps* (PERKINS, 1895)**

Widespread, scarce, 8 records. Polylectic.

M a t e r i a l : DINIZ 1959: Serra do Gerês

Minho, Braga, Fafe, Rio Ferro, 20.iv.1991, 1♀. Coll. Schwarz

Beira Alta, Trancoso, 5.viii.1983, 1♀. RNHL

Estremadura, Lisboa, Lameigas NW, 24.vii.1970, 1♂. RNHL

Alto Alentejo, Évora, Montemor-o-novo, 29.v.2011, 1♀, det. Ebmer, leg. A. Albermaz Valente

Algarve, Vila do Bispo, Guadalupe, 7.iv.1997, 2♀♀, leg. P. Hartmann

Algarve, Carrapateira, 8.viii.2001, 2♀♀, det. Ebmer, leg. C. Schmid-Egger

Algarve, Tavira, 26.v.2012, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb

Algarve, Alvor, Abicada, 22.v.2015, 1♂, det. Pauly, leg. J. D'Haeseleer

***Lasioglossum aureolum* (PÉREZ, 1903)**

Widespread, frequent, 17 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : DINIZ 1959: Vale de Couselha

Minho, Douro Litoral, Estremadura, Baixo Alentejo, Algarve

***Lasioglossum bimaculatum* (DOURS, 1872)**

West-Mediterranean. Widespread, scarce, 8 records. Polylectic.

M a t e r i a l : EBMER 1979: Portalegre, Setúbal

EBMER 2014: Braga, Lagoa, Fafe, 15.xi.1994, 1♀, leg. G. Seidler. Coll. Schwarz. Lousa, Coimbra, Monchique, Portalegre, Amarante, Setúbal

Trás-os-Montes, Bragança, Alfândega da Fé, 21.v-9.viii.2014, 1♂, 5♀♀; 16.iv-24.vi.2015, 10♀♀, det. Pauly/Baldock/Wood, leg. Penado
 Estremadura, Portinho, 8-20.iv.1970, 4♀♀, det. Pauly, leg. J.F. Perkins. BMNH
 Estremadura, PN das Serras de Aire e Candeeiros, 25.iv.2014, 3♀♀, det. Baldock, leg. M. Jenner
 Ribatejo, Torres Novas, Casa da Juge, 30.iv.2014, 2♀♀, det. Baldock, leg. M. Jenner
 Ribatejo, Golegã, Paul do Boquílobo, 27.iv.2014, 1♀, det. Baldock, leg. M. Jenner
 Alto Alentejo, Évora, Montemor-o-novo, 15.v.2011, 2♀♀, det. Ebner, leg. A. Albernaz Valente
 Algarve, Serra de Monchique, 12.x.2009, 1♀, det. Ebner, leg. Baldock

***Lasioglossum bluethgeni* EBMER, 1971**

Central Portugal, rare, 2 records. First records for Iberia. No published pollen records but likely to be polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Lisboa

Estremadura, Lisboa, Institute of Agronomy, garden, 27.iv.2016, det. Pauly, leg. M. Carvajal; 17.v.2016, det. Pauly, leg. V. Zina

***Lasioglossum brevicorne* (SCHENCK, 1868)**

Widespread, scarce, 12 records. Polylectic.

M a t e r i a l : DINIZ 1959: Aldeia Nova de São Bento, Castelo de Vide, Coimbra, Vale de Coselhas
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 3+5.vi/31.vii.1989, 4♀♀; 18+31.vii.1990, 1♂, 1♀; Nave de Santo António, 21.vii.1990, 1♂, det. Ebmer

Minho, Braga, Fafe, Lagoa, 1994/95, 2♂♂, 19♀♀. Coll. Schwarz

Trás-os-Montes, Bragança, Alfândega da Fé, 7.vii.-11.viii.2014, 1♀, det. Ebmer; 4♀♀, det. Pauly; vi-viii.2015, 16♀♀, det. Wood, leg. Penado

Douro Litoral, Porto, 2.viii.1962, 1♂, det. Pauly, leg. J. Abraham & L. Horacek. BMNH

Beira Alta, Viseu, Leomil, Moimenta da Beira, 7.vii.2013, 2♀♀, det. Ebmer, leg. R. Andrade

Beira Alta, Serra da Estrela, 30.ix.2014, 1♂, det. Pauly, leg. Á. Gonçalves

Beira Alta, Manteigas, 26.viii.2015, 2♂♂, 1♀, leg. A. Ivory & R. Coulomb; 29.vii.2015, 1♂, leg. R. Andrade; 14.vi.2016, 1♀, leg. A. Ivory & R. Coulomb, all det. Pauly

Estremadura, Sobreda, 13.vi-5.ix.1985, 5♀♀, det. Ebmer, leg. Cölln, Risch, Sorg

Estremadura, Corroios, 18.vii.2016, 1♀, det. Wood, leg. Penado

Algarve, Guia, 17.vii.2009, 1♀, det. Ebmer, leg. Baldock

***Lasioglossum breviventre* (SCHENCK, 1852)**

Central Portugal. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 7.vi.1989, 1♀; Torre 1900m, 4.viii.1990, 4♂♂, det. Ebmer

***Lasioglossum buccale* (PÉREZ, 1903)**

Central and Northern Portugal, rare, 3 records. Ebmer (2003) suggests an association with *Digitalis*, which our observations support. However, the one available pollen load contained pure *Rubus* pollen, so it is likely that *Lasioglossum buccale* is polylectic but will visit *Digitalis* at least for nectar, an unusual behaviour in a predominantly short-tongued genus.

M a t e r i a l : DINIZ 1959: Coimbra

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 5.vii.1989, 1♀; 18.vii-3.viii.1990, 3♂♂, 6♀♀, det. Ebmer

EBMER 2003: Fafe, Amarante, Gondar, Resende

Trás-os-Montes, Bragança, Chaves, 13-19.vii.1966, 2♀♀, det. Pauly, leg. I.H.H. Yarrow
Trás-os-Montes, Bragança, Montesinho, 29.vi.2016, 1♀, det. Pauly, leg. Wood
Trás-os-Montes, Bragança, Reconço, 3.vii.2016, 1♀, det. Pauly, leg. Wood

***Lasioglossum calceatum* (SCOPOLI, 1763)**

Central and Northern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: (as *Halictus cylindricus* FABRICIUS) A. E. Eaton, Portugal, 1880, 1♂, leg. A.E. Eaton
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, Nave de Santo António 1550m, Lagoa dos Cântaros 1650m, 18-28.vii.1990, 8♂♂, 3♀♀, det. Ebmer
Minho, Lagoa, 1994/95, 1♀. Coll. Schwarz
Trás-os-Montes, Serra da Montesinho, Barragem de Serra Serrada, 29.vi.2016, 1♀, det. & leg. Wood
Beira Alta, Serra da Estrela, Torre, 1.viii.2001, 1♀, det. Ebmer, leg. C. Schmid-Egger
Beira Alta, Manteigas, Rota da Carvão, 28.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb

***Lasioglossum callizonium* (PÉREZ, 1895)**

Central and Southern Portugal, frequent, 26 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : DUSMET 1921: Elvas, Mitra
Beira Alta, Estremadura, Alto Alentejo, Algarve

***Lasioglossum capitale* (PÉREZ, 1903)**

Iberia and north-west Africa. Central and Southern Portugal, scarce, 10 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Estremadura, Serra da Arrábida, 3.v.1987, 1♀, leg. H. Teunissen. RNHL
Estremadura, Sesimbra, Serra da Arrábida, 6.vi.1989, 3♂♂, 4♀♀, det. & leg. P. Westrich
Estremadura, Mafra, 21.iii.2013, 1♀, det. Ebmer, leg. C. Reis
Estremadura, Lisboa, 9.vi.2016, Institute of Agronomy, reserve, 1♀, det. Pauly
Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♀, det. Ebmer, leg. A. van Harten
Baixo Alentejo, Mértola, 4.vi.2016, 1♀, det. Pauly, leg. A. Livory & R. Coulomb
Algarve, Salir, 8.vi.1967, 2♀♀, leg. M.A. Diniz
Algarve, Carvoeiro, 18.vi.1988, 1♀, det. Pauly, leg. J.W. Ismay
Algarve, São Brás de Alportel, 12.vi.2015, 1♂, det. Pauly, leg. A. Gonçalves
Algarve, Tavira, 29.v.2016, 1♀, det. Pauly, leg. A. Livory & R. Coulomb

***Lasioglossum collopiense* (PÉREZ, 1903)**

Southern and Northern Portugal, rare, 3 records.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Southern and Northern Portugal
Trás-os-Montes, Serra do Montesinho, Alto de Falgueirão, 30.vi.2016, 1♀, det. Pauly, leg. Wood
Trás-os-Montes, Moimenta, 2.vii.2016, 2♀♀, det. Pauly, leg. Wood
Algarve, Salema, 2.ix.2015, 1♂, det. Pauly, leg. Cross

***Lasioglossum costulatum* (KRIECHBAUMER, 1873)**

Widespread, scarce, 14 records. Oligolectic on Campanulaceae.

M a t e r i a l : SAUNDERS 1881: Monchique 500 m, 21.v.1880, 1♀, leg. A.E. Eaton

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 3-7.vi.1989, 16♀♀; 22-31.vii.1990, 1♂, 2♀♀; Lagoa dos Cântaros, 28.vii.1990, 4♂♂, 1♀, all det. Ebmer
Trás-os-Montes, Bragança, Alfândega da Fé, 26-28.v.2015, 2♀♀; 22-26.vi.2016, 5♀♀, det. Wood, leg. A. Penado
Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 3♀♀, det. & leg. Wood
Trás-os-Montes, Bragança, 3km N of Fontes, 1.vii.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Serra da Montesinho, Barragem de Serra Serrada, 4.vii.2016, 2♀♀, det. & leg. Wood
Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Serra da Montesinho, Porto do Sabor, 4.vii.2016, 1♀, det. & leg. Wood
Beira Alta, Serra da Estrela, Guarda, 17.vii.1996; Caldas de Manteigas, 775 m, 4♂♂, 2♀♀; Pousada São Lourenço, 1♀; Covão do Forno, 1570 m, 8♂♂, per Ortiz-Sánchez
Beira Alta, Tarouca, Gouviães, 4.viii.2008, 1♂, det. Ebmer, leg. P. L'Homme
Algarve, Monchique, 20.vii.1973, 3♀♀, det. Pauly, FSAGX; 29.vii.2010, 2♂♂, 2♀♀, det. Ebmer, leg. A. Livory
Algarve, Ribeira de Odelouca, 23.vi.1988, 3♂♂, det. Pauly, leg. J.W. Ismay

***Lasioglossum discum* (SMITH, 1853) ssp. *fertoni* VACHAL, 1895**

West-Mediterranean subspecies. Widespread, common, 37 records. Polylectic.

M a t e r i a l : BLÜTHGEN 1924: Beja

DINIZ 1959: (as *Lasioglossum aegyptiellum* STRAND) Évora, Mitra, Ribeira de Valverde, Soure
Trás-os-Montes, Douro Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum dusmeti* (BLÜTHGEN, 1924)**

Iberian endemic. Central and Northern Portugal, rare, 2 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 1979: Coimbra

Minho, Braga, Fafe, Lagoa, 6.iv.1995, 1♀; 18.v.1995, 1♀, leg. G. Seidler. Coll. Schwarz
Estremadura, Sobreira, 13.vi-12.vii.1985, 1♂, 1♀, det. Ebmer, leg. Cölln, Risch, Sorg

***Lasioglossum glabriuscum* MORAWITZ, 1872**

Widespread, frequent, 16 records. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Minho, Estremadura, Alto Alentejo, Algarve

***Lasioglossum griseolum* (MORAWITZ, 1872)**

Widespread, scarce, 8 records. Poyleptic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Trás-os-Montes, Bragança, Alfândega da Fé, 25.v.2014, 1♀, det. Pauly, leg. Penado
Beira Litoral, Estarreja, Canelas, 7.iii.2014, 1♀, det. Ebmer, leg. R. Andrade
Estremadura, Sobreira, 13.vi-14.x.1985, 3♂♂, 15♀♀, det. Ebmer, leg. Cölln, Risch, Sorg
Estremadura, Torres Vedras, A Dos Cunhados, 22.viii.2013, 1♀, det. Ebmer, leg. R. Andrade
Estremadura, Nazaré, 19.viii.2015, 1♂, 1♀, det. Pauly, leg. A. Livory & R. Coulomb
Algarve, Faro, Bordeira, 20.ix.2010, 1♀, det. Ebmer, leg. H. Whiteley
Algarve, Tavira, 23-25.v.2012, 1♂, det. Baldock; 30.v.2016, 1♂, 1♀, det. Pauly, all leg. A. Livory & R. Coulomb

***Lasioglossum ibericum* EBMER, 1975**

Iberia and France. Widespread, scarce, 11 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Widespread
Minho, Braga, Fafe, Lagoa, 5.x.1994, 1♀. Coll. Schwarz
Trás-os-Montes, Pinhão, Casal, 15.vii.1985, 1♀, leg. H. Teunissen. RNHL
Trás-os-Montes, Bragança, Alfândega da Fé, 27.vi.2014, 1♀; 11.viii.2014, 1♀, det. Pauly, leg. A. Penado
Estremadura, Portinho, 8-20.iv.1970, 1♀, det. Pauly, leg. J.F. Perkins. BMNH
Estremadura, Cabo Espichel, 4.v.2011, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb
Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 1♀, det. Pauly, leg. A. Livory & R. Coulomb
Algarve, Carvoeira, Centeanes beach, 22.x.2005, 1♀, leg. J. Olbrich. Museum Erfurt
Algarve, Guia, 20.iv.2005, 1♀, det. Ebmer, leg. Baldock
Algarve, Ponte da Piedada, Lagos, 16.ix.2015, 1♀, det. & leg. Wood
Algarve, Lagoa, Mourinha cliffs, 16.x.2015, 1♀, det. Wood, leg. Baldock

***Lasioglossum immunitum* (VACHAL, 1895)**

West-Mediterranean. Widespread, common, 50 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : DINIZ 1959: Aldeia Nova de São Bento, Castelo de Vide, Coimbra, Évora, Mata de Trafaria, Mitra, Mogofores, Provença, Ribeira de Valverde, Santarem, Soure
Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum interruptum* (PANZER, 1798)**

Widespread, common, 60 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: west of Vila Real, 24.vi.1880, 1♀, leg. A.E. Eaton
DINIZ 1959: Aldeia Nova de São Bento, Castelo de Vide, Coimbra, Herdades do Alamo, Mitra, Soure
Trás-os-Montes, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum laevigatum* (KIRBY, 1802) ***

Southern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : Alto Alentejo, Portalegre, PN Serra São Mamede, Castelo de Vide, 3.iv.2017, 3♀♀, det. Baldock, leg. M. Jenner

[*Lasioglossum laterale* (BRULLÉ, 1832)]

Probable misidentification, most westerly known specimens from Barcelona, Ebmer, pers. comm.

M a t e r i a l : SAUNDERS 1881: (as *Halictus bifasciatus* BRULLÉ) Monchique, slopes of Picota at 500 m, 1♀, leg. A.E. Eaton]

***Lasioglossum laticeps* (SCHENCK, 1868)**

Central and Southern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : Pauly & Ortiz-Sánchez 2017: Widespread
Beira Alta, Viseu, Santa Comba Dão, 15.vii.1992, 1♂, det. Pauly
Beira Alta, Tarouca, Gouviães 600m, 3.viii.2008, 1♀, det. Ebmer, leg. P. L'Homme

Estremadura, Portinho, 8-20.iv.1970, 3♀♀, det. Pauly, leg. J.F. Perkins. BMNH
Algarve, Luz, 9.vi.2001, 1♂, det. Ebmer, leg. G.W. Allen

***Lasioglossum lativentre* (SCHENCK, 1853)**

Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Northern Portugal
Minho, Braga, Fafe, Lagoa, 8.iii.1985, 1♀, leg. G. Seidler. Coll. Schwarz

***Lasioglossum leucopodus* (KIRBY, 1802)**

Northern Portugal, rare, 1 record.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Northern Portugal
Trás-os-Montes, Serra do Montesinho, Alto de Falgueirão, 1♀, det. Pauly, leg. Wood

***Lasioglossum leucozonium* (SCHRANK, 1781) ssp. *cedri* EBMER, 1976**

West-Mediterranean subspecies. Widespread, common, 36 records. Polylectic.

M a t e r i a l : DUSMET 1921: Buçaco
DINIZ 1959: Castelo de Vide, Coimbra, Évora, Monchique, Porto, Serra do Montemuro, Soure
KUHLMANN 1996: Serra da Estrela at Penhas da Saúde, 3-6.vi.1989, 6♀♀, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo,
Alto Alentejo, Algarve

***Lasioglossum limbellum* (MORAWITZ, 1876)**

Widespread, scarce, 13 records. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Minho, 1991/95, 7♀♀. Coll. Schwarz.
Douro Litoral, Amarante, leg. M.A. Diniz (no dates)
Douro Litoral, Porto, 12.viii.1962, 2♂♂, det. Pauly, leg. J. Abraham & L. Horacsek. BMNH
Beira Litoral, Figueira da Foz, leg. M.A. Diniz (no dates)
Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 1♀, det. Pauly, leg. A. Livory & R. Coulomb
Estremadura, near Lisboa, 20-30.v.1949, 1♂, 1♀, det. Pauly, leg. P.M.F. Verhoeff. BMNH
Estremadura, Lisboa, leg. M.A. Diniz (no dates)
Estremadura, Sesimbra, 3.vi.2011, 1♂, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb
Baixo Alentejo, Almograve, 22.ix.2014, 1♂, 3♀♀, det. Ebmer, leg. A. Livory & R. Coulomb
Baixo Alentejo, Moura, 27.ix.2014, 1♂, det. Pauly, leg. A. Livory & R. Coulomb
Algarve, Silves, 12.x.2010, 1♀, det. Ebmer, leg. Baldock
Algarve, Aljezur, Odeceixe, 25.v.2011, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb
Algarve, Carrapateira, 14.ix.2016, 1♀, det. Pauly, leg. Baldock

***Lasioglossum lissonotum* (NOSKIEWICZ, 1925)**

Central Portugal. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Torre, 4.viii.1990, 1♀, 36♂♂, det. Ebmer,
confirmed Pauly 2016

***Lasioglossum littorale* (BLUTHGEN, 1923)**

Widespread, rare, 4 records. No published pollen preferences, likely to be polyleptic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Southern and Northern Portugal

Douro Litoral, Costa Nova, 11-12.vi.2016, 2♂♂, 2♀♀, det. Pauly, leg. A. Livory & R. Coulomb
Estremadura, near Lisboa, 20-30.v.1949, 3♂♂, det. Pauly, leg. P.M.F. Verhoeff. BMNH
Baixo Alentejo, Milfontes, Odemira, 28.v.1987, 1♀, det. Ebmer, leg. H. Tussac
Baixo Alentejo, Zambujeira do Mar, 18.vii.2012, 1♂, det. Ebmer, A. Livory & R. Coulomb

***Lasioglossum lucidulum* (SCHENCK, 1861)**

Northern Portugal, scarce, 11 records. Polyleptic.

M a t e r i a l : EBMER 2014: Portugal

Minho, Braga, Fafe, 5.vii.1992, 1♀. Coll. Schwarz

Minho, Braga, Vila Nova de Famalicão, Mouquim, 23.vii.2013, 1♀, det. Baldock, leg. R. Andrade

Minho, Braga, Vila Nova de Famalicão, Novais, 28.vii.2013, 1♀, det. Baldock, leg. R. Andrade

Minho, Barcelos, Gilmonde, 16.iv.2014, 1♀; 18.vii.2013, 1♀; 1.iii.2016, 1♀, all det. Pauly, leg. R. Andrade

Trás-os-Montes, Peso da Régua, 8.v.1990, 1♀, leg. J. Gusenleitner

Douro Litoral, Porto, 14.vii.1954, 1♀, leg. M.A. Diniz

Douro Litoral, Porto, Leca da Palmeira, 7.vii.1962, 1♀, det. Pauly, leg. J. Abraham & L. Horacek. BMNH

Douro Litoral, Amarante, Larim, 30.iv.1990, 1♀, leg. J. Gusenleitner

Douro Litoral, Póvoa de Varzim, Estela, 18.vii.2013, 1♀, det. Pauly, leg. R. Andrade

***Lasioglossum malachurum* (KIRBY, 1802)**

Widespread, common, 121 records. Widely polyleptic.

M a t e r i a l : DUSMET 1921: Estremoz

Blüthgen 1924: Beja, Lagos

DINIZ 1959: many localities

Westrich 2008: Salir, iv.2006, 1♀

Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Algarve

***Lasioglossum mandibulare* (MORAWITZ, 1866) (= *Lasioglossum carneiventre* DOURS)**

Central and Southern Portugal, scarce, 9 records. No published pollen preferences, likely to be polyleptic. *Echium* is a confirmed pollen source in Portugal.

M a t e r i a l : EBMER 2014: Portugal

Estremadura, near Lisboa, 20-30.v.1949, 1♂, 1♀, det. Baldock, leg. P.M.F. Verhoeff. BMNH

Algarve, São Brás de Alportel, São Romão, vii-viii.1977, 10♂♂, 11♀, det. Baldock, leg. J. Passos de Carvalho. BMNH

Algarve, Castro Marim, São Bartolomeu, 26.vii.1967, 1♀, leg. M.A. Diniz

Algarve, Cacela Velha, 25.vii.2012, 1♂, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb; 27.iv.2016, 2♀♀, det. & leg. Wood; 16.iv.2017, 5♀♀, det. & leg. Baldock

Algarve, Pêra, Praia Grande, 30.iv.2016, 1♀; 17.iv.2017, 1♀, det. & leg. Cross

Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♀, det. & leg. Wood

***Lasioglossum marginatum* (BRULLÉ, 1832)**

Widespread, scarce, 7 records. Polyleptic.

M a t e r i a l : DINIZ 1959: Porto, Serra do Montemuro

Minho, Lagoa, 1994/95, 38♀♀. Coll. Schwarz

Trás-os-Montes, Bragança, Alfândega da Fé, 2.vi.2014, 1♀, det. Pauly, leg. Penado

Trás-os-Montes, Bragança, Alfândega da Fé, vi-viii.2015, 39♀♀, det. Wood, leg. Penado

Trás-os-Montes, Bragança, Mirando do Douro, 1.v.2016, 1♀, det. Pauly, leg. A. Goncalves

Trás-os-Montes, Douro International Park, W of Salto do Saucelle, 7.iv.2017, 2♀♀, det. Baldock, leg. M. Jenner
Alto Alentejo, Évora, Montemor-o-Novo, 1.v.2011, 1♀, det. Ebmer, leg. A. Albernaz Valente
Baixo Alentejo, Mértola, Alcaria river, 25.iii.2016, 1♀, det. Pauly, leg. A. Gonçalves

***Lasioglossum maurusium* (BLUTHGEN, 1935) ***

West-Mediterranean. Southern Portugal, rare, 1 record. Pollen preferences unclear, possibly oligolectic on Lamiaceae like the closely related *Lasioglossum clypeare* (EBMER 2003).

M a t e r i a l : Algarve, Silves, 20.iv.2012, 4♀♀, det. Pauly, leg. Baldock

***Lasioglossum mediterraneum* (BLÜTHGEN, 1926)**

Widespread, frequent, 16 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Vale do Zêzere 1000m, viii.1987, 1♀; Manteigas, 26.vii.1990, 1♀, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum mesosclerum* (PÉREZ, 1903)**

Central and Southern Portugal, rare, 2 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 2000: Lisboa, Baixo Alentejo, Algarve
Estremadura, Sobreira, 13.vi-12.vii.1985, 1♂, 3♀♀, det. Ebmer, leg. Cölln, Risch, Sorg
Algarve, Carrapateira, 17.ix.2014, 1♂, det. Pauly, leg. A. Livory & R. Coulomb

***Lasioglossum minutissimum* (KIRBY, 1802)**

Widespread, scarce, 22 records. Polylectic.

M a t e r i a l : DUSMET 1921: Évora; Mitra; Estremoz; Famalicão
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 20-29.vii.1990, 3♂♂, 1♀, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum minutulum* (SCHENCK, 1853)**

Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Northern Portugal
Minho, Braga, Vila do Gerês, 31.vii.2001, 1♀, det. Ebmer, leg. C. Schmid-Egger

***Lasioglossum morio* (FABRICIUS, 1793)**

Widespread, frequent, 19 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 18-31.vii.1990, 6♂♂, 2♀♀; Lagoa dos Cântaros, 28.vii.1990, 1♀; Torre, 4.viii.1990, 2♂♂, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Baixo Alentejo, Algarve

***Lasioglossum musculoides* EBMER, 1974**

Iberia and north-west Africa. Central and Southern Portugal, rare, 1 record. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 1974: Baixo Alentejo, Cabo de Sines, 26.vii.1969, 2♀♀ leg. M.A. Diniz.
Paratype

Estremadura, Cascais, Boca d'Inferno, 7.vii.1982, 1♀, det. Pauly, leg. K.M. Guichard. BMNH

***Lasioglossum nitidiusculum* (KIRBY, 1802)**

Central and Northern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 18.vii.1990, 1♂; Lagoa dos Cântaros 1650m, 28.vii.1990, 1♂, det. Ebmer

Minho, Braga, Fafe, Lagoa, 1994/95, 1♀. Coll. Schwarz

Beira Alta, Serra da Estrela, Torre, 1.viii.2001, 2♂♂, det. Ebmer, leg. C. Schmid-Egger

***Lasioglossum orihuelicum* BLÜTHGEN, 1924**

Iberia and north-west Africa. Central and Southern Portugal, rare, 4 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 1974: (as *Lasioglossum andradei* EMBER) Lisboa east, Montijo, 3.v.1953, 1♀, leg. N.F. d'Andrade

Algarve, Fuseta, 21.vi.1978, 8♂♂, det. Pauly, leg. K.M. Guichard. BMNH

Algarve, Alvor, Marsh Rio de Alvor, 23.iii.2015, 1♀, det. Pauly, leg. J. D'Haeseleer

Algarve, Mexilhoeira Grande, 24.vi/8.vii.2015, 2♀♀, det. Pauly, leg. J. D'Haeseleer

***Lasioglossum pallens* (BRULLÉ, 1832)**

Widespread, scarce, 6 records. Polylectic.

M a t e r i a l : Pauly & Ortiz-Sánchez 2017: Widespread

Minho, Braga, Fafe, Lagoa, 4.iii.1995, 1♂. coll. Schwarz

Beira Litoral, Leiria, Ansião, Chão de Couce, 23.iv.2015, 1♀, det. Pauly, leg. A. Gonçalves

Estremadura, Portinho, 8-20.iv.1970, 1♀, det. Pauly, leg. J.F. Perkins

Alto Alentejo, Portalegre, 17.iii.1970, 1♂, leg. M.A. Diniz

Alto Alentejo, Reguengo, 19.iii.1970, 1♂, leg. M.A. Diniz

Algarve, Rasmalho, 16.iii.2015, 1♂, det. Pauly, leg. Cross

***Lasioglossum parvulum* (SCHENCK, 1853)**

Central and Northern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 5.vi.1989, 1♀; Lagoa dos Cântaros 1650 m, 28.vii.1990, 1♂, det. Ebmer

Trás-os-Montes, Castro de Avelãs, 10.v.2015, 1♂, 1♀, det. Pauly, leg. R. Andrade

Trás-os-Montes, Bragança, 29.vi.2016, 1♀, det. Pauly, leg. Wood

***Lasioglossum pauperatum* (BRULLÉ, 1832)**

Widespread, common, 47 records. Polylectic.

M a t e r i a l : DINIZ 1959: Aldeia Nova de São Bento; Coimbra; Lezírias do Tejo; Mogofores

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 3-7.vi.1989, 4♀♀, det. Ebmer

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum pauxillum* s.l. (SCHENCK, 1853)**

Widespread, common, 38 records. Polylectic. The previously synonymous species *Lasioglossum algericolellum* is distinct and is also distributed throughout Portugal. Until this material can be revisited, these records should be considered *Lasioglossum pauxillum* s.l.

M a t e r i a l : DINIZ 1959: Coimbra; Mitra; Mogofores; Quinta; Serra do Gerês; Serra de Montemuro
KUHLMANN 1996: Serra da Estrela at Penhas da Saúde, 18.vii.1990, 1♂, det. Ebmer
Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum perclavipes* (BLÜTHGEN, 1934)**

Central and Southern Portugal, scarce, 14 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 1979: Setúbal
WESTRICH 2008: Salir, iv.2006, 1♂
Beira Litoral, Leiria, Serra dos Candeeiros, Arrimal, 6.iv.2017, 5♀♀, det. Baldock, leg. M. Jenner
Estremadura, Lisboa, Institute of Agronomy, 7.iv.2016, 1♀, det. Baldock, leg. M. Carvajal;
22.iv/20.vi.2016, 1♂, 1♀, det. Wood, leg. V. Zina
Estremadura, Mafra, 6.v.2013, 1♀, det. Baldock, leg. C. Reis
Algarve, Santa Bárbara de Nexe, 20.iv.2005, 1♀, det. Ebmer, leg. Baldock;
Algarve, Guia, 27.iv.2008, 1♀, det. Ebmer; 12.iii.2009, 1♂, det. Kuhlmann, leg. Baldock
Algarve, Pêra dunes, 12.iii.2009, 1♀, det. Ebmer, leg. Baldock
Algarve, Silves, 10.vi.2011, 1♀, det. Ebmer, leg. Baldock
Algarve, Mexilhoeira Grande, 28.i.2015, 1♀; 3.iii.2015, 1♂; 12/20.v.2015, 2♀♀, det. Pauly/Wood, leg. J. D'Haeseleer

***Lasioglossum politum* (SCHENCK, 1853) ***

Southern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : Alto Alentejo, Évora, 26.ix.2014, 2♀♀, det. Ebmer, leg. A. Ivory & R. Coulomb

***Lasioglossum prasinum* (SMITH, 1848)**

Widespread, common, 31 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: Silves, 15.v.1880, 1♀; Ponte de Morcellos, 12.vi.1880, 1♂, 1♀, leg. A.E. Eaton
BLÜTHGEN 1924: Monchique
DINIZ 1959: Mata de Leiria, Ribeira de Valverde, Serra de Buçaco, Serra de Meia Via, Serra de Monchique
KUHLMANN 1996: Serra da Estrela, Vale de Candieira, 2.viii.1990, 1♂, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum pseudoleptocephalum* (BLÜTHGEN, 1923)**

Iberia and north-west Africa. Southern and Northern Portugal, frequent, 22 records. No published pollen preferences, analysis of three pollen loads and observations suggest polylecty, with Asteraceae, Brassicaceae and Scrophulariaceae confirmed pollen sources in Portugal.

M a t e r i a l : DINIZ 1960: Portugal

EBMER 1979: Monte Gordo
Minho, Baixo Alentejo, Algarve

***Lasioglossum pseudoplanulum* (BLÜTHGEN, 1924)**

Widespread, rare, 5 records. Polylectic.

M a t e r i a l : EBMER 2000: Coimbra, Boliqueime, Lisboa
Trás-os-Montes, Bragança, Alfândega da Fé, 1.vii.2014, 1♀, det. Pauly, leg. Penado
Estremadura, Sobreira, 1-14.iv.1985, 2♀♀, det. Ebmer, leg. Risch, Cölln
Algarve, Aljezur, Odeceixe, 25.vii.2010, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb
Algarve, Salema, 21.vii.2012, 1♀, det. Ebmer, leg. A. Livory & R. Coulomb
Algarve, Silves, 22.vi.2014, 1♂, det. Ebmer, leg. Baldock

***Lasioglossum punctatissimum* (SCHENCK, 1853)**

Widespread, frequent, 29 records. Polylectic.

M a t e r i a l : DINIZ 1959: Buçaco, Coimbra, Mata de Leiria, Serra Monfurado
KUHLMANN 1996: Serra da Estrela, common at 3 locations, 7.vi.-4.viii.1990, det. Ebmer
WESTRICH 2008: Salir, iv.2006, 1♀
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto
Alentejo, Algarve

***ssp. angustifrons* (VACHAL, 1892)**

Iberian endemic subspecies (or form) with partly red metasoma. In Portugal this form appears to be restricted to coastal sand dunes.

M a t e r i a l : Douro Litoral, Costa Nova, 11.vi.2016, 1♀, det. Pauly, leg. A. Livory and R. Coulomb
Algarve, Quarteira, 16-19.vi.1978, 1♀, det. Pauly, leg. K.M. Guichard. BMNH
Algarve, Pêra dunes, 2.iv.2015, 1♀, det. & leg. Wood
Algarve, Carrapateira, 3.iv.2015, 1♀, det. & leg. Wood; 14.ii.2017, 1♀, det. Wood, leg. Cross

***Lasioglossum puncticolle* (MORAWITZ, 1872)**

Central and Southern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Estremadura, near Lisboa, 20-30.v.1949, 1♀, det. Pauly, leg. P.M.F. Verhoeff. BMNH
Estremadura, Lisboa, 29.iii.1953, 1♀, leg. M.A. Diniz
Ribatejo, Santarem, 5.iv.1977, 1♀, det. Ebmer. MNHNC, coll. Mendoça
Algarve, Guia, 15.vii.2009, 4♀♀, det. Jozan/Ebmer/Pauly, leg. Baldock

***Lasioglossum pygmaeum* (SCHENCK, 1853)**

Southern and Northern Portugal, rare, 3 records. Polylectic.

M a t e r i a l : EBMER 2014: Portugal
Minho, Braga, Fafe, Lagoa, 15.iii.1995, 1♀, det. Ebmer. Coll. Schwarz
Trás-os-Montes, Bragança, Gondesende, 5.x.2015, 1♀, det. Pauly, leg. A. Gonçalves
Alto Alentejo, Évora, Mora, vi.2013, 1♀, det. Ebmer, leg. A. Albernaz Valente

***Lasioglossum quadrinotatum* (KIRBY, 1802)**

Central and Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : DUSMET 1921: Buçaco
Minho, Braga, Fafe, Lagoa, 1994/95, 1♀. Coll. Schwarz

***Lasioglossum semilucens* (ALFKEN, 1914)**

Central and Northern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 23.vii.1990, 2♂♂, 2♀♀,
det. Ebmer
Minho, Fafe, Lagoa, 5.x.1994, 1♀, det. Ebmer, leg. Schwarz. Coll. Schwarz
Trás-os-Montes, Bragança, Montesinho, 4.vii.2016, 1♀, det. Pauly, leg. Wood

***Lasioglossum sexnotatum* (KIRBY, 1802)**

Central and Northern Portugal, rare, 5 records. Polylectic.

M a t e r i a l : DINIZ 1960: Portugal
Minho, Lagoa, Fafe, 1994/5, 1♂. Coll. Schwarz
Trás-os-Montes, Bragança, Alfândega da Fé, vi-viii.2015, 1♀, det. Wood, leg. Penado
Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Douro International Park, N of Ifanes, 8.iv.2017, 2♀♀, det. Baldock, leg. M. Jenner
Beira Alta, Gouveia, Paços da Serra, 8.ii.1977, 1♀, det. Baldock. MNHN, coll. Mendoça

***Lasioglossum smethmanellum* (KIRBY, 1802)**

Widespread, frequent, 16 records. Polylectic.

M a t e r i a l : DUSMET 1921: Porto, Mata de Leiria
KUHLMANN 1996: Serra da Estrela, Torre, 4.vii.1990, 1♂, det. Ebmer
Minho, Douro Litoral, Beira Litoral, Beira Baixa, Estremadura, Baixo Alentejo, Algarve

***Lasioglossum soror* SAUNDERS, 1901**

Central Portugal, rare, 1 record. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 2014: Portugal
Estremadura, Peniche, Ilhas Berlengas, 12.vii.1977, 1♀, leg. H. Teunissen. RNHL

***Lasioglossum sphecodimorphum* (VACHAL, 1892)**

Iberia and North Africa. Southern and Northern Portugal, rare, 2 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : DUSMET 1932: 1♂
DINIZ 1959: Mitra
Trás-os-Montes, Bragança, Alfândega da Fé, 16.v.2014, 1♀, det. Ebmer, leg. Penado
Algarve, Rasmalho, 3.iii.2015, 1♀, det. Pauly, leg. Cross

***Lasioglossum strictifrons* (VACHAL, 1895)**

West-Mediterranean. Southern Portugal, rare, 2 records. No published pollen preferences, likely to be polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Southern Portugal
Algarve, Monte Gordo, 12-19.iii.1999, 1♂, leg. M. Boness
Algarve, Carrapateira, 8.vi.2016, 1♀, det. Pauly, leg. Cross

***Lasioglossum subaenescens* (PÉREZ, 1895) ***

Central Portugal, rare, 1 record. No published pollen preferences, likely to be polylectic.
M a t e r i a l : Estremadura, Cascais, Boca d’Inferno, 7.vii.1982, 1♂, leg. K.M. Guichard. BMNH

***Lasioglossum subhirtum* (LEPELETIER, 1841)**

Central and Northern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 7.vi.1989, 1♀, det. Ebmer
Minho, Braga, Lagoa, Fafe, 15.iii.1995, 1♂; 1.iv.1995, 1♀, leg. G. Seidler. Coll. Schwarz
Trás-os-Montes, Bragança, Alfândega da Fé, 27.vi.2014, 1♂, det. Pauly, leg. Penado
Trás-os-Montes, Carrazedo, 19.vi.2015, 1♂, det. Pauly, leg. R. Andrade
Douro Litoral, Vila Nova Gaia, Avintes, 1.iv.2009, 3♀♀, det. Baldock/Pauly, leg. R. Andrade

***Lasioglossum transitorium* (SCHENCK, 1868) ssp. *planulum* (PÉREZ, 1903)**

West-Mediterranean subspecies. Southern and Northern Portugal, rare, 2 records.
Polylectic.

M a t e r i a l : BLÜTHGEN 1924: Lagos
DINIZ 1959: Lagos
Trás-os-Montes, Bragança, Alfândega da Fé, 27.v + 27.vi.2014, 2♀♀, det. Pauly, leg. Penado
Douro Litoral, Resende, Constancia, leg. M.A. Diniz (no dates)

***Lasioglossum vergilianum* (PÉREZ, 1903)**

Iberian endemic. Southern Portugal, rare, 1 record. No published pollen preferences, likely to be polylectic.

M a t e r i a l : EBMER 1995: Praia de Carvoeiro, 23-26.vii.1979, 1♂. Museum Senckenberg

***Lasioglossum villosulum* (KIRBY, 1802)**

Widespread, common, 52 records. Oligolectic on Asteraceae.

M a t e r i a l : DINIZ 1959: Mata de Leiria, Minhotões, Mitra, Quinta, Serra do Montemuro, Soure
KUHLMANN 1996: Serra da Estrela, Nave de Santo António 1550m, 21.vii.1990, 1♀; Penhas da Saúde
1500m, 3-7.vi.1989, 5♀♀, det. Ebmer
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo,
Alto Alentejo, Baixo Alentejo, Algarve

***Lasioglossum virens* (ERICHSON, 1835)**

West-Mediterranean. Central and Southern Portugal, frequent, 28 records. No published pollen preferences, analysis of seven pollen loads and observations suggest polylecty with Asteraceae, Brassicaceae, Fabaceae and Scrophulariaceae confirmed as Portuguese pollen sources.

M a t e r i a l : EBMER 1979: Praia das Maçãs
Estremadura, Baixo Alentejo, Algarve

***Lasioglossum xanthopus* (KIRBY, 1802)**

Central and Southern Portugal, scarce, 7 records. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Central and Southern Portugal
Estremadura, Sobreda, 1-14.iv.1986, 1♂, det. Ebmer, leg. Risch
Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♀, det. & leg. Baldock
Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♀, det. Baldock, A. van Harten
Algarve, Vila do Bispo, Hortas do Tabual, 16.v.1995, 1♀, leg. J. Guseleinleitner
Algarve, Bensafrim, 3.iv.1997, 2♀♂, leg. P. Hartmann
Algarve, Aljezur, Praia de Monte Clérigo, 12.x.2009, 1♂, det. & leg. Baldock
Algarve, Monchique, 17.iv.2014, 1♀, det. Pauly, leg. E. Dufrêne

ssp. *soreli* DOURS, 1872

Iberian endemic subspecies, previously known only from central Spain. The taxonomic status of this species requires investigation as it is sympatric with the nominate form on the west coast of Portugal.

M a t e r i a l : Algarve, Barragem de Bravura, 30.iii.2017, 1♀, det. Cross/Pauly, leg. Cross

***Lasioglossum zonulum* (SMITH, 1848)**

Northern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : PAULY & ORTIZ-SÁNCHEZ 2017: Northern Portugal
Minho, Braga, Fafe, Lagoa, 17.x.1994, 1♂, 1♀; 2.xi.1994, 2♀♀; det. Ebmer, leg. G. Seidler. Coll. Schwarz
Minho, Braga, Fafe, 30.vii.1995, 1♀, det. Ebmer, leg. Walter. Coll. Schwarz
Douro Litoral, Vila do Conde, Malta, 6.ix.2013, 1♂, det. Ebmer, leg. R. Andrade

Genus *Sphecodes* LATREILLE, 1804

24 species. Broodparasites of a wide range of bees from the families Halictidae, Andrenidae and Colletidae. The Central European members of the genus and their host preferences were reviewed by BOGUSCH & STRAKA (2012). Unless otherwise stated, this is the source of the host information listed below. Several species or forms from Southern Europe are in need of revision to determine their true status. Species listed here as subspecies may be elevated to full species status in the near future.

***Sphecodes albilabris* (FABRICIUS, 1793)**

Widespread, scarce, 7 records. Broodparasite of *Colletes cunicularis* and, in Central Europe, *Melitturga clavicornis*. In Portugal *Colletes cunicularis* is known only from central Portugal, so in the western Algarve it is likely to be attacking *Melitturga caudata*, though this is unproven. The host in Serra da Estrela is unknown as neither *Colletes cunicularis* nor *Melitturga caudata* have yet been found there.

M a t e r i a l : DINIZ 1960: Serra da Estrela, Vale do Zêzere
KUHLMANN 1996: Serra da Estrela, Vale do Zêzere, viii.1987; 1♀; Penhas da Saúde, 20-29.vii.1990,
2♂♂, 1♀
Trás-os-Montes, Pardelhas, 11.vi.2017, 1♀, det. & leg. Cross
Douro Litoral, Amarante, Larim, 30.iv.1990, 1♀, det. Straka, leg. F. Guseleinleitner
Algarve, Odeceixe, 26.vii.2010, 1♀; 26.v.2011, 1♀, det. Baldock, leg. A. Livory
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. Baldock, & Wood
Algarve, Carrapateira, 16.v.2016, 1♀, det. & leg. Cross
Algarve, Aljezur, Ponta da Atalaia, 6.v.2017, 1♂, det. & leg. Cross

ssp. *africanus* LEPELETIER, 1841

M a t e r i a l : MÉDINA 1898: Vallongo, 1♀, leg. Reis jnr.

ssp. *rubripes* SPINOLA, 1838

Southern Portugal, rare, 2 records. WARCKE (1992) regarded *Sphecodes africanus* and *Sphecodes rubripes* as synonyms of *Sphecodes albilabris*. However, BOGUSCH & STRAKA (2012) note differences in structure and phenology. This species group requires further taxonomic work. At the Lagos site *Sphecodes rubripes* has been observed at nest burrows of *Eucera nigrilabris* (CROSS 2017).

M a t e r i a l : Algarve, Lagos, Ponta da Piedade, 20.iii.2015, 1♂; 19.ii-2.iii.2016, 4♂♂, 1♀, det. & leg. Cross

***Sphecodes alternatus* SMITH, 1853**

Central and Southern Portugal, frequent, 24 records. Host unconfirmed but likely to be *Halictus* species.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas de Saúde, 3.vi.1989, 3♀♀; 18.vii.1990, 5♂♂, 2♀♀, Torre, 4.viii.1990, 1♂
Beira Baixa, Estremadura, Ribatejo, Baixo Alentejo, Algarve

ssp. *algeriensis* ALFKEN, 1914

Southern Portugal, rare, 4 records. First record for Europe, previously known only from North Africa. Further taxonomic work is needed to clarify if this taxon is distinct from *Sphecodes alternatus* s.s.

M a t e r i a l : Ribatejo, Santarem, 6.vii.1985, 1♀; 11.ix.1985, 1♂, 1♀, both det. Straka. M NHNC, coll. Mendoça

Ribatejo, Montijo, 15.iv.2014, 1♀, det. Straka, leg. M. Jenner
Algarve, Pêra, Salgados, 5.v.2005, 1♀, det. Straka, leg. Smit

***Sphecodes crassanus* WARCKE, 1992**

Central and Southern Portugal, scarce, 10 records. Host(s) unknown but likely to be *Halictus* species.

M a t e r i a l : WARCKE 1992: Quarteira (Algarve)

Estremadura, Pataias, Praia do Ouro, 1♀, 18.v.1996, det. Schwarz, leg. M. Jenner
Estremadura, Nazaré, south dunes, 19.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb
Ribatejo, Santarem, Fatima, 24.vii.1974, 1♀, det. Schwarz. M NHNC, coll. Mendoça
Ribatejo, Golegã, Paul do Boquilobo, 25.iv.2014, 1♀, det. Baldock, leg. M. Jenner
Baixo Alentejo, Zambujeira do Mar, 18.vii.2012, 2♀♀, det. Schwarz, leg. A. Livory & R. Coulomb
Algarve, Aljezur, Ponta da Atalaia, 2.v.2005, 1♀, det. Straka, leg. Smit
Algarve, Odeceixe, 4.vii.2009, 1♀; 25.vii.2010, 1♀, det. Schwarz, leg. A. Livory & R. Coulomb
Algarve, Alvor, Cruzinha, 5.viii.2015, 1♀, det. Wood, leg. J. D'Haeseleer
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 2♀♀, det. Schwarz, leg. Wood

***Sphecodes crassus* THOMSON, 1870**

Central Portugal. Broodparasite of smaller species of *Lasioglossum*.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 20.vii.1990, 1♂

Sphecodes croaticus MEYER, 1922 *

Central Portugal, rare, 1 record. Broodparasite of *Lasioglossum interruptum*.

M a t e r i a l : Estremadura, Torres Vedras, 13.v.2013, 1♀, det. Schwarz, leg. C. Reis

Sphecodes ephippius (LINNAEUS, 1767)

Widespread, scarce, 9 records. Many recorded *Lasioglossum*, *Halictus* and *Andrena* host species.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 27.ix.1990, 1♂
Trás-os-Montes, Serra do Montesinho, Alto Falgueirão, 30.vi.2016, 2♀♀, det. & leg. Wood
Douro Litoral, Porto, Campo, Valongo, 26.iv.2016, 1♀, det. Straka, leg. R. Andrade
Beira Alta, Manteigas, Rota da Carvão, 26.viii.2015, 1♂, det. Straka, leg. A. Livory & R. Coulomb
Algarve, Carrapateira dunes, 2.x.2014, 1♀; 7/14.iii.2015, 2♀♀, all det. Bogusch, leg. Cross
Algarve, Lagos, town walls, 9.iii.2015, 1♀, det. Bogusch, leg. Cross
Algarve, Lagos, Ponta da Piedade, 2.iii.2016, 1♀, det. Bogusch, leg. Cross
Algarve, Boca do Rio, 9.iv.2016, 1♀, det. Bogusch, leg. Cross

Sphecodes ferruginatus HAGENS, 1882

Central and Northern Portugal, rare, 1 record. *Lasioglossum fulvicorne* is the only confirmed host but as this species is not yet found in Portugal perhaps other species are used.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Nave de Santo António, 21.vii.1990, 1♂, 1♀
Trás-os-Montes, Serra do Montesinho, Alto Falgueirão, 30.vi.2016, 1♀, det. Straka, leg. Wood

Sphecodes geoffrellus (KIRBY, 1802)

Central Portugal. Many recorded *Lasioglossum* host species.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Torre, 4.viii.1990, 2♂♂

Sphecodes gibbus (LINNAEUS, 1758)

Widespread, scarce, 6 records. Broodparasite of medium to larger species of *Halictus*.

M a t e r i a l : SAUNDERS 1881: Serra da Estrela, Seia, 8.vi.1880, 1♀, leg. A.E. Eaton
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 7.vi.1989, 1♀; 20.vii.1990, 2♂♂, 1♀
Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Serra do Montesinho, Alto Falgueirão, 30.vi.2016, 1♀, det. Straka, leg. Wood
Trás-os-Montes, Serra do Montesinho, Porto do Sabor, 4.vii.2016, 2♀♀, det. & leg. Wood
Trás-os-Montes, Vila Real, Pardelhas, 11.vi.2017, 1♀, det. Straka, leg. Cross
Ribatejo, Santarem, Dornes, 20.vi.2009, 1♀, det. Straka, leg. F. Pennikamp & P. Pereira, MNHNC
Algarve, Monchique, 29.vii.2010, 1♂, det. Schwarz, leg. A. Livory

Sphecodes hirtellus BLÜTHGEN, 1923 *

Iberia and North Africa. Widespread, scarce, 10 records. Host(s) unknown.

M a t e r i a l : Minho, Braga, Ofir, 28.vii.2001, 1♀, det. Straka, leg. C. Schmid-Egger
Estremadura, Sobreda, 25.vi-12.vii.1985, 1♀, leg. Cölln, Risch, Sorg
Estremadura, Nazaré, north dunes, 18.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb
Baixo Alentejo, Zambujeira do Mar, 17.vii.2012, 1♀, all det. Schwarz, leg. A. Livory cf.
Algarve, Carrapateira, 8.vii.2009, 1♀, det. Schwarz, leg. A. Livory

Algarve, Tavira, 1.vi.2011, 2♂♂, 2♀♀, det. Schwarz, leg. A. Livory
Algarve, Odeceixe, 26.v.2011, 1♂, det. Schwarz, leg. A. Livory
Algarve, Sagres, Castelojo, 11.x.2010, 1♀, det. Schwarz, leg. Baldock
Algarve, Salema, Boca do Rio, 7.iv.2015, 2♀♀, det. Wood/Baldock, leg. Wood; 11.vi.2016, 3♂♂, det. & leg. Cross

***Sphecodes longuloides* BLÜTHGEN, 1923**

Iberia, North Africa and Arabia. Central and Southern Portugal, rare, 2 records. Host(s) unknown.

M a t e r i a l : WARCKE 1992: Évora
Estremadura, São Martinho do Porto, south dunes, 21.viii.2015, 1♂, det. Straka, leg. A. Livory & R. Coulomb
Algarve, Tôr, 10.iv.2009, 1♀, det. Straka, leg. F. Pennikamp & P. Pereira. MNHNC

***Sphecodes longulus* HAGENS, 1882 ***

Widespread, rare, 4 records. Broodparasite of small species of *Lasioglossum* such as *Lasioglossum minutissimum*.

M a t e r i a l : Trás-os-Montes, Serra do Montesinho, Porto do Sabor, 4.vii.2016, 1♀, det. Straka, leg. Wood
Estremadura, Sobreda, 24.v-5.ix.1985, 7♂♂, 1♀, leg. Cölln, Risch, Sorg
Algarve, Carrapateira, 5.vi.2016, 1♂, det. & leg. Cross
Algarve, Faro airport, 6.iv.2017, 1♀, det. & leg. Cross

***Sphecodes marginatus* HAGENS, 1882**

Widespread, scarce, 7 records. Host(s) unconfirmed but likely to be small *Lasioglossum* species.

M a t e r i a l : DINIZ 1959: Aldeia Nova de São Bento, Almendras, Mitra, Serra do Montemuro
KUHLMANN 1996: Serra da Estrela, Vale de Candieira, 2.viii.1990, 5♂♂; Penhas da Saúde, 20.vii.1990, 3♂♂, 1♀; Torre, 4.viii.1990, 4♂♂
Minho, Guimarães, 7.v.1990, 1♀, det. Straka, leg. A. Roth
Trás-os-Montes, Serra do Montesinho, Alto do Falgueirão, 30.vi.2016, 3♀♀, det. Straka, leg. Wood
Douro Litoral, Porto, Padronello, 29.iv.1990, 6♀♀, det. Straka, leg. F. Gusenleitner
Douro Litoral, Amarante, Larim, 30.iv.1990, 1♀, det. Straka, leg. F. Gusenleitner
Estremadura, Sobreda, 25.vi-12.vii.1985, 1♂, leg. Cölln, Risch, Sorg
Baixo Alentejo, Milfontes, Odemira, 28.v.1987, 1♂, det. Schwarz, leg. H. Tussac
Algarve, Aljezur, Vale da Telha, 6.v.2017, 1♀, det. Straka, leg. Cross

***Sphecodes monilicornis* (KIRBY, 1802)**

Widespread, common, 32 records. Many recorded *Lasioglossum* and *Halictus* hosts. There is one confirmed host record for Portugal; *Lasioglossum malachurum*, Algarve, Pêra, Praia Grande, 11.vi.2016.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Vale do Zêzere, viii.1987, 1♀; Vale de Candieira 2.viii.1990, 1♀; Penhas da Saúde, 20.vii.1990, 6♂♂, 5♀♀
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Estremadura, Baixo Alentejo, Algarve

***Sphecodes olivieri* LEPELETIER, 1825**

Southern Portugal, scarce, 8 records. Host(s) unknown.

M a t e r i a l : WARNCKE 1992: Alcoutim
 Alto Alentejo, Évora, 26.ix.2014, 1♀, det. Bogusch, leg. A. Livory & R. Coulomb
 Baixo Alentejo, Serpa, 29.ix.2014, 1♀, det. & leg. A. Livory & R. Coulomb
 Algarve, Tavira, Cabanas, 23-25.v.2012, 1♀; 24.vii.2012, 1♀, det. & leg. A. Livory & R. Coulomb
 Algarve, Salema, Boca do Rio, 29.vii.-20.viii.2015, 1♂, 2♀, det. & leg. Cross
 Algarve, Carrapateira, 15.x.2015, 1♂, det. Straka; 14.ix.2016, 1♀, det. & leg. Baldock; 19.ix.2016, 1♀, det. & leg. Cross

***Sphecodes pellucidus* SMITH, 1845**

Southern Portugal, rare, 1 record. Considered the strict broodparasite of *Andrena barbilabris* (BOGUSCH & STRAKA 2012) but this species is not known from Portugal. Highly likely to be using the closely related *Andrena (Leucandrena) leptopyga* which is known from Carrapateira, near to the area of the most recent *Sphecodes pellucidus* capture.

M a t e r i a l : SAUNDERS 1881: (as *Sphecodes pilifrons* THOMSON) Algarve, Silves, 15.v.1880
 Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. Schwarz, leg. Wood

***Sphecodes pseudofasciatus* BLÜTHGEN, 1925 ***

Widespread, rare, 4 records. Host(s) unknown.

M a t e r i a l : Trás-os-Montes, Alfandega da Fe, 1.vi.2014, 1♀, det. Bogusch, leg. Penado
 Estremadura, Lisboa, Sobreda, 24.v-12.vii.1985, 12♂♂, 1♀, leg. Cölln, Risch, Sorg
 Algarve, Lagos, 2.vi.1987, 1♂, det. Schwarz, leg. H. Tussac
 Algarve, Salema, Boca do Rio, 4.iv.2015, 1♀, det. Bogusch, leg. Wood

***Sphecodes puncticeps* THOMSON, 1870**

Widespread, common, 33 records. Broodparasite of *Lasioglossum villosulum*.

M a t e r i a l : WARNCKE 1992: Monte Gordo
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 3-4.vi.1985, 3♀♀
 Minho, Trás-os-Montes, Douro Litoral, Beira Baixa, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Sphecodes reticulatus* THOMSON, 1870**

Widespread, rare, 5 records. Hosts unclear but likely to include *Lasioglossum prasinum*.

M a t e r i a l : DUSMET 1921: Porto, 1♀
 KUHLMANN 1996: Serra da Estrela, viii.1987, 1♀; 31.vii.1990, 1♀
 Estremadura, Sesimbra, 14.vii.2012, 1♀, det. Schwarz, leg. A. Livory & R. Coulomb
 Algarve, Carrapateira, 9.vi.2015, 2♂♂; 16.ix.2016, 1♀, det. & leg. Cross
 Algarve, Lagos, Praia de São Roque, 4.iii.2015, 1♀, det. & leg. Cross
 Algarve, Pêra, Praia Grande, 23.vi.2015, 1♂, det. & leg. Cross

***Sphecodes rubicundus* HAGENS, 1875 ***

Widespread, scarce, 7 records. Broodparasite of *Andrena labialis*.

M a t e r i a l : Minho, Gilmonde, Barcelos, 19.iv.2015, 1♀, det. Straka, leg. R. Andrade
 Douro Litoral, Mindelo, Vila do Conde, 23.iii.2016, 1♀, det. Straka, leg. R. Andrade
 Ribatejo, Golegã, Paul do Boquilobo, 25.iv.2014, 1♀, det. Straka, leg. M. Jenner
 Baixo Alentejo, Vila Nova de Milfontes, Odemira, 28.v.1987, 2♂♂, det. Schwarz, leg. H. Tussac
 Baixo Alentejo, Baiona, Odeciexe, 28.iii.2015, 1♀, det. & leg. Cross
 Algarve, Fóia, near Monchique, 21.vi.1988, 1♀, det. Straka, leg. J.W. Ismay
 Algarve, Salema, Boca do Rio, 4.iv.2015, 1♀, det. Straka, leg. Wood

***Sphecodes ruficrus* (ERICHSON, 1835)**

Widespread, scarce, 14 records. Broodparasite of *Andrena (Chlorandrena)* species.

- M a t e r i a l : MÉDINA 1898: (as *Sphecodes hispanicus* WESMAEL) São Mamede, 1♀, leg. A. Nobre
Estremadura, Cabo Espichel, 15.vii.2012, 3♂♂, det. Schwarz, leg. A. Livory
Estremadura, Mafra, 15.v.2013, 1♀, det. Schwarz, leg. C. Reis
Ribatejo, Montijo, 1.v.2014, 1♀, det. Baldock, leg. M. Jenner
Algarve, Guia, 4.v.2002, 2♀♀; 2.v.2008, 1♀, det. Schwarz, leg. Baldock
Algarve, Alvor, 30.iv.2005, 1♀, det. Straka, leg. Smit
Algarve, Aljezur, Odeceixe, 26.v.2011, 1♀, det. Schwarz, leg. A. Livory
Algarve, Silves, 20.iv.2012, 1♀, det. Schwarz, leg. Baldock
Algarve, Monchique, 17.iv.2014, 1♀, det. & leg. E. Dufrêne
Algarve, Mexilhoeira Grande, 28.iii.2015, 1♀, det. Straka, leg. J. D'Haeseler
Algarve, Pêra, Praia Grande, 30.iii.2015, 3♂♂, det. & leg. Cross
Algarve, Aljezur, W of Vale da Telha, 1-9.v.2016, 1♀, det. Schwarz, leg. Wood
Algarve, Quinta da Rocha, 1♂, 1♀, 29.iii.2017, det. & leg. Cross
Algarve, Burgau, Barrancão, 1.iv.2017, 2♂♂, det. & leg. Cross
Algarve, Praia da Castelejo, 12.iv.2017, 1♀, det. & leg. Cross

***Sphecodes rufiventris* (PANZER, 1798)**

Central and Northern Portugal, rare, 1 record. Broodparasite of *Halictus maculatus*.

- M a t e r i a l : DUSMET 1921: Buçaco
Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 1♀, det. Straka, leg. Wood

***Sphecodes scabricollis* WESMAEL, 1865 ***

Central Portugal, rare, 1 record. Broodparasite of *Lasioglossum zonulum*.

- M a t e r i a l : Beira Litoral, Estarreja, Canelas, 20.vii.2015, 1♀, det. Straka, leg. R. Andrade

***Sphecodes spinulosus* (HAGENS, 1875) ***

Southern and Northern Portugal, rare, 2 records. Broodparasite of *Lasioglossum xanthopus*.

- M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 21.iv.2014, 1♀, det. Straka, leg. A. Penado
Algarve, Salema, 15.iv.2014, 1♂, det. & leg. E. Dufrêne

MELITTIDAE

DASYPODAINAE

Genus *Dasypoda* LATREILLE, 1802

9 species. *Dasypoda* pollen preferences were reviewed by MICHEZ et al. (2004).

***Dasypoda albimana* PÉREZ, 1905 ***

West-Mediterranean. Southern Portugal, rare, 3 records. Polylectic.

- M a t e r i a l : Algarve, Guia, 28.iv.2004, 2♀♀, det. Michez, leg. Baldock
Algarve, Aljezur, Odeceixe, 26.v.2011, 1♀, det. Michez, leg. A. Livory & R. Coulomb
Algarve, Almograve, 21.v.2012, 1♂, det. Michez, leg. A. Livory & R. Coulomb

***Dasypoda cingulata* ERICHSON, 1835**

Widespread, frequent, 24 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: Coimbra-Santo António, 3.vi.1880, 4♂♂, leg. A.E. Eaton
WARNCKE 1973: Serra da Estrela, Val Barca 1650 m; Aregos; 20 km S of Lisboa
ORNOSA & ORTIZ-SÁNCHEZ 1998: Porto, 14.vii.1954, 1♀, det. Warncke, leg. N.F. d'Andrade; Setúbal,
Seixal, 1.v.1955, 1♂, det. Warncke, leg. N.F. d'Andrade
Minho, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Dasypoda crassicornis* FRIESE, 1896**

Iberia, France and Morocco. Widespread, scarce, 9 records. Polylectic.

M a t e r i a l : FRIESE 1896: Algarve, Faro, Monchique
DINIZ 1960: Coimbra
ORNOSA & ORTIZ-SÁNCHEZ 1998: Setúbal, Caparica, 13.v.1936, 1♂; Praia das Maçãs, 17.v.1953, 1♀,
leg. N.F. d'Andrade, det. Warncke
Trás-os-Montes, Bragança, Alfândega da Fé, 16-20.iv.2014, 2♀♀, det. Wood, leg. Penado
Beira Litoral, São Pedro de Moel, 14.iv.1997, 1♀, det. Michez, leg. M. Jenner
Estremadura, Sesimbra, 21.v.1971, 1♂, det. Baldock. MNHNC, coll. Mendoça
Estremadura, Praia da Vieira, 24.iv.1997, 2♂♂, 1♀, det. Michez, leg. M. Jenner
Estremadura, Pataias, Praia do Ouro, 5.v.1996, 1♀, det. Michez, leg. M. Jenner
Baixo Alentejo, Vila Nova de Milfontes, Odemira, 20.v.2012, 1♂, 2♀♀, det. Michez, leg. A. Livory & R.
Coulomb
Algarve, Faro airport, 8.iii.2015, 1♀, det. & leg. Cross
Algarve, Budens, 19.iv.2016, 1♂, det. & leg. Cross
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. & leg. Wood

***Dasypoda dusmeti* QUILIS, 1928**

West-Mediterranean. Widespread, common, 41 records. Oligolectic on Asteraceae.

M a t e r i a l : DUSMET 1931: Mata de Leiria, 24.v.1928, 1♂; Lagos
Minho, Beira Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Dasypoda hirtipes* (FABRICIUS, 1793)**

Widespread, scarce, 14 records. Oligolectic on Asteraceae.

M a t e r i a l : DINIZ 1960: Coimbra
Minho, Braga, Fafe, Lagoa, 1994/1995, 78♂♂, 20♀♀, leg. G. Seidler
Minho, Gilmonde, Barcelos, 15.viii.2007, 1♂; 22.vii.2008, 1♀; 4.vii.2014, 1♂, all det. Wood, phot. R.
Andrade
Trás-os-Montes, Bragança, Fontes, 1.vii.2016, 1♂, det. & leg. Wood
Douro Litoral, Malta, 6.ix.2013, 1♀, det. Baldock, leg. R. Andrade
Douro Litoral, Amarante, Chapa, 9.ix.2016, 1♂, 1♀, det. & leg. Cross
Beira Alta, Tarouca, Gouviães 600m, 2-5.viii.2008, 1♀, det. Michez, leg. P. Le Homme
Beira Alta, Manteigas, Vale do Zézere, 25.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb
Beira Alta, Manteigas, Rota do Sol, 27.viii.2015, 3♀♀, det. & leg. A. Livory & R. Coulomb
Algarve, Aljezur, Odeceixe, 26.vii.2010, 1♂, det. Baldock, leg. A. Livory
Algarve, Carrapateira, 17.ix.2015, 1♂, det. & leg. Wood; 14.ix.2016, 1♂, 3♀♀, det. & leg. Cross and
Baldock; 19.x.2016, 1♀, det. & leg. Cross

***Dasypoda morotei* QUILIS, 1928**

Iberian endemic. Widespread, scarce, 8 records. Oligolectic on Cistaceae.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 1998: Viseu, Rezende, 12-13.vii.1954, 1♂, 1♀, det. Warncke, leg. N.F. d'Andrade
Estremadura, Torres Vedras, 16.v.2013, 1♂, det. Baldock, leg. C. Reis
Ribatejo, Coruche, Couço, iv-v.2013, 3♂♂, 4♀♀, det. Baldock, conf'd. Michez, leg. A. Albernaz Valente
Alto Alentejo, Mora, 6♂♂, 6♀♀, May 2013, all det. Baldock, conf'd. Michez, leg. A. Albernaz Valente
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♂, 1♀, det. & leg. Wood
Algarve, Marmelete, 9.v.2016, 2♂♂, det. & leg. Wood; 18.iv.2017, 1♂, det. & leg. Cross
Algarve, Amoreira, 24.iv-3.v.2016, 2♂♂, det. & leg. Cross

[*Dasypoda pyriformis* RADOSZKOWSKI, 1887]

DINIZ 1960: Lagos. Misidentification, known only from Greece and Turkey]

***Dasypoda pyrotrichia* FÖRSTER, 1855 ssp. *eatoni* SAUNDERS, 1881**

Iberian and Pyrenean subspecies. Northern Portugal. Oligolectic on Cistaceae.

M a t e r i a l : SAUNDERS 1881: (as *Dasypoda eatoni* spp. nov.) Trás-os-Montes, westward of Vila Real at an elevation of 1780 feet, 24.vi.1880, 1♂, leg. A.E. Eaton
ORNOSA & ORTIZ-SÁNCHEZ 1998: Alto Douro

***Dasypoda michezi* RADCHENKO, 2017**

Portuguese endemic. Southern Portugal. Pollen preferences unknown.

M a t e r i a l : RADCHENKO 2017: Baixo Alentejo, Vila Nova de Milfontes, 20.v.2012, 1♂, leg. A. Livory & R. Coulomb, Paratype
Baixo Alentejo, Almograve, 21.v.2012, 1♂, leg. A. Livory & R. Coulomb, Holotype

***Dasypoda visnaga* (ROSSI, 1790)**

Central and Southern Portugal, scarce, 13 records. Oligolectic on Asteraceae.

M a t e r i a l : DINIZ 1960: Vila Real de Santo António
ORNOSA & ORTIZ-SÁNCHEZ 1998: Baixo Alentejo, Sardão, 2♂♂, leg. Dusmet, coll. Dusmet (MCN)
Estremadura, Caparica, 23.vi.1964, 1♀, det. Baldock. MNHNC, coll. Mendoça
Estremadura, Cabo Espichel, 4.vi.2011, 2♂♂, det. Baldock, leg. A. Livory & R. Coulomb
Baixo Alentejo, Sines, 12.vi.1970, 1♀; 16.vi.1970, 1♂, det. Baldock. MNHNC, coll. Mendoça
Baixo Alentejo, Vila Nova de Milfontes, 4.vii.1971, 1♂, 1♀, det. Baldock. MNHNC, coll. Mendoça
Algarve, Odeceixe nr Aljezur 4.vii.2009, 2♂♂, 1♀; 23.vii.2011, 1♂, 1♀, det. Michez, leg. A. Livory & R. Coulomb
Algarve, Tavira, 1.vi.2011, 3♂♂, 1♀, det. Baldock, leg. A. Livory & R. Coulomb
Algarve, Vila Real de Santo António, 24.v.2012, 2♀♀, det. Baldock, leg. A. Livory & R. Coulomb
Algarve, Guia, 22.v.2014, 2♂♂, det. & leg. Baldock
Algarve, Carrapateira, 8.vi.2015, 1♂, 1♀; 5.vi.2016, 1♂, det. & leg. Cross
Algarve, Pêra, Praia Grande, 30.v.2017, field, det. & leg. Cross

MELITTINAE

Genus *Macropis* PANZER, 1809

1 species. Pollen preference data for Melittinae is from Central Europe and Spain (WESTRICH 1989; 2011).

***Macropis europaea* WARNCKE, 1973**

Central Portugal, rare, 4 records. Narrowly oligoleptic on *Lysimachia*.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 1998: Coimbra, vii, 1♀, det. Warncke
Beira Litoral, Coimbra, Estarreja, 17.vi.2010, 4♀♀, phot. R. Andrade, det. Baldock
Beira Litoral, Aveiro, Estarreja, Canelas, 10.vii.2014, 1♂; 20.vii.2015, 1♀; 18.vii.2016, 1♀, all det.
Baldock, leg. R. Andrade

Genus *Melitta* KIRBY, 1802

3 species.

***Melitta leporina* (PANZER, 1799)**

Northern Portugal. Oligoleptic on Fabaceae.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 1998: Porto, Vila do Conde, 24.vii.1968, 2♂♂, det.
Warncke, leg. M.A. Diniz

***Melitta nigricans* ALFKEN, 1905**

Central and Northern Portugal, rare, 1 record. Narrowly oligoleptic on *Lythrum*.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 1998: Coimbra, vi, 1♀, det. Warncke
Minho, Viana do Castelo, Ponte de Lima, 30.vii.2001, 4♂♂, 11♀, det. & leg. C. Schmid-Egger

***Melitta tricincta* KIRBY, 1802**

Central Portugal. Narrowly oligoleptic on *Odontites*.

M a t e r i a l : ORNOSA & ORTIZ-SÁNCHEZ 1998: Coimbra, June, 1♂, det. Warncke

MEGACHILIDAE

LITHURGINI

Genus *Lithurgus* BERTHOLD, 1827

3 species.

***Lithurgus chrysurus* FONSCOLOMBE, 1843**

Central and Northern Portugal, rare, 2 records. Oligoleptic on Asteraceae (RUST et al. 2004).

M a t e r i a l : ORNOSA, ORTIZ-SÁNCHEZ & TORRES 2007: Portugal
Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♀, det. & leg. Wood
Beira Alta, Viseu, Armamar, 1.viii. 2001, 1♂, det. & leg. C. Schmid-Egger

***Lithurgus cornutus* (FABRICIUS, 1787)**

Central Portugal. Pollen preferences unknown.

M a t e r i a l : DINIZ 1989: 3♂♂, 15♀♀, Coimbra, Lamego, Viseu

***Lithurgus tibialis* MORAWITZ, 1875**

Southern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : DINIZ 1989: 1♂, 3♀♀, Algarve, Castro Marim; Monte Gordo
Algarve, Silves, 2.viii.1983, 1♂, det. & leg. S.F. Gayubo

OSMIINI

Genus *Chelostoma* LATREILLE, 1809

7 species. Pollen preferences in world *Chelostoma* were reviewed by SEDIVY et al. (2008).

***Chelostoma campanularum* (KIRBY, 1802)**

Widespread, scarce, 10 records. Oligoleptic on Campanulaceae.

M a t e r i a l : SAUNDERS 1881: Coimbra-Santo António, 3.vi.1880, 1♂
DINIZ 1989: Aveiro; Sintra; Viseu; Vouzela

TORRES, ORNOSA & ORTIZ-SÁNCHEZ 2012: Serra da Estrela: Covão da Ametade, 24.vii.1987, 2♂♂;
Cabeça, 25.vii.1987, 1♂, both leg. Torres; PN do Douro Internacional: Mazouco, 2001, 2♂♂, 5♀♀,
Fonte de Aldeia, 2001, 6♂♂, 10♀♀, Bemposta, 2001, 1♀, Lamoso, 2001, 1♀, Algozinho, 2001, 1♀,
To, 2001, 3♀♀, Figois, 4♀♀, all leg. N.G. Oliveira
Minho, Braga, Fafe, San Jorge, 22.v.1991, 1♂, det. Müller, leg. Schwarz
Trás-os-Montes, Bragança, Alfândega da Fé, 28.v-25.vi.2015, 1♂, 1♀, det. Wood, leg. Penado
Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♂, det. & leg. Wood
Trás-os-Montes, Portelo-Montesinho road, 30.vi.2016, 1♂, det. & leg. Wood
Douro Litoral, Chapa, 18.vi.2016, 2♂♂, 1♀, det. & leg. Cross
Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 1♂, 1♀, det. Le Goff, leg. A. Ivory & R. Coulomb
Estremadura, Sobreda, 5.v-12.vii.1985, 1♂, 7♀♀, det. D. Peters, leg. Cölln, Risch, Sorg
Baixo Alentejo, Odemira, 30.iv.2002, 1♂, det. Müller, leg. J. Kadlec
Baixo Alentejo, Mértola, 15 km S, 17.iv.2017, 1♀, det. Baldock
Algarve, Carrapateira, 8.vi.2016, 2♀♀, det. & leg. Cross

***Chelostoma distinctum* (STÖCKHERT, 1929) ***

Central Portugal, rare, 1 records. Oligoleptic on Campanulaceae.

M a t e r i a l : Beira Alta, Serra da Estrela, 16.vii.2009, 1♀, det. Müller, leg. V. Bartak, coll. Schwarz

***Chelostoma edentulum* PÉREZ, 1895**

Iberia and north-west Africa. Southern Portugal, scarce, 12 records. Oligoleptic on Brassicaceae.

M a t e r i a l : ORTIZ-SÁNCHEZ, ORNOSA & TORRES 2008: Vila Verde de Ficalho, Serpa, 15.iv.2006,
1♀
Baixo Alentejo, São Sebastião dos Carros, 4.iv.2017, 1♀, det. & leg. Cross
Algarve, Conceição de Tavira, 17.v.1954, 1♀, det. Müller, RNHL
Algarve, Cerco Velha, 23.v.1978, 1♂, det. Müller, leg. J. Teunissen
Algarve, São Brás de Alportel, 6-18.iv.1983, 1♂, 1♀, det. Müller, leg. J. Teunissen
Algarve, Guia, 20.iv.2005, 1♀, det. Ortiz-Sánchez; 27.iv.2008, 1♂, 1♀; 2.v.2008, 1♂, 1♀; 12.iii.2009, 1♂,
det. & leg. Baldock
Algarve, Silves, 20.iv.2012, 1♂, det. & leg. Baldock
Algarve, Cacela Velha, 200m E, 27.iv.2016, 1♂, det. & leg. Wood
Algarve, Monte Gordo, dunes W of, 23.iv.2016, 1♂, det. & leg. Wood

Algarve, Tavira, Sinagoga, 25.iv.2016, 1♂, 2♀♀, det. & leg. Wood
Algarve, Pêra, Praia Grande, 13/18.v.2016, 2♀♀, det. & leg. Cross

***Chelostoma emarginatum* (NYLANDER, 1856)**

Widespread, scarce, 4 records. Oligolectic on Ranunculaceae.

M a t e r i a l : DINIZ 1989: Coimbra; Figueira da Foz; Montemor-o-Velho; Serra da Estrela
Trás-os-Montes, Bragança, Alfândega da Fé, 20.iv-23.v.2015, 1♂, 1♀, det. Wood, leg. Penado
Baixo Alentejo, Mértola, 2.vi.2016, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, 23-25.v.2012, 1♀, det. Baldock, leg. A. Livory & R. Coulomb
Algarve, Tavira, Cabanas, 31.v.2016, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb

***Chelostoma florisomne* (LINNAEUS, 1758)**

Widespread, scarce, 2 records. Oligolectic on Ranunculaceae.

M a t e r i a l : DINIZ 1989: Aveiro; Coimbra; Leça da Palmeira; Lousã
Trás-os-Montes, Bragança, Alfândega da Fé, 19-20.iv.2015, 2♀♀, det. Wood, leg. Penado
Algarve, Rasmalho, 31.iii.2015, 1♂, det. & leg. Cross
Algarve, Budens, Monte da Sinceira, 2.v.2016, 1♀, det. & leg. Cross

***Chelostoma foveolatum* (MORAWITZ, 1868)**

Central and Northern Portugal, rare, 1 record. Oligolectic on Campanulaceae.

M a t e r i a l : DINIZ 1989: Aveiro; Coimbra; Gouveia, Serra da Estrela
Trás-os-Montes, Bragança, Fontes, 1.vii.2016, 1♀, det. & leg. Wood

***Chelostoma rapunculi* (LEPELETIER, 1841)**

Widespread, scarce, 19 records. Oligolectic on Campanulaceae.

M a t e r i a l : DINIZ 1989: Amarante; Angeiras; Coimbra; Leça da Palmeira; Oliveira do Bairro
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Baixo Alentejo, Algarve

Genus *Heriades* SPINOLA, 1808

3 species. Pollen preferences in West Palearctic *Heriades* are reviewed by MÜLLER (2017).

***Heriades crenulata* NYLANDER, 1856**

Widespread, frequent, 33 records. Oligolectic on Asteraceae.

M a t e r i a l : DUSMET 1921: Estremoz, 1♂
DUSMET 1931: Coimbra, 2♀♀
DINIZ 1959: Serra do Montemuro
DINIZ 1989: Aljustrel; Castelo Branco; Lisboa; Mitra; Seixal; Sines; Tabuaço; Vila Real de Santo António
Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo
Alentejo, Algarve

***Heriades rubicola* PÉREZ, 1890**

Widespread, common, 41 records. Oligolectic on Asteraceae.

M a t e r i a l : DINIZ 1989: Amarante; Aveiro; Coimbra; Elvas; Salir; Tabuaço
Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo,
Algarve

***Heriades truncorum* (LINNAEUS, 1758)**

Widespread, scarce, 2 records. Oligoleptic on Asteraceae.

M a t e r i a l : DINIZ 1960: Portugal

DINIZ 1989: Angeiras; Coimbra; Felgueiras; Oliveira do Bairro; Penela; Sines; Sintra; Tabuaço; Viseu Estremadura, Sobreira, 1.viii-20.xi.1985, 2♀♀, det. D. Peters, leg. Cölln, Risch, Sorg Algarve, Silves, 19.vii.2014, 1♂, det. & leg. Baldock

***Genus Hoplitis* KLUG, 1807**

27 species. Pollen preferences in West Palearctic *Hoplitis* are reviewed by MÜLLER (2017).

***Hoplitis acuticornis* (DUFOUR & PERRIS, 1840) ssp. *hispanica* (SCHMIEDEKNECHT, 1886)**

Iberian endemic subspecies. Southern and Northern Portugal, rare, 5 records. Oligoleptic on Fabaceae.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 19-26.v.2014, 3♀♀, det. Le Goff, leg. Penado

Algarve, Castelejo, 2.iv.1997, 1♂, det. Müller, leg. P. Hartmann

Algarve, Amoreira 11.iv.2015, 1♂, det. Le Goff, leg. Cross

Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 1♀, det. & leg. Wood

Algarve, Cerro do Santo Miguel, 28.iv.2016, 1♀, det. Le Goff, leg. Wood

***Hoplitis adunca* (PANZER, 1798)**

Widespread, common, 52 records. Narrowly oligoleptic on *Echium*.

M a t e r i a l : SAUNDERS 1881: Silves-Monchique, 18.v.1880, 1♂, leg. A.E. Eaton

DUSMET 1931: Álamo; Aldeia Nova de São Bento; Coimbra; Mitra, 1♂, 5♀♀

DINIZ 1959: Lagoa de Santo André

KUHLMANN 1996: Serra da Estrela, Manteigas, 26.vii.1990, 2♀♀, det. Warncke

Minho, Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Hoplitis albiscopa* (FRIESE, 1899) ***

Iberia and north-west Africa. Southern Portugal, rare, 3 records. Polyleptic.

M a t e r i a l : Baixo Alentejo, Castro Verde, A-Do-Neves, 2♀♀, det. Müller, leg. R. Prosi

Algarve, Odemouca, 11.v.1995, 1♂, 1♀, det. Müller, leg. J. Gusenleitner

Algarve, MARTINhal, 15.v.1995, 1♀, det. Müller, leg. J. Gusenleitner

***Hoplitis annulata* (LATREILLE, 1811)**

Widespread, common, 35 records. Narrowly oligoleptic on *Echium*.

M a t e r i a l : DUSMET 1931: Coimbra, 1♂

DINIZ 1959: Álamo; Mitra (as *Hoplitis crenulata* MORAWITZ)

Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Hoplitis anthocopoides* (SCHENCK, 1853) ***

Southern Portugal, scarce, 11 records. Narrowly oligoleptic on *Echium*.

M a t e r i a l : Alto Alentejo, Montemor-o-Novo, 24.vi.2012, 1♂, det. Le Goff, leg. A. Albernaz Valente
 Baixo Alentejo, Castro Verde, 17.v.2004, 2♀♀, det. Müller, leg. R. Prosi
 Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 2♂♂, det. F. Torres, leg. Baldock
 Algarve, Carrapateira, 14.v.1995, 1♀, det. Müller, leg. J. Guseleinertner
 Algarve, Salema, 31.iii.1997, 1♂, leg. P. Hartmann
 Algarve, Vale de Lobos, 16.vi.2002, 1♀, det. Müller, leg. W. Kerschbaum
 Algarve, Silves, 5.v.2005, 1♀, leg. Smit
 Algarve, Silves, 20.iv.2012, 1♂, det. & leg. Baldock
 Algarve, Portimão, Figueira, 6.iv.2015, 1♂, det. Le Goff, leg. Wood
 Algarve, Lagos, 9.iii.2015, 1♂, det. & leg. Cross
 Algarve, Messines, Vale Fuzeiros, 13.iii.2015, 1♂, 1♀, det. & leg. Cross

***Hoplitis antigae* (PÉREZ, 1895) ***

West-Mediterranean. Widespread, scarce, 12 records. Polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 16.v-27.vi.2014, 23♀♀, det. Le Goff; viii.2015, 13♀♀
 22.vi.2016, 4♀♀, det. Wood, all leg. Penado
 Estremadura, Corroios, 6.vi.2016, 1♀; 4.vii.2016, 1♀, det. Wood, leg. Penado
 Alto Alentejo, Montemor-o-Novo, 5-25.vi.2012, 4♀♀, det. Le Goff, leg. A. Albernaz Valente
 Baixo Alentejo, Castro Verde, Sinceira Grande, 26.v.2005, det. Müller, leg. R. Prosi
 Algarve, Guia, 28.iv.2004, 1♀; 2.v.2008, 1♂, both det. Le Goff, leg. Baldock
 Algarve, Albufeira, 18.iv.2014, 2♂♂, 1♀, det. & leg. Le Goff
 Algarve, Tavira, Forte do Rato, 22.iv.2016, 2♀♀, det. & leg. Wood
 Algarve, Cacela Velha, 27.iv.2016, 2♀♀, det. Le Goff, leg. Wood

***Hoplitis batyamae* (ZANDEN, 1986)**

Portugal, North Africa and the Middle East. Southern Portugal. Only European record. Polylectic.

M a t e r i a l : ZANDEN 1998: Algarve, Quarteira S.L., 18.vi.1978, 2♀♀, leg. K.M. Guichard, BMNH

***Hoplitis benoisti* (ALFKEN, 1935) ***

Widespread, common, 51 records. Narrowly oligolectic on *Echium*.

M a t e r i a l : Estremadura, Sobreira, 12.iv-25.v.1985, 2♀♀, det. D. Peters, leg. Cölln, Risch, Sorg
 Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Hoplitis bisulca* (GERSTÄCKER, 1869) ***

Central and Southern Portugal, frequent, 41 records. Oligolectic on Dipsacaceae.

M a t e r i a l : Algarve, Lagos, 2.vi.1987, 1♂, det. Le Goff, leg. H. Tussac
 Estremadura, Baixo Alentejo, Algarve

***Hoplitis brachypogon* (PÉREZ, 1879)**

Widespread, scarce, 4 records. Probably mesolectic on Fabaceae, Lamiaceae and Antirrhineae.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500 m, 23.vii.1990, 1♀, det. Warncke

Trás-os-Montes, Bragança, Alfândega da Fé, 20.vi.2014, 1♀, det. Baldock, leg. Penado
 Algarve, Guadalupe, 7.iv.1997, 1♀, det. Müller, leg. P. Hartmann

Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 2♂♂, det. Le Goff, leg. Wood
Algarve, Pêra, Praia Grande, 13.v.2016, 1♀, det. Wood, leg. Cross

***Hoplitis cadiza* (WARNCKE, 1991) ***

Previously only Spain, Morocco and Tunisia. Southern Portugal, rare, 1 record. Possibly oligolectic on Fabaceae.

M a t e r i a l : Baixo Alentejo, Mértola, 4.vi.2016, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

***Hoplitis campanularis* (MORAWITZ, 1877) ssp. *ibericola* (MAVRMOUSTAKIS, 1947) ***

Iberian endemic subspecies, previously known only from Spain. Southern Portugal, rare, 2 records. Probably oligolectic on Campanulaceae.

M a t e r i a l : Baixo Alentejo, Mértola, 10 km W, 18.iv.2017, 1♂, det. Le Goff, leg. Baldock
Baixo Alentejo, São Sebastião dos Carros, 7.v.2017, 2♀♀, det. Le Goff, leg. Cross

***Hoplitis claviventris* (THOMSON, 1872)**

Central and Northern Portugal, rare, 1 record. Polylectic with a preference for Fabaceae.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 23.vii.1990, 1♀; Vale do Zêzere, viii.1987, 1♀
Minho, Fafe, Lagoa, 26.vii.1994, 1♀, det. Müller, leg. G. Seidler

***Hoplitis cristatula* (ZANDEN, 1990) ***

Southern Portugal, scarce, 8 records. Oligolectic on Malvaceae.

M a t e r i a l : Algarve, Pêra, 5.v.2005, 1♀, det. & leg. Smit
Algarve, Silves, Lavajo, 5.v.2005, 1♂, det. & leg. Smit
Algarve, Pêra dunes, 11.vi.2011, 1♀, det. & leg. Baldock
Algarve, Silves, 11.vi.2011, 1♀, det. & leg. Baldock
Algarve, Cacela Velha, 200m E, 27.iv.2016, 1♂, 1♀, det. Le Goff, leg. Wood; 1-19.v.2017, 1♂, 1♀, det. & leg. Cross
Algarve, Tavira, Cabanas, 31.v.2016, 1♀, det. & leg. A. Livory & R. Coulomb

***Hoplitis fertoni* (PÉREZ, 1890) ***

Iberia, Sicily and North Africa. Southern Portugal, rare, 2 records. Narrowly oligolectic on *Echium*.

M a t e r i a l : Algarve, Lagoa, Sesmarias, 12.v.1995, 1♀, det. Le Goff, leg. D. Keen
Algarve, Lagos, Barragem da Bravura, 17.iv.2014, 1♂, det. Le Goff, leg. E. Dufrêne

***Hoplitis grumi* (MORAWITZ, 1894)**

Iberia and Morocco, also Turkey and Central Asia. Possibly oligolectic on Asteraceae.

M a t e r i a l : ZANDEN 1986: Portugal
Algarve, Guia, 27.iv.2008, 1♂, det. Le Goff, leg. Baldock
Algarve, Cacela Velha, 200m E, 27.iv.2016, 1♂, det. Le Goff, leg. Wood

***Hoplitis jakovlevi* (RADOSZKOWSKI, 1874) ***

Southern Portugal, rare, 4 records. Probably oligoleptic on Malvaceae.

- M a t e r i a l : Algarve, Odeceixe, 26.v.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, 23-25.v.2012, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Ponta da Piedade, 7.iv.2015, 1♂, det. Le Goff, leg. Cross
Algarve, Carrapateira dunes, 8/9.vi.2015, 2♀♀, det. Le Goff, leg. Cross

***Hoplitis leucomelana* (KIRBY, 1802)**

Widespread, scarce, 7 records. Polyleptic with a preference for Fabaceae.

- M a t e r i a l : DINIZ 1960: Portugal
Minho, Fafe, Lagoa, 30.vii.1995, 2♀♀, det. Müller, leg. G. Seidler
Trás-os-Montes, Bragança, Reconço, 3.vii.2016, 3♂♂, det. & leg. Wood
Beira Litoral, São Pedro de Moel, 14.iv.1997, 1♀, det. Baldock, leg. M. Jenner
Estremadura, Sobreira, 25.vi-1.vii.1985, 1♀, det. D. Peters, leg. Cölln, Risch, Sorg
Algarve, Altura near Monte Gordo, 23.iv.2016, 1♀, det. Le Goff, leg. Wood
Algarve, Tavira, Route de Cachopo, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Salema, Boca do Rio, 12.v.2017, 1♀, det. Le Goff, leg. Cross

***Hoplitis marchali* (PÉREZ, 1902) ***

West-Mediterranean. Central and Southern Portugal, scarce, 8 records. Narrowly oligoleptic on *Echium*.

- M a t e r i a l : Ribatejo, Santarem, Abrantes, Mouriscas, 14.v.2009, 1♀, det. Le Goff, leg. F. Pennicamp & P. Pereira, MNHNC
Algarve, Caldas de Monchique, Fornalha, 1.iv.1997, 1♀, det. Müller, leg. P. Hartmann
Algarve, Guia, 24.v.2005, 1♂, det. Le Goff, leg. Baldock
Algarve, Mexilhoeira Grande, 30.v.2015, 1♂, det. Le Goff, leg. J. D'Haeseleer
Algarve, Tavira, Forte do Rato, 22.iv.2016, 3♂♂, det. Le Goff, leg. Wood
Algarve, Cacela Velha, 11-23.iv.2017, 2♂♂, det. Le Goff, leg. Cross
Algarve, Salema, 28.iv.2017, 1♂, det. Le Goff, leg. Cross

***Hoplitis ochraceicornis* (FERTON, 1902) ***

Iberia, France and Italy. Central and Southern Portugal, scarce, 11 records. Mesoleptic on *Echium*, Fabaceae and Lamiaceae.

- M a t e r i a l : Ribatejo, Santarem, Fátima, 12.vi.1973, 1♂ det. Le Goff. MNHNC, coll. Mendoça
Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♀, det. Müller, leg. Baldock
Baixo Alentejo, Mina de São Domingos, 3.v.2017, 1♂, det. & leg. Cross
Algarve, Feiteira, near Cachopo, 30.v.1996, 1♂, det. Müller, leg. J. Tiefenthaler
Algarve, Zavial, 18.iv.2014, 4♂♂, 5♀♀, det. & leg. Le Goff
Algarve, Salema, Boca do Rio, 4.iv.2015, 1♂, 1♀, det. Le Goff, leg. Cross
Algarve, Salema, Boca do Rio, 7.iv.2015, 1♂, det. Le Goff, leg. Wood
Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 1♂, det. Le Goff, leg. Wood
Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 4♂♂, 4♀♀, det. & leg. Wood
Algarve, Cerro do Santo Miguel, 28.iv.2016, 1♂, det. & leg. Wood
Algarve, Cabanas Velhas, 29.iv.2017, 1♂, det. & leg. Cross

***Hoplitis papaveris* (LATREILLE, 1799)**

Southern and Northern Portugal, frequent, 17 records. Polyleptic.

- M a t e r i a l : DINIZ 1960: Portugal
Trás-os-Montes, Baixo Alentejo, Algarve

***Hoplitis perezi* (FERTON, 1895) ***

Central and Southern Portugal, scarce, 6 records. Oligoleptic on Convolvulaceae.

- M a t e r i a l : Estremadura, Sesimbra, 14.v.2012, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Estremadura, Cabo Espichel, 16.v.2012, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, Forte do Rato, 22.iv.2016, 1♀, det. Le Goff, leg. Wood
Algarve, Monte Gordo, Cabeço, 23.iv.2016, 1♀, det. Le Goff, leg. Wood
Algarve, Cacela Velha, 200 m E, 27.iv.2016, 1♀, det. Le Goff, leg. Wood; 16.iv.2017, 1♀, det. Le Goff,
leg. Baldock

***Hoplitis praestans* (MORAWITZ, 1894) ***

Southern and Northern Portugal, scarce, 6 records. Oligoleptic on Campanulaceae.

- M a t e r i a l : Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Bragança, Alfândega da Fé, 22-26.vi.2016, 2♀♀, det. Wood, leg. Penado
Algarve, Alvor, 30.iv.2005, 1♀, leg. Smit
Algarve, Silves, 5.v.2005, 1♀, leg. Smit
Algarve, Carrapateira, 10.vi.2016, 2♀♀, det. & leg. Cross
Algarve, Bordeira, 9.v.2017, 1♀, det. & leg. Cross

***Hoplitis ravouxi* (PÉREZ, 1902) ***

Central and Southern Portugal, scarce, 6 records. Mesolectic on Fabaceae, *Echium* and Crassulaceae with a strong preference for Loteae.

- M a t e r i a l : Estremadura, Sobreda, 25.vi-12.vii.1985, 1♀, det. Peters, leg. Cölln, Risch, Sorg
Algarve, Luz de Tavira, 29.iii.1997, 1♀, det. Müller, leg. P. Hartmann
Algarve, Salema, 31.iii.1997, 1♂, 2♀♀, det. Müller, leg. P. Hartmann
Algarve, Guia, 28.iv.2004, 1♀, det. Müller; 20.iv.2006, 1♂, det. & leg. Baldock
Algarve, Luz de Tavira, 4.v.2005, 1♂, leg. Smit

***Hoplitis saundersi* (VACHAL, 1891) ***

North-west Africa, first record for Europe. Possibly oligoleptic on Asteraceae.

- M a t e r i a l : Algarve, Carrapateira, Praia do Bordeira, 3.vi.1996, 4♀♀, 1♂, det. Müller, leg. J. Tiefenthaler.

***Hoplitis stecki* (FREY-GESSNER, 1908) ***

Previously known as the south-western European subspecies of *Hoplitis mucida* DOURS but raised to full species status by MÜLLER et al. (2017). Widespread, scarce, 12 records. Narrowly oligoleptic on *Echium*.

- M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 18.v.2014, 1♀, det. Le Goff; 23.iv-
24.vi.2015, 2♀♀; 21.vi.2016, 1♀, det. Wood, all leg. Penado
Trás-os-Montes, Bragança, Portelo, 29.vi.2016, 1♀, det. & leg. Wood
Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♂, 1♀, det. Ortiz-Sánchez, leg. Baldock
Baixo Alentejo, Mértola, 11.v.2004, 1♀, det. Müller, leg. R. Prosi; 4.vi.2016, 1♀, det. Le Goff, leg. A.
Livory & R. Coulomb
Baixo Alentejo, Castro Verde, 13.v.2004, 2♀♀, det. Müller, leg. R. Prosi
Baixa Alentejo, Mértola, 15 km S, 17.iv.2017, 3♂♂, 2♀♀, det. & leg. Baldock
Algarve, Cumeada, 16.iv.2014, 2♂♂, det. & leg. Le Goff
Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♀, det. & leg. Wood

***Hoplitis tridentata* (DUFOUR & PERRIS, 1840) ***

Widespread, scarce, 8 records. Considered oligoleptic on Fabaceae, but Müller notes use of *Echium* at some localities. The only available Portuguese pollen load contains an even mixture of *Lotus* and *Echium* pollen, in line with the findings of Müller. Possibly best considered polylectic with a strong preference for Fabaceae.

M a t e r i a l : Minho, Fafe, Lagoa, 1.v.1995, 1♂, det. Müller, leg. G. Seidler
Trás-os-Montes, Bragança, Portelo, 29.vi.2016, 1♀, det. & leg. Wood
Douro Litoral, Póvoa de Varzim, 7.v.1995, 1♂, det. Müller, leg. G. Seidler
Beira Litoral, São Pedro de Moel, 13.iv.1997, 1♀, det. Baldock, leg. M. Jenner
Estremadura, Praia de Viera, 16.iv.1997, 1♀, det. Baldock, leg. M. Jenner
Algarve, Odeceixe, 25.v.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Almograve, 21.v.2012, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♂, 1♀, det. Le Goff, leg. Wood

***Hoplitis zaianorum* (BENOIST, 1927) ***

Iberia and north-west Africa. Possibly oligoleptic on Asteraceae. Central and Southern Portugal, rare, 3 records.

M a t e r i a l : Estremadura, Torres Vedras, Mafra, Quinta Nova da Ermegeira, vi.2014, 2♀♀, det. Baldock, leg. D. Pinto
Algarve, Guia, 4.v.2002, 1♀, det. Müller, leg. Baldock
Algarve, Pêra, Praia Grande, 15.v.2017, 1♀, det. & leg. Cross, confirmed Le Goff

Genus *Osmia* PANZER, 1806

35 species. Pollen preferences in West Palearctic *Osmia* are reviewed by MÜLLER (2017).

***Osmia anceyi* PÉREZ, 1879**

Oligoleptic on Asteraceae.

M a t e r i a l : ORNOSA, TORRES & ORTIS-SÁNCHEZ 2006: Portugal

***Osmia andrenoides* SPINOLA, 1808 ***

Central and Southern Portugal, scarce, 19 records. Polylectic with a preference for Lamiaceae.

M a t e r i a l : Algarve, Guia, 28.iv.2004, 3♂♂, det. F. Torres, leg. Baldock; 20.iv.2005, 1♂, det. & leg. Baldock
Estremadura, Algarve

***Osmia argyropyga* PÉREZ, 1879**

West-Mediterranean. Central Portugal. Probably oligoleptic on Fabaceae.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 6.vi.1989, 1♀, det. Warncke

***Osmia aurulenta* PANZER, 1799 * (though see *Osmia tunensis*)**

Widespread, common, 60 records. Polylectic with a preference for Fabaceae.

M a t e r i a l : Ribatejo, Santarem, Fátima, 4.vii.1969, 1♀, det. Baldock. MNHNC, coll. Mendoça
Minho, Trás-os-Montes, Beira Litoral, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Osmia bicolor* SCHRANK, 1781**

Polylectic.

M a t e r i a l : DINIZ 1960: Portugal

***Osmia bicornis* (LINNAEUS, 1758) (=*Osmia rufa* LINNAEUS)**

Widespread, frequent, 24 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: (as *Osmia rufa*) São Marcos da Serra, 1♀, leg. A.E. Eaton

ZANDEN 1988: (as *Osmia rufa*) Portugal

WESTRICH 2008: Salir, iv.2006, 1♂, 1♀

Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

[*Osmia bidentata* MORAWITZ, 1876]

It is not clear if *Osmia bidentata* occurs in southwestern Europe. On current evidence, it is probably not found in France and Iberia, instead being replaced by *Osmia anceyi*, Müller, pers. comm.

M a t e r i a l : DUSMET 1921: Elvas, 1♂, 1♀

***Osmia brevicornis* (FABRICIUS, 1798) ***

Central and Southern Portugal, rare, 3 records. Oligolectic on Brassicaceae.

M a t e r i a l : Estremadura, Lisboa, Institute of Agronomy, Horto, 3.v.2016, 1♀; Herbacea, 18.v.2016, 1♀, det. Le Goff, leg. M. Carvajal

Algarve, Guia, 2.v.2008, 1♂, det. Jozan/Müller/Le Goff, leg. Baldock

***Osmia caerulescens* (LINNAEUS, 1758)**

Widespread, common, 37 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: 1880, 1♂, 1♀, leg. A.E. Eaton

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 20-23.vii.1990, 3♀♀, det. Warncke

WESTRICH 2008: Salir, iv.2006, 1♂

Minho, Trás-os-Montes, Douro Litoral, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Osmia cephalotes* MORAWITZ, 1870**

Southern and Northern Portugal, rare, 4 records. Polylectic with a preference for Fabaceae.

M a t e r i a l : ORNOSA, TORRES & ORTIZ-SÁNCHEZ 2006: Portugal

Trás-os-Montes, Bragança, Alfândega da Fé, 1/29.vi.2014, 2♀♀, det. Le Goff, leg. Penado

Algarve, Tavira, Route de Cachopo, 29.v.2016, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Burgau, Barrancão, 20.iv.2017, 1♀, det. & leg. Cross

[*Osmia cornuta* (LATREILLE, 1805)]

This species is possibly present in Portugal but we know of no confirmed records.

PETERS 1978: Throughout Iberia, south to Andalusia]

***Osmia cyanoxantha* PÉREZ, 1879**

Southern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : ORNOSA, TORRES & ORTIZ-SÁNCHEZ 2006: Portugal
Algarve, Aljezur, Odeceixe, 24.v.2011, 1♀, det. Le Goff, leg. A. Ivory & R. Coulomb

***Osmia dimidiata* MORAWITZ, 1870 ***

Central Portugal, rare, 2 records. Oligolectic on Asteraceae.

M a t e r i a l : Estremadura, Sesimbra, 28.iii.1971, 1♂, det. Le Goff, leg. P. Mendoça. MNHNC, coll.
Mendoça
Ribatejo, Golega to Chimusca, 4.iv.2017, 1♂, det. Le Goff, leg. M. Jenner

***Osmia emarginata* LEPELETIER, 1841 ***

Widespread, rare, 3 records. Polylectic.

M a t e r i a l : Trás-os-Montes, Serra da Montesinho, Barragem da Serra Serrada, 29.vi.2016, 1♀, det.
& leg. Wood

Alto Alentejo, Portalegre, PN de Serra São Mamade, 4.iv.2017, 1♀, det. Le Goff, leg. M. Jenner
Algarve, Aljezur, area to the west of Vale da Telha, 1-9.v.2016, 1♀, det. & leg. Wood

***Osmia ferruginea* LATREILLE, 1811 ***

Southern Portugal, scarce, 15 records. Polylectic with a strong preference for Fabaceae.

M a t e r i a l : Baixo Alentejo, Odemira, 29.iv.1998, 2♀♀, det. Müller, leg. J. Kadlec

Algarve, 27.iv.1998, 1♀, leg. W. Fliervoet

Algarve, Pêra dunes, 12.iii.2006, 1♂, 1♀, det. Müller, leg. Baldock

Algarve, Mexilhoeira Grande, 30.iv.2005, 1♀, leg. Smit

Algarve, Lagos, 1.v.2005, 2♀♀, leg. Smit

Algarve, Ilha de Tavira, 4.v.2005, 1♀, leg. Smit

Algarve, Alvor, 16.iv.2014, 1♀, leg. Le Goff

Algarve, Pêra dunes, 2.iv.2015, 1♀, det. & leg. Wood

Algarve, Lagos, Meia Praia, 4.iii.2015, 1♂, det. & leg. Cross

Algarve, Praia de São Roque, 4.iii.2015, 1♀, det. & leg. Cross

Algarve, Lagos, Barra do Alvor, 11.iii.2015, 1♀, det. & leg. Cross

Algarve, Tavira, Forte do Rato, 22.iv.2016, 1♂, det. & leg. Wood

Algarve, Monte Gordo, dunes W of, 23.iv.2016, 2♀♀, det. & leg. Wood

Algarve, Praia do Cabeço, 26.iv.2016, 1♀, det. & leg. Wood

Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♂, 3♀♀, det. & leg. Wood

***Osmia gallarum* SPINOLA, 1808**

Southern and Northern Portugal, rare, 7 records. Oligolectic on Fabaceae.

M a t e r i a l : ORNOSA, TORRES & ORTIZ-SÁNCHEZ 2006: Portugal

Minho, Fafe, Lagoa, 15.vii.1994, 1♀; 18.v/30.vii.1995, 1♂, 1♀; 5.iv.1997, 2♂♂, all det. Müller, leg. G.
Seidler

Trás-os-Montes, Serra do Montesinho, Alto do Falgueirão, 30.vi.2016, 1♀, det. Le Goff, leg. Wood

Trás-os-Montes, Serra do Montesinho, Porto do Sabor, 4.vii.2016, 1♀, det. & leg. Wood

Algarve, Monchique, 17.iv.2014, 1♀, det. & leg. Le Goff

***Osmia heteracantha* PÉREZ, 1895**

West-Mediterranean. Southern Portugal, rare, 1 record. Possibly mesolectic on Fabaceae, Boraginaceae and Lamiaceae.

M a t e r i a l : WARCKE 1988: (as *Osmia ardeola* WARCKE) Algarve, Alcoutim, 2♀♀, OMLM
ORNOSA, TORRES & ORTIZ-SÁNCHEZ 2006: Portugal
Algarve, Burgau, 8.iv.1997, 2♂♂, det. Müller, leg. P. Hartmann

***Osmia iberica* ZANDEN, 1987 ***

Iberian endemic. Central and Southern Portugal, scarce, 13 records. Pollen preferences unclear, possibly polylectic. *Dorycnium hirsutum* is the only confirmed Portuguese pollen source.

M a t e r i a l : Estremadura, Lisboa, Fonte da Telha, 1-12.iv.1985, 1♂, det. Müller, leg. Risch
Estremadura, Marinha Grande, Praia da Pedra Ouro, 1♂, 5.iv.2017, det. Le Goff, leg. M. Jenner
Algarve, Carrapateira, 1.iv.1997, 2♂♂, 1♀, det. Müller, leg. P. Hartmann
Algarve, Cabo Portal, 4.iv.1997, 1♀, det. Müller, leg. P. Hartmann
Algarve, Vila Real de Santo António, 24.v.2012, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Sagres, 21.iv.2014, 1♀, det. & leg. Le Goff
Algarve, Carrapateira, 5.iv.2014, 2♂♂, 2♀♀, det. Le Goff; 3.iv.2015, 4♂♂, det. & leg. Wood; 25.iv.2016,
1♀, det. & leg. Cross; 28.iii.2017, 1♀, det. & leg. Cross
Algarve, Amoreira, 1.iv.2015, 1♂, 1♀; 17.iv/2016, 1♂; 24.vi.2016, 1♀, all det. & leg. Cross
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♂, 3♀♀, det. & leg. Wood

***Osmia labialis* PÉREZ, 1879**

Widespread, scarce, 12 records. Oligolectic on Asteraceae.

M a t e r i a l : TKALCÚ 1975: (ssp. *labialis*) Portugal
Trás-os-Montes, Serra da Montesinho, Porto do Sabor, 4.vii.2016, 1♀, det. & leg. Wood
Trás-os-Montes, Bragança, Alfândega da Fé, 22-27.vi.2016, 3♀♀, det. Wood, leg. Penado
Estremadura, Cabo Espichel, 16.v.2012, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Estremadura, Torres Vedras, Freiria, 30.v.2012, 1♀, det. Le Goff, leg. C. Reis
Algarve, Monchique, 2.vi.2009, 1♀, det. Müller, leg. V. Mauss
Algarve, Guia, 27.iv.2008, 1♂, det. Jozan/Le Goff, leg. Baldock
Algarve, Burgau, 14.iv.2014, 1♀, det. & leg. Le Goff
Algarve, Salema, Boca do Rio, 9.iv.2016, 1♂, det. Le Goff, leg. Cross
Algarve, Tavira, Forte do Rato, 22.iv.2016, 1♀, det. & leg. Wood
Algarve, Cerro de Santo Miguel, 28.iv.2016, 3♂♂, 1♀, det. Le Goff, leg. Wood
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. & leg. Wood
Algarve, Tavira, Route de Cachopo, 29.v.2016, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

***Osmia latreillei* (SPINOLA, 1806) ssp. *iberoafricana* PETERS, 1975 ***

West-Mediterranean subspecies. Widespread, frequent, 25 records. Oligolectic on Asteraceae.

M a t e r i a l : Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♂, det. F. Torres, leg. Baldock
Trás-os-Montes, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Osmia leaiana* (KIRBY, 1802) ***

Southern and Northern Portugal, rare, 4 records. Oligolectic on Asteraceae.

M a t e r i a l : Trás-os-Montes, Vila Real, Aveção do Cabo, 28.vi.2016, 1♀, det. Müller, leg. Wood

Baixo Alentejo, Mértola, Corte do Gafo de Baixo, 24.iii.2016, 1♂, det. Le Goff, leg. A. Gonçalves
Algarve, Guia, 28.iv.2004, 2♂♂, det. F. Torres/Müller, leg. Baldock
Algarve, Salema, Praia da Figueira, 5.iv.2015, 1♂, det. Le Goff, leg. Wood

***Osmia ligurica* MORAWITZ, 1868 ***

Widespread, common, 38 records. Oligolectic on Asteraceae.

M a t e r i a l : Estremadura, Sobreda, 5.v-25.vi.1985, 2♂♂, 6♀♀, det. D. Peters, leg. Cölln, Risch, Sorg
Minho, Trás-os-Montes, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Osmia lobata* FRIESE, 1899**

Iberia and north-west Africa. Southern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : ORNOSA, TORRES & ORTIZ-Sánchez 2006: Portugal
Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♀, det. Le Goff, leg. A. van Harten

***Osmia lunata* BENOIST, 1928 ***

West-Mediterranean. Northern Portugal, rare, 1 record. Oligolectic on Fabaceae, with a particular preference for *Lotus*.

M a t e r i a l : Trás-os-Montes, Pardelhas, 11.vi.2017, 1♂, det. Le Goff, leg. Cross

***Osmia melanogaster* SPINOLA, 1808**

Widespread, frequent, 24 records. Oligolectic on Asteraceae.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 5.vi.1989, 1♀
Trás-os-Montes, Beira Baixa, Estremadura, Ribatejo, Algarve

***Osmia nasopunctata* FERTON, 1909**

West-Mediterranean. Widespread, rare, 4 records. Mesolectic on Cistaceae and Asteraceae with a distinct preference for *Cistus*.

M a t e r i a l : LE GOFF 2016: Zavial, 18.iv.2014, 1♂, det. & leg. Le Goff, male Allotype
Trás-os-Montes, Bragança, Alfândega da Fé, 27.v.2015, 1♀, det. Baldock, leg. Penado
Estremadura, Pataias, Praia do Ouro, 1.v.2000, 1♀, det. Baldock, leg. M. Jenner
Estremadura, PN das Serras de Aire e Candeeiros, 27.iv.2014, 1♀, det. Baldock, leg. M. Jenner
Algarve, Aljezur, Odeceixe, 24.v.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

***Osmia niveata* (FABRICIUS, 1804)**

Widespread, common, 31 records. Oligolectic on Asteraceae.

M a t e r i a l : SAUNDERS 1881: (as *Osmia fulviventris* LATREILLE) Coimbra-Santo António,
3.vi.1880, 1♀, leg. A.E. Eaton

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500 m, 1-7.vi.1989, 5♀♀
Trás-os-Montes, Beira Litoral, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo,
Algarve

***Osmia niveocincta* PÉREZ, 1879**

Widespread, rare, 4 records. Oligoleptic on Asteraceae.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 17-23.vii.1990, 3♀♀
Minho, Fafe, Lagoa, 1.v/5.vii.1995, 4♀♂, det. Müller, leg. G. Seidler
Trás-os-Montes, Bragança, Alfândega da Fé, 1.vii.2014, 1♀, det. Le Goff; 23.vi.2016, 1♀, det. Wood.
both leg. Penado
Algarve, Castalejo, 11.vi.2011, 1♀, det. Le Goff, leg. Baldock

***Osmia notata* (FABRICIUS, 1804)**

Central and Southern Portugal. Oligoleptic on Asteraceae.

M a t e r i a l : DUSMET 1931: Coimbra, 2♂♂
DINIZ 1959: Alfarrobeira; Berlenga; Mitra

***Osmia rufohirta* LATREILLE, 1811 ***

Central and Southern Portugal, frequent, 26 records. Polyleptic with a preference for Fabaceae.

M a t e r i a l : Estremadura, Torres Vedras, Serra de Montejunto, 8.v.1985, 1♂, det. Baldock.
MNHNC, coll. Mendoça
Estremadura, Algarve

***Osmia scutellaris* MORAWITZ, 1868**

Widespread, frequent, 23 records. Oligoleptic on Asteraceae.

M a t e r i a l : DUSMET 1931: Mitra, 2♀♀
DINIZ 1959: Coimbra; Évora
Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Algarve

***Osmia signata* ERICHSON, 1835**

Widespread, common, 42 records. Oligoleptic on Asteraceae.

M a t e r i a l : DUSMET 1921: Estremoz, 1♀
Minho, Trás-os-Montes, Douro Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Osmia submicans* MORAWITZ, 1870 ***

Widespread, frequent, 27 records. Polyleptic with a strong preference for Fabaceae.

M a t e r i a l : Algarve, Fornalha, 6km E Caldas de Monchique, 1.iv.1997, det. Müller, leg. P.
Hartmann
Minho, Estremadura, Baico Alentejo, Algarve

***Osmia tergestensis* DUCKE, 1897 ***

Northern Portugal, rare, 1 record. Oligoleptic on Fabaceae.

M a t e r i a l : Minho, Fafe, Lagoa, 15.vii.1994, 1♀, det. Müller, leg. G. Seidler

***Osmia tricornis* LATREILLE, 1811**

Southern and Northern Portugal, frequent, 16 records. Polyleptic.

M a t e r i a l : DUSMET 1931: Mitra, Aldeia Nova de São Bento, 2♀♀
Trás-os-Montes, Alto Alentejo, Algarve

[*Osmia tunensis* (FABRICIUS, 1787)]

The difference between *Osmia aurulenta* and *Osmia tunensis* is slight and they may in fact be conspecific, Müller pers. comm. Given the abundance of *Osmia aurulenta* and its absence from Diniz's lists, it is likely this is the species he was referring to. Until the taxonomic issues are resolved the presence of *Osmia tunensis* s.s. in Portugal is considered unclear.

M a t e r i a l : DINIZ 1960: Portugal]

Osmia uncicornis PÉREZ, 1895 *

Iberia and Morocco. Central and Southern Portugal, frequent, 20 records. Probably oligoleptic on Fabaceae. *Lotus creticus* is the only confirmed Portuguese pollen source.

M a t e r i a l : Estremadura, Almada, 28.vi.1962, 1♀, det. Baldock, leg. J. Abraham & Horascek,
BMNH
Beira Litoral, Estremadura, Algarve

Osmia versicolor LATREILLE, 1811 *

Central and Southern Portugal, common, 31 records. Polylectic with a strong preference for Fabaceae.

M a t e r i a l : Algarve, Carrapateira, 14.v.1995, 1♀, det. Müller, leg. J. Gusenleitner
Beira Alta, Estremadura, Algarve

Genus *Protosmia* DUCKE, 1900

6 species. Pollen preferences in West Palearctic *Protosmia* are reviewed by MÜLLER (2017).

Protosmia asensioi GRISWOLD & PARKER, 1987 *

Iberian endemic. Widespread, scarce, 7 records. Pollen preferences unknown, but likely to be polyleptic. Analysis of one pollen load confirms Fabaceae and *Carpobrotus edulis* as Portuguese pollen sources.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 2-29.vi.2014, 3♂♂, det. Le Goff, leg.
Penado
Estremadura; Sesimbra, 3.vi.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Estremadura, Cabo Espichel, 4.vi.2011, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Baixo Alentejo, Mértola, San Sebastião dos Carros, 7.v.2017, 1♀, det. Le Goff, leg. Cross
Algarve, Guia, 20.iv.2005, 1♀, det. Le Goff, leg. Baldock
Algarve, Amoreira, 25.vi.2015, 1♀, det. Le Goff, leg. Cross
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♀, det. & leg. Wood

Protosmia capitata (SCHLETTERER, 1889) *

Iberia and north-west Africa. Southern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : Baixo Alentejo, Alcàcer do Sal, 7.iv.2016, 1♀, det. Le Goff, leg. Cross

Algarve, São Brás de Alportel, Bico Alto, 23.iii.1984, 1♂, det. Müller, leg. J. van Corstenje
Algarve, São Brás de Alportel, Tareja, 9.iv.1991, 1♂, det. Müller, leg. J. van Corstenje; 28.iv.1991, 1♂,
det. Müller, leg. H. Teunissen

***Protosmia exenterata* (PÉREZ, 1895) ***

West-Mediterranean. Southern Portugal, rare, 2 record. Polylectic.

M a t e r i a l : Algarve, Almancil, 12-15.v.1982, 1♂, 1♀, det. Müller, leg. H. Teunissen
Algarve, Carrapateira, Praia do Bordeira, 3.vi.1996, 1♀, det. Müller, leg. J. Tiefenthaler

***Protosmia glutinosa* (GIRAUD, 1871)**

Southern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : ORNOSA, TORRES & ORTIZ-SÁNCHEZ 2006: Portugal
Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♂, det. Le Goff, leg. Wood
Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 1♂, det. Le Goff, leg. Wood
Algarve, Carrapateira, 26.iv.2016, 1♂, det. Le Goff, leg. Cross
Algarve, Cacela Velha, 16.iv.2017, 1♂, det. Le Goff, leg. Baldock

***Protosmia lusitanica* LE GOFF & GONÇALVES, 2018**

Portuguese endemic. Southern Portugal. Pollen preferences unknown but probably polylectic like other *Protosmia* species.

M a t e r i a l : LE GOFF & GONÇALVES 2018: Mértola, São Sebastião dos Carros, 25.iii.2016, 1♀, det.
Le Goff, leg. A. Gonçalves, female Holotype

***Protosmia minutula* (PÉREZ, 1896) ***

Widespread, scarce, 6 records. Polylectic with a preference for Lamiaceae.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 1.vii.2014, 1♂; 24.v.2015, 1♂, det. Le
Goff, leg. Penado
Estremadura, Sesimbra, 3.vi.2011, 1♀; 14.v.2012, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Baixo Alentejo, Mértola, 5.vi.2016, 2♀♂, det. Le Goff, leg. A Livory & R. Coulomb
Algarve, Aljezur, 1.vi.1987, 1♀, det. Le Goff, leg. H. Tussac

ANTHIDIINI

Genus *Anthidiellum* COCKERELL, 1904

2 species. Pollen preferences in Western Palearctic Anthidiine bees were reviewed by MÜLLER (1996).

***Anthidiellum breviusculum* (PÉREZ, 1890) ***

Northern Portugal, rare, 3 records. Polylectic with a preference for Lamiaceae.

M a t e r i a l : Minho, Codeçoso, Linha do Tamega, 13.vi.2016, 2♂♂, det. & leg. Cross
Trás-os-Montes, Moimenta, hills E of, 2.vii.2016, 1♂, 1♀, det. Le Goff, leg. Wood
Douro Litoral, Amarante, Chapa, 19.vi.2016, 2♂♂, 1♀, det. Le Goff, leg. Cross

***Anthidiellum strigatum* (PANZER, 1805) ssp. *contractum* (LATREILLE, 1809)**

West-Mediterranean subspecies. Widespread, common, 64 records. Polylectic with a preference for Fabaceae.

Materia : DUSMET 1931: Mitra, 1♀

DINIZ 1989: 34♂♂, 8♀♀; Castro Marim; Coimbra; Estoril; Monte Gordo; Resende; São Bartolomeu de Messines; São Fiel; Sines; Tabuaço; Viseu

KUHLMANN 1996: Serra da Estrela, Vale do Zêzere, viii.1987, 1♂; Vale de Candieira 1400 m, 2.viii.1990, 1♀

Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estemadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Genus *Anthidium* FABRICIUS, 1804

8 species.

***Anthidium cingulatum* LATREILLE, 1809**

Central Portugal, rare, 1 record. Polylectic.

Materia : DINIZ 1989: Aveiro; Coimbra; Serra do Buçaco; Setúbal; Viseu

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 29.vii.1990, 1♂

Estremadura, Lisboa, Institute of Agronomy, 7.vi.2016, 1♀, det. Le Goff, leg. M. Carvajal

***Anthidium diadema* LATREILLE, 1809**

Central Portugal. Oligolectic on Asteraceae.

Materia : DINIZ 1989: 4♂♂, 5♀♀; Coimbra, Serra da Estrela, Gouveia, Guarda

***Anthidium florentinum* (FABRICIUS, 1775)**

Widespread, frequent, 17 records. Polylectic.

Materia : DINIZ 1989: 9♂♂, 7♀♀, Agueda; Avelar; Coimbra; Évora; Massora; Resende; São Fiel; Serra da Estrela, Gouveia

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Anthidium loti* PERRIS, 1852**

Widespread, rare, 3 records. Polylectic with a preference for Fabaceae.

Materia : DINIZ 1989: 17♂♂, 4♀♀, Serra da Estrela, Aldeias, Gouveia

Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♂, det. Le Goff, leg. Wood

Baixo Alentejo, Mértola, 4.vi.2016, 1♂, det. Le Goff, phot. A. Ivory & R. Coulomb

Algarve, Amoreira, 8.vi.2017, 1♂, det. & leg. Cross

***Anthidium manicatum* (LINNAEUS, 1758)**

Widespread, common, 44 records. Polylectic.

Materia : DINIZ 1989: 72♂♂, 86♀♀: Buarcos, Caldas de Monchique, Caparica, Castro Marim, Estoril, Coimbra, Évora, Faro, Figueira da Foz, Fontanelas, Lagos, Leça da Palmeira, Lisboa, Monte Gordo, Oliveira do Bairro, Pedras Salgadas, Portimão, Resende, Rio de Vide, São Brás de Alportel, São Fiel, São Pedro do Sul, Senhora da Orada, Serra da Gardunha, Setúbal, Sines, Trafaria, Vieira de Leiria, Vila Nova de Milfontes, Viseu, Vouzela

Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Anthidium oblongatum* ILLIGER, 1806**

Widespread, frequent, 17 records. Polylectic.

M a t e r i a l : DUSMET 1921: Famalicão, 1♀
DINIZ 1989: 11♂, 19♀, Aljustrel, Barragem do Arade, Caldas de Monchique, Caparica, Castro Marim, Coimbra, Évora, Massora, Monte Gordo, Portimão, Resende, São Fiel, Serra da Estrela, Trafaria
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500 m, 20.vii.1990, 2♂♂, 3♀♀; 23.vii.1990, 3♂♂,
1♀, det. Warncke
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Anthidium punctatum* LATREILLE, 1809 ***

Southern and Northern Portugal, scarce, 12 records. Polylectic with a preference for Fabaceae.

M a t e r i a l : Minho, Codeçoso, Linha do Tamega, 13.vi.2017, field, det. & leg. Cross
Trás-os-Montes, Bragança, Alfândega da Fé, 2-27.vi.2014, 4♂♂, 1.vi.2014, 1♀, det. Le Goff; 28.v.2015,
1♂; 22-25.vi.2016, 1♂, 1♀, det. Wood, all leg. Penado
Trás-os-Montes, Bragança, Gondesende, 1.vii.2016, 1♂, 1♀, det. & leg. Wood
Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♂, 2♀♀, det. & leg. Wood
Algarve, Odiáxere, 1.v.2005, 1♂, leg. Smit
Algarve, Budens, Lagoa de Budens, 29.iv/17.v.2016, 1♀, 1♂, det. & leg. Cross
Algarve, Salema, Boca do Rio, 25.v.2016, 1♀, det. & leg. Cross
Algarve, Barragem de Bravura, 8.v.2017, 1♀, det. & leg. Cross

***Anthidium taeniatum* LATREILLE, 1809**

Central and Southern Portugal, rare, 5 records. Polylectic with a preference for Fabaceae.

M a t e r i a l : DUSMET 1931: Mitra, 1♂, 1♀
DINIZ 1959: Évora
DINIZ 1989: 70♂♂, 25♀♀, Aljustrel; Buarcos; Cacela; Castro Marim; Coimbra; Estoril; Lisboa; Monte Gordo; Montemor-o-Velho; Portimão; São Bartolomeu de Messines; Tavira; Trafaria
Algarve, Silves, Barragem do Arade, 5.viii.2015, field, det. & leg. Cross
Algarve, Salema, Boca do Rio, 20.vi.2016, 1♂, det. & leg. Cross
Algarve, Amoreira, 25.vi.2016, 3♂♂, 1♀, det. & leg. Cross
Algarve, Vilarinha, 2.vi.2017, 1♀, det. & leg. Cross

var. *monile* FRIESE, 1897

M a t e r i a l : Algarve, Pêra, Praia Grande, 17/19.vi.2015, 3♂♂, det. Le Goff, leg. Cross

Genus *Afranthidium* MICHENNER, 1948

1 species.

***Afranthidium schulthessii* (FRIESE, 1897) ***

Previously known only from Spain and Morocco. Southern Portugal, rare, 2 records. Oligolectic on Asteraceae. In Portugal this species is associated with *Asteriscus aquaticus*.

M a t e r i a l : Algarve, Cacela Velha, 200m E, 27.iv.2016, 1♂, det. Le Goff, leg. Wood; 23.iv.2017, 1♂, 2♀♀, det. & leg. Cross

Genus *Icteranthidium* MICHENER, 1948

3 species.

***Icteranthidium ferrugineum* (FABRICIUS, 1787)**

Central and Southern Portugal, frequent, 23 records. Polylectic.

M a t e r i a l : DINIZ 1959: Portugal

DINIZ 1989: 7♂♂, 4♀♀; Cacela; Monte Gordo; Pegões; Portimão
Estremadura, Algarve

***Icteranthidium grohmanni* (SPINOLA, 1838)**

Central and Southern Portugal, scarce, 7 records. Polylectic.

M a t e r i a l : DINIZ 1989: 4♂♂, 7♀♀; Aljustrel; Estoril; Montemor-o-Novo; Olhão
Algarve, Aljezur, Odeceixe, 25.vii.2010, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Baixo Alentejo, Mértola, 27.viii.2012, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Aljezur, 29.ix.2014, 1♀, det. Le Goff, leg. Cross
Algarve, Amoreira, 4-26.vi.2016, 1♂, 1♀, det. & leg. Cross; 25-28.viii.2015, 1♂, 1♀, det. & leg. Cross;
23.v.2017, 1♀, det. Le Goff, leg. Cross
Algarve, Salema, Boca do Rio, 22.vi.2016, 1♂, det. & leg. Cross

***Icteranthidium laterale* (LATREILLE, 1809)**

Central and Southern Portugal. Polylectic with a preference for Asteraceae.

M a t e r i a l : DUSMET 1931: Serra da Boa Viagem, 1♀
DINIZ 1989: 4♂♂, 2♀♀; Carcavelos; Monte Gordo; Olhão; Sines

Genus *Pseudoanthidium* FRIESE, 1898

4 species.

***Pseudoanthidium eximium* (GIRAUD, 1863) ***

Northern Portugal, rare, 1 record. Oligolectic on Asteraceae.

M a t e r i a l : Trás-os-Montes, Moimenta, hills E of, 2.vii.2016, 2♀♀, det. Le Goff, leg. Wood

***Pseudoanthidium melanurum* (KLUG, 1832) ***

Central and Northern Portugal, rare, 5 records. Oligolectic on Asteraceae.

M a t e r i a l : Minho, Lagoa, Fafe, 5.vii.1995, 2♂♂, 2♀♀; 1.viii.1995, 1♂, all leg. G. Seidler, det.
Schwarz

Trás-os-Montes, Bragança, Montesinho, 1♂, det. & leg. Wood

Trás-os-Montes, Moimenta, hills E of, 2.vii.2016, 1♂, det. & leg. Wood

Beira Alta, Viseu, Armamar, 2.viii.2001, 3♀♀, det. & leg. Schmid-Egger

***Pseudoanthidium nanum* (MOCSÁRY, 1879) ***

Southern Portugal, rare, 1 record. Oligoleptic on Asteraceae.

M a t e r i a l : Algarve, Cacela Velha, 23.iv.2017, 1♀, det. Le Goff, leg. Cross

***Pseudoanthidium scapulare* (LATREILLE, 1809)**

Central and Southern Portugal, scarce, 14 records. No published pollen preferences, probably oligoleptic on Asteraceae like other *Pseudoanthidium* species.

M a t e r i a l : DUSMET 1931: Valverde, 1♀
DINIZ 1959: Évora; Ribeira de Valverde

DINIZ 1989: Carcavelos; Coimbra; Estoril; Figueira da Foz
Beira Baixa, Castelo Branco, Malpica do Tejo, 9.viii.1979, 1♀, det. Baldock. MNHNC
Estremadura, Sobreda, 15.viii-20.xi.1985, 2♀♀, det. D. Peters, leg. Cölln, Risch, Sorg
Estremadura, Sesimbra, 14.v.2012, 1♂, det. Le Goff, leg. A. Ivory
Ribatejo, Santarem, 24.vi.1972, 1♀, det. Baldock. MNHNC, coll. Mendoça
Ribatejo, Santarem, Fátima, 13.ix.1979, 2♀♀, det. Baldock. MNHNC, coll. Mendoça
Baixo Alentejo, Vila Nova de Milfontes, 9.vii.1972, 1♀, det. Baldock. MNHNC, coll. Mendoça
Algarve, Guia, 15.vii.2009, 5♀♀, det. Le Goff, leg. Baldock
Algarve, Aljezur, Odeceixe, 23-26.vii.2010, 1♂, 1♀, det. Le Goff, leg. A. Ivory
Algarve, Faro, Bordeira, 20.ix.2010, 2♀♀, det. Baldock, leg. H. Whiteley
Algarve, Pêra dunes, 23.vii.2014, 1♀, det. & leg. Baldock
Algarve, Salema, Praia da Figueira, 21.ix.2015, 1♀, det. Baldock, leg. Wood
Algarve, Amoreira, 4/16.vi.2015, 2♂♂; 24.iv.2016, 1♂, det. & leg. Cross
Algarve, Barão de São João, 15.viii.2015, 1♂, det. & leg. Cross
Algarve, Amoreira, 24.iv.2016, 1♀, det. & leg. Cross

Genus *Rhodanthidium* ISENSEE, 1927

4 species.

***Rhodanthidium infuscatum* (ERICHSON, 1835)**

Southern Portugal. Polyleptic.

M a t e r i a l : DINIZ 1989: Monte Gordo, 2♂♂, 2♀♀

***Rhodanthidium septemdentatum* (LATREILLE, 1809)**

Widespread, common, 69 records. Polyleptic.

M a t e r i a l : DINIZ 1989: 15♂♂, 11♀; Carcavelos, Coimbra, Estoril, Lagoa de Albufeira, Lisboa, Praia das Maçãs, Resende, Seixal, Vila do Bispo
WESTRICH 2008: Algarve, Salir, iv.2006, 1♀
Trás-os-Montes, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Rhodanthidium siculum* (SPINOLA, 1838)**

Central and Southern Portugal, frequent, 28 records. Polyleptic.

M a t e r i a l : DINIZ 1989: 4♂♂, 5♀♀; Aljezur; Armação de Pêra; Caparica; Castro Marim; Faro; Setúbal
Estremadura, Algarve

***Rhodanthidium sticticum* (FABRICIUS, 1793)**

Central and Southern Portugal, common, 72 records. Polylectic.

M a t e r i a l : DINIZ 1960: Portugal

DINIZ 1989: 49♂♂, 39♀♀; Alvor, Armação de Pêra, Castelo Branco, Coimbra, Condeixa, Estoril, Faro, Lisboa, Portimão, Portinho da Arrábida, São Bartolomeu de Messines, Setúbal

WESTRICH 2008: Algarve, Salir, iv.2006, 1♂, 1♀

Trás-os-Montes, Beira Litoral, Beira Baixa, Estremadura, Baixo Alentejo, Algarve

Genus *Stelis* PANZER, 1806

6 species. Broodparasites of various Megachilid bees. Host associations of West Palearctic *Stelis* species were reviewed by KASparek (2015).

***Stelis breviuscula* NYLANDER, 1848**

Widespread, scarce, 8 records. Broodparasite of *Heriades* species. The one confirmed host record for Portugal is Amoreira, 12.x.2017, where it was observed entering nests of *Heriades crenulata*.

M a t e r i a l : DINIZ 1989: 5♂♂, 3♀♀; Coimbra; Évora; Soure

Trás-os-Montes, Bragança, Alfândega da Fé, 19.v/3.viii.2014, 1♂, 1♀, det. Le Goff, leg. Penado

Estremadura, Abrantes, 7.xi.2011, 1♀, det. Baldock, leg. Penado

Algarve, Aljezur, 1.vi.1987, 1♂, det. Le Goff, leg. H. Tussac

Algarve, Silves, 19.vii.2014, 1♀, det. & leg. Baldock

Algarve, Pêra dunes, 18.ix.2015, 1♂, 1♀, det. & leg. Wood

Algarve, Salema, Boca do Rio, 6.xi.2016, 1♀, det. & leg. Cross

Algarve, Amoreira, 12.x.2017, 1♀, det. & leg. Cross

***Stelis nasuta* (LATREILLE, 1809)**

Central Portugal. Broodparasite of *Megachile* (*Chalicodoma*) mud-daubing species.

M a t e r i a l : DINIZ 1989: 5♂♂, 8♀♀; Aveiro; Gouveia; Lousã; Miranda do Corvo

***Stelis ortizi* SCHWARZ & GUSENLEITNER, 2010 ***

Previously Spain only. Iberian endemic. Southern Portugal, rare, 2 records. No known hosts, but our observations suggest that *Osmia uncicornis* may be the host. *Stelis ortizi* is the only European *Stelis* with red colouration on the tergites, and some *Stelis* appear to display Müllerian mimicry, matching their host in colour, though this is not consistent across the Western Palearctic species (KASparek 2015). *Osmia uncicornis* shares its distinctive reddish colouration and was the only Osmiine bee large enough to host this sizeable *Stelis* at the sampled localities. However, no females have been found or nest searching behaviour observed, so this potential relationship must be considered unproven.

M a t e r i a l : Algarve, Tavira, Praia do Barril, 24.iv.2016, 4♂♂, det. Wood/Schwarz, leg. Wood

Algarve, Salema, Boca do Rio, 25.v.2016, 1♂, det. & leg. Cross

***Stelis phaeoptera* (KIRBY, 1802)**

Central and Southern Portugal. Broodparasite of various *Osmia* and *Hoplitis* species.

M a t e r i a l : DINIZ 1989: 3♂♂, 2♀♀; Castro Marim; Coimbra; Évora; Serra do Buçaco

***Stelis punctulatissima* (KIRBY, 1802)**

Widespread, rare, 3 records. Many cited Osmiine hosts but WESTRICH & DATHE (1997) suggest specific close association with *Anthidium manicatum*. The one confirmed host record for Portugal is Amoreira, 4.vi.2015, where it was observed at a nest site of *Anthidium manicatum*.

M a t e r i a l : DINIZ 1989: 7♂♂, 5♀♀; Aveiro; Castelo Branco; Castro Marim; Coimbra; Sines Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♀, det. & leg. Wood Algarve, Alvor, Cruzinha, 12.v.2015, 1♀, det. Wood, leg. J. D'Haeseleer Algarve, Amoreira, 4.vi.2015, 2♀♀, det. & leg. Cross

***Stelis signata* (LATREILLE, 1809)**

Widespread, frequent, 16 records. Broodparasite of *Anthidiellum strigatum*.

M a t e r i a l : DINIZ 1989: 5♂♂, 5♀♀; Angeiras, Coimbra, Estoril, Figueira da Foz, Sines Douro Litoral, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

Genus *Trachusa* PANZER, 1804

3 species.

***Trachusa byssina* (PANZER, 1798)**

Central and Northern Portugal, rare, 2 records. Oligoleptic on Fabaceae.

M a t e r i a l : DINIZ 1989: 4♂♂, 4♀♀; Amarante; Castelo de Vide; Coimbra; Condeixa; Figueira da Foz; Viseu
Trás-os-Montes, Serra da Montesinho, Barragem da Serra Serrada, 29.vi/4.vii.2016, 3♂♂, 1♀, det. & leg. Wood

***Trachusa interrupta* (FABRICIUS, 1781)**

Southern Portugal. Oligoleptic on Dipsacaceae.

M a t e r i a l : DINIZ 1989: 4♂♂, 2♀♀; Faro; Monte Gordo; Vila do Bispo

***Trachusa laeviventris* (DOURS, 1873)**

West-Mediterranean. Widespread, scarce, 17 records. Polyleptic with a preference for Fabaceae.

M a t e r i a l : DINIZ 1989: 4♂♂, 3♀♀; Lisboa; Pombal; Seixal; Setúbal
Trás-os-Montes, Beira Litoral, Estremadura, Baixo Alentejo, Algarve

DIOXYINI

European Dioxyines are broodparasites of bees in the tribes Megachilini and Osmiini (MICHENER 2007). Dioxyines are not very host specific with numerous species reared from cells of both tribes.

Genus *Aglaoapis* CAMERON, 1901

1 species.

***Aglaooapis tridentata* (NYLANDER, 1848)**

Central and Northern Portugal. Broodparasite of various Megachilid bees such as *Hoplitis anthocopoides* and *Megachile (Chalicodoma)* species (AMIET et al. 2004).

M a t e r i a l : DINIZ 1989: (as *Dioxys tridentata*) 2♂♂, 3♀♀; Amarante; Coimbra; Figueira da Foz

Genus *Ensliniana* ALFKEN, 1938

1 species.

***Ensliniana bidentata* (FRIESE, 1899) ***

Iberia, North Africa and Turkey. Southern Portugal, rare, 5 records. One host record for Portugal at Pêra on 15.v.2017 where it was seen entering the nest of *Hoplitis zaianorum*.

M a t e r i a l : Algarve, Cacela Velha, 200m E, 27.iv.2016, 2♂♂, det. & leg. Wood; 23.iv-1.v.2017, 2♀♀, 1♂, det. & leg. Cross
Algarve, Pêra, Praia Grande, 15/18.v.2016, 4♀♀; 15.v.2017, field, all det. & leg. Cross

Genus *Dioxys* LEPELETIER & SERVILLE, 1825

3 species. Nomenclature follows RASMONT et al. (2017).

***Dioxys cinctus* (JURINE, 1807)**

Central and Southern Portugal, frequent, 16 records. One host record for Portugal; Amoreira, 6.vi.2015, photographed at a nest site of *Hoplitis benoisti*.

M a t e r i a l : SAUNDERS 1881: (as *Dioxys pyrenaica* LEPELETIER) Almodovar, 7.v.1880, 1♂, leg. A.E. Eaton

DUSMET 1931: Évora, 1♀

DINIZ 1989: 3♂♂, 2♀♀; Coimbra; Sines; Viseu

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 7.vi.1989, 1♀
Beira Litoral, Beira Baixa, Estremadura, Algarve

***Dioxys moestus* COSTA, 1883**

Southern and Northern Portugal, rare, 3 records. Broodparasite of *Hoplitis anthocopoides* and *Hoplitis benoisti* (LE GOFF 2005).

M a t e r i a l : DINIZ 1989: 2♂♂, 1♀; Serra do Gerês, Caminha
Baixo Alentejo, São Sebastião dos Carros, 4.iv.2017, 1♀, det. & leg. Cross
Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♂, det. Le Goff, leg. Wood
Algarve, Pêra dunes, 23.iv.2017, 1♀, det. & leg. Smit

***Dioxys pumilus* GERSTÄCKER, 1869 ***

Central and Southern Portugal, scarce, 9 records. Broodparasite of *Hoplitis annulata* (LE GOFF 2005).

M a t e r i a l : Estremadura, Sesimbra, 3.vi.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Pêra dunes, 11.vi.2011, 1♀, det. Le Goff, leg. Baldock
Algarve, Tavira, 23-25.v.2012, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, Forte do Rato, 22.iv.2016, 1♂, det. & leg. Wood
Algarve, Monte Gordo, Praia do Cabeço, 26.iv.2016, 1♂, det. & leg. Wood

Algarve, Pêra, Praia Grande, 10.vi.2015, 1♀; 30.iv.2016, 1♂, 2♀♀, det. & leg. Cross
Algarve, Tavira, Cabanas, 31.v.2016, 3♀♀, det. & leg. A. Livory & R. Coulomb
Algarve, Cacela Velha, 1-19.v.2017, 2♀♀, 1♂, det. & leg. Cross

MEGACHILINI

Genus *Coelioxys* LATREILLE, 1809

15 species. Broodparasites of bees in the Megachilini tribe. Host preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2004). Nomenclature follows RASMONT et al. (2017).

Coelioxys acanthura (ILLIGER, 1806) *

Southern Portugal, rare, 3 records. Host(s) unknown.

M a t e r i a l : Algarve, Aljezur, Azenha, offN120, 29.ix.2014, 1♀, det. & leg. Cross
Algarve, Barragem de Bravura, 24.vii.2015, 1♀, det. & leg. Cross
Algarve, Praia do Amado, 13.viii.2015, 1♂, det. & leg. Cross

Coelioxys afer LEPELETIER, 1841

Widespread, frequent, 22 records. Broodparasite of *Megachile leachella*. There is probably a broad association with *Megachile* (*Eutricharea*) species. One host record for Portugal; Monte da Sinceira, 17.x.2016, at a nest site of *Megachile pilidens*.

M a t e r i a l : DUSMET 1921: Porto, 1♂
DINIZ 1989: 11♂, 9♀♀; Aljustrel; Azenhas do Mar; Carcavelos; Coimbra; Espinho; Estoril; Évora;
Figueira da Foz; Resende
Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

Coelioxys argenteus LEPELETIER, 1841

Widespread, rare, 5 records. Brood parasite of *Megachile* (*Creightonella*) *albisecta*.

M a t e r i a l : DINIZ 1989: 3♂♂, 1♀; Coimbra; Estoril; Soure
Trás-os-Montes, Bragança, Alfândega da Fé, 5.viii.2014, 1♂, det. Baldock, leg. Penado
Beira Litoral, Figueira da Foz, Martinhara, 1.viii.1982, 1♂, leg. R. Constantia, coll. Schwarz
Algarve, Salema, Boca do Rio, 20.vi.2015, 2♂♂, 1♀; 6.vi.2017, 1♂, det. & leg. Cross
Algarve, Burgau, Barrancão, 4.vi.2017, 1♂, det. & leg. Cross

Coelioxys brevis EVERSMANN, 1852

Southern Portugal, scarce, 16 records. Broodparasite of *Megachile leachella*. There is probably a broad association with *Megachile* (*Eutricharea*) species.

M a t e r i a l : WARNCKE 1992: Portugal
Baixo Alentejo, Algarve

Coelioxys caudatus SPINOLA, 1838

M a t e r i a l : WARNCKE 1992: Portugal

***Coelioxys conoideus* (ILLIGER, 1806)**

Widespread, scarce, 10 records. Broodparasite of *Megachile maritima* and *Megachile lagopoda*.

M a t e r i a l : DUSMET 1921: Buçaco, 1♂; Porto, 1♀
DINIZ 1989: 5♂♂, 6♀♀; Coimbra; Figueira da Foz; Gouveia; Montemor-o-Velho; Sintra; Vouzela
Minho, Barcelos, Gilmonde, 3.ix.2014, 1♀, det. Baldock, leg. R. Andrade
Beira Alta, Gouveia, Paços de Serra, 26.vii.1986, 1♀, det. Baldock. MNHNC, coll. Mendoça
Estremadura, Sobreira, 15.viii-5.ix.1985, 1♀, det. D. Peters, leg. Cölln, Risch, Sorg
Estremadura, Nazaré, north dunes, 18.viii.2015, 1♂, det. & leg. A. Livory & R. Coulomb
Estremadura, São Martinho do Porto, 21.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb
Baixo Alentejo, Vila Nova de Milfontes, 11.vii.1972, 1♀, det. Baldock. MNHNC, coll. Mendoça
Algarve, Aljezur, Odceixe, 29.vi.2010, 1♂, 1♀, det. & leg. A. Livory & R. Coulomb
Algarve, Carrapateira, 4/13.x.2016, 2♀♀, det. & leg. Cross
Algarve, Amoreira, 30.x.2016, 1♀, det. & leg. Cross

***Coelioxys coturnix* PÉREZ, 1884**

Iberia, France, North Africa and Arabia. Central and Southern Portugal, scarce, 10 records.
Host(s) unknown. Probable broodparasite of *Megachile* (*Eutricharea*) species.

M a t e r i a l : DINIZ 1989: 9♂♂, 5♀♀; Aljustrel; Caparica; Condeixa-a-Velha; Monte Gordo;
Portimão; Soalheira; Trafaria
Beira Litoral, Barra, near Aveiro, 12.vi.2016, 1♀, det. & leg. A. Livory & R. Coulomb
Baixo Alentejo, Zambujeira do Mar, 17.vii.2012, 1♀, det. Livory, leg. A. Livory & R. Coulomb
Baixo Alentejo, Mértola, Mina da São Domingos, 3.vi.2016, 1♂, det. & leg. A. Livory & R. Coulomb;
3.v.2017, 1♂, det. & leg. Cross
Algarve, Salema, Boca do Rio, 22.vi.2015, 1♂, det. & leg. Cross
Algarve, Amoreira, 26.vi.2015, 1♂; 8.vi.2017, 1♂, both det. & leg. Cross
Algarve, Alvor, Cruzinha, 8.vii.2015, 1♂, det. Wood, leg. J. D'Haeseleer
Algarve, Silves, Barragem do Arade, 14.viii.2015, 1♂, det. & leg. Cross
Algarve, Burgau, Barrancão, 4.vi.2017, 1♂, det. & leg. Cross

***Coelioxys echinatus* FÖRSTER, 1853**

Central and Southern Portugal, scarce, 9 records. Host(s) unknown. Probable broodparasite of *Megachile* (*Eutricharea*) species.

M a t e r i a l : DINIZ 1989: (as *Coelioxys rufocaudata* SMITH) 8♂♂, 3♀♀; Aljustrel; Cascais; Coimbra;
Estoril; Fundão; Vila Real de Santo António
Estremadura, Alcobaça, 15.ix.1998, 1♂, det. Le Goff, leg. M. Jenner
Estremadura, Alcochete, Samouco, 19.ix.1998, 1♀, det. Le Goff, leg. M. Jenner
Baixo Alentejo, Mértola, Mina da São Domingos, 3.vi.2016, 1♀, det. & leg. A. Livory & R. Coulomb
Algarve, Alvor, 22.vii.2012, 1♀, det. Livory/Baldock, leg. A. Livory & R. Coulomb
Algarve, Silves, 22.vii.2014, 1♂, det. & leg. Baldock
Algarve, Monchique, Vale da Figueira, 27.vi.2015, 1♀, det. & leg. Cross
Algarve, Praia do Amado, 13.viii.2015, 1♂, det. & leg. Cross
Algarve, Carrapateira, 4.x.2016, 1♀, det. & leg. Cross
Algarve, Amoreira, 23.v.2017, 1♂, det. & leg. Cross

***Coelioxys elongatus* LEPELETIER, 1841**

Central and Southern Portugal. Broodparasite of medium sized *Megachile* species such as *Megachile willughbiella*.

M a t e r i a l : DINIZ 1989: 4♂♂, 2♀♀; Coimbra; Oeiras; Resende; Sintra; Viseu

***Coelioxys haemorrhoa* FÖRSTER, 1853**

Central and Southern Portugal, scarce, 6 records. The host in Portugal is *Megachile apicalis* based on 2 host records; Amoreira, 17.ix.2016, hovering in front of nests of *Megachile apicalis* in the blockwork of a ruined building and Carrapatiera, 30.ix.2016, entering a *Megachile apicalis* nest in dead wood.

M a t e r i a l : DINIZ 1989: Aljustrel; Caparica; Condeixa-a-Velha; Monte Gordo; Portimão; Soalheira; Trafaria

Algarve, Pêra, Praia Grande, 29.vi.2015, 1♀, det. & leg. Cross

Algarve, Salema, Boca do Rio, 2.viii.2015, 1♀, det. & leg. Cross

Algarve, Praia do Amado, 13.viii.2015, 1♀, det. & leg. Cross

Algarve, Salema, Praia da Figueira, 21.ix.2015, 1♀, det. & leg. Wood

Algarve, Amoreira, 17.ix.2016, 1♀, det. & leg. Cross

Algarve, Carrapateira, 30.ix.2016, 1♀, det. & leg. Cross

***Coelioxys inermis* (KIRBY, 1802)**

Widespread, scarce, 11 records. Broodparasite of medium-small sized *Megachile* species such as *Megachile centuncularis*.

M a t e r i a l : WARCKE 1992: Portugal

Douro Litoral, Amarante, Chapa, 9.ix.2016, 1♂, det. & leg. Cross

Estremadura, Torres Vedras, Turcifal, 16.v.2013, 1♂, det. Le Goff, leg. C. Reis

Algarve, Carrapateira, 17.ix.2015, 1♀, det. & leg. Wood; 4/14.x.2016, 2♀♀, det. & leg. Cross; 24.iv.2017, 1♂, det. & leg. Cross

Algarve, Salema, Boca do Rio, 20/21.ix.2016, 3♂♂, 3♀♀; 11.xi.2016, 1♀, det. & leg. Cross

Algarve, Barragem de Bravura, 24.ix.2016, 1♀, det. & leg. Cross

Algarve, Amoreira, 1.vi.2017, 1♀, det. & leg. Cross

***Coelioxys obtusus* PÉREZ, 1884**

Central and Southern Portugal, rare, 2 records. Host(s) unknown. Probable broodparasite of *Megachile* (*Eutricharea*) species.

M a t e r i a l : DINIZ 1989: 6♂♂, 3♀♀; Coimbra, Figueira da Foz, Lisboa, Viseu

Algarve, Alcoutim, 3.viii.1924, 4♀♀, det. & leg. Warncke, coll. Schwarz

Algarve, Amoreira, 6/10.viii.2015, 2♂♂, 1♀, det. & leg. Cross

***Coelioxys osmiae* ALFKEN, 1928 ***

Previously Spain, Algeria and Tunisia. Southern Portugal, rare, 1 record. Host(s) unknown.

M a t e r i a l : Algarve, Silves, 10.vi.2011, 1♀, det. Le Goff, leg. Baldock

***Coelioxys polycentris* FÖRSTER, 1853**

M a t e r i a l : WARCKE 1992: Portugal

***Coelioxys quadridentatus* (LINNAEUS, 1758)**

Central Portugal, rare, 1 record. Broodparasite of *Anthophora* and *Megachile* species such as *Anthophora quadrimaculata* and *Megachile willughbiella*, with the latter collected with it at its most recent place of capture.

Materia: DINIZ 1960: Portugal
DINIZ 1989: 4♂♂, 2♀♀; Castelo Branco, Coimbra, Resende
WARNCKE 1992: (as *Coelioxys conica* LINNAEUS) Portugal
Beira Litoral, Leiria, Marinha Grande, São Pedro de Moel, 14.iv.1997, 1♂, det. Le Goff, leg. M. Jenner

Genus *Megachile* LATREILLE, 1802

27 species. Published pollen preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2004).

***Megachile (Creightonella) albisepta* (KLUG, 1817)**

Widespread, frequent, 17 records. No published pollen preferences, but probably polylectic.

Materia: DUSMET 1931: Coimbra; Mitra, 1♂
Trás-os-Montes, Beira Litoral, Estremadura, Alto Alentejo, Algarve

***Megachile (Chalicodoma) albonotata* (RADOSZKOWSKI, 1886)**

Southern and Northern Portugal, rare, 1 record. No published pollen preferences, but probably polylectic. The one available Portuguese pollen load contained Fabaceae and *Echium*.

Materia: ORTIZ-SÁNCHEZ, ORNOSA & TORRES 2012: Algarve, Salema, 31.iii.1997, 1♀;
Guadalupe, 7.iv.1997, 3♂♂, 4♀♀, all leg. P. Hartmann
Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♀, det. & leg. Wood, confirmed Le Goff

***Megachile apicalis* SPINOLA, 1808 ***

Widespread, common, 51 records. Polylectic.

Materia: Ribatejo, Santarem, 13.ix.1970, 1♀, det. Baldock. MNHNC, coll. Mendoça
Trás-os-Montes, Beira Alta, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Megachile centuncularis* (LINNAEUS, 1758)**

Widespread, frequent, 29 records. Polylectic.

Materia: KUHLMANN 1996: Serra da Estrela, Vale do Zêzere, viii.1987, 1♂, det. Warncke
Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto
Alentejo, Algarve

***Megachile circumcincta* KIRBY, 1802**

Southern Portugal. Polylectic.

Materia: WESTRICH 2008: Algarve, Salir, 30.iv.2006, 1♀

***Megachile deceptoria* PÉREZ, 1890 ***

Southern Portugal, rare, 5 records. No published pollen preferences, but probably polylectic.

Materia: Algarve, Monchique, 10.ix.2008, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Aljezur, Odeceixe, 9.vii.2009, 1♂; 25.vii.2010, 1♂ 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, Santa Luiza, 30.v.2016, 2♀♀, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Tavira, Cabanas, 31.v.2016, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

***Megachile (Pseudomegachile) ericetorum* LEPELETIER, 1841**

Widespread, rare, 3 records. Polylectic.

M a t e r i a l : ORTIZ-SÁNCHEZ, ORNOSA & TORRES 2012: Tavira, 2.viii.2010, 1♂; Monchique, 29.vii.2010, 1♂, both det. Le Goff, leg. A. Livory & R. Coulomb
Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♂, det. & leg. Wood
Trás-os-Montes, Bragança, Reconço, 3.vii.2016, 1♂, det. & leg. Wood
Estremadura, Lisboa, Institute of Agronomy, Horta, 16.vi.2016, 1♂, det. Baldock, leg. M. Carvajal

***Megachile fertoni* PÉREZ, 1896 ***

Widespread, scarce, 8 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 10.viii.2014, 1♂, det. Le Goff, leg. Penado
Estremadura, Lisboa, Horta, 18.vii.2016, 1♂, det. Le Goff, leg. M. Carvajal
Algarve, Alvor, 2.vi.1987, 1♂, det. Le Goff, leg. H. Tussac
Algarve, Aljezur, Odeceixe, 9.vii.2009, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Abicada, 8.vi.2015, 1♂; 8.vii.2015, 1♂, both det. Le Goff, leg. J. D'Haeseleer
Algarve, Pêra, Praia Grande, 17.vi.2015, 1♀, det. Le Goff, leg. Cross
Algarve, Carrapateira, 17.ix.2015, 1♂, det. Le Goff, leg. Wood

***Megachile giraudi* GERSTÄCKER, 1869 ***

Southern Portugal, scarce, 13 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : Algarve, Armação de Pêra cliffs, 20.iv.2005, 1♂, det. Le Goff, leg. Baldock
Algarve, Guia, 27.iv.2008, 1♂, det. Le Goff, leg. Baldock
Algarve, Silves, 20.iv.2012, 1♂, det. Le Goff, leg. Baldock
Algarve, Carvoeira, Benagil, 6.iv.2014, 1♂, det. Le Goff, leg. Wood
Algarve, Zavial, 18.iv.2014, 1♂, 1♀, det. & leg. Le Goff
Algarve, Bordeira, 24.iv.2014, 1♀, det. & leg. Le Goff
Algarve, Salema, Boca do Rio, 9/27.iv.2016, 4♂♂, 1♀, det. & leg. Cross
Algarve, Moncarapacho, Cerro do Cabeça, 25.iv.2016, 1♂, 1♀, det. Le Goff, leg. Wood
Algarve, Cerro do Santo Miguel, 28.iv.2016, 1♀, det. Le Goff, leg. Wood
Algarve, Carrapateira, 26.iv.2016, 1♀, det. & leg. Cross
Algarve, Salema, 10.v.2016, 1♀, det. Le Goff; 28.iv.2017, 1♂, det. Cross, both leg. Cross
Algarve, Cabanas Velhas, 28.iv.2017, 1♀, det. Le Goff, leg. Cross

***Megachile lagopoda* (LINNAEUS, 1861)**

Central and Northern Portugal, scarce, 11 records. Polylectic.

M a t e r i a l : DUSMET 1931: Mata do Urso, 1♂
DINIZ 1959: Buarcos, Jugeiros
KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 29.vii.1990, 1♂, det. Warnecke
Beira Litoral, Leiria, 20.ix.1998, 1♀, det. Le Goff, leg. M. Jenner
Beira Alta, Gouveia, Paços de Serra, 20.vii.1974, 1♂; 22/25.vii.1986, 2♀♀, det. Baldock. MNHNC, coll. Mendoza
Estremadura, Cabo Espichel, 4.v.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb
Estremadura, Nazaré, north beach, 18.viii.2015, 2♀♀, det. & leg. A. Livory & R. Coulomb

Estremadura, São MARTINHO do Porto, 20.viii.2015, 2♂♂, 1♀, det. & leg. A. Ivory & R. Coulomb
Estremadura, Institute of Agronomy, Horta, 21.vi.2016, 1♂, det. Baldock, leg. M. Carvajal
Ribatejo, Santarem, Fátima, 11.ix.1972, 1♂; 13.vii.1974, 1♀; 12.ix.1974, 1♀, det. Baldock. MNHNC,
coll. Mendoça

***Megachile leachella* CURTIS, 1828 (=*Megachile dorsalis* PÉREZ)**

Widespread, frequent, 26 records. Polylectic.

M a t e r i a l : DINIZ 1959: Almodovar, Lagos
KUHLMANN 1996: Serra da Estrela, Vale do Zézere, viii.1987, 1♀, det. Warncke
Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Algarve

***Megachile (Chalicodoma) lefebvrei* LEPELETIER, 1841**

Southern and Northern Portugal, rare, 2 records. No published pollen preferences, but probably polylectic with a preference for Lamiaceae (PRAZ 2017). *Phlomis purpurea* is the only confirmed Portuguese pollen source.

M a t e r i a l : DUSMET 1921: Famalicão, 1♀
Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 1♂, 2♀♀, det. Le Goff/Wood, leg. Wood
Algarve, Cerro de Santo Miguel, 28.iv.2016, 1♀, det. & leg. Wood

***Megachile marginata* SMITH, 1853 (=*Megachile picicornis* MORAWITZ)**

Southern Portugal, rare, 4 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : DUSMET 1921: Elvas, 2♀♀
Algarve, Carvoeiro, 18.vi.1988, 1♀, det. Le Goff, leg. J.W. Ismay
Algarve, Guia, 4.v.2002, 1♀; 15.vii.2009, 2♂♂, both det. Le Goff, leg. Baldock
Algarve, Pêra dunes, 23.vi.2014, 1♂, 1♀, det. Le Goff, leg. Baldock

***Megachile maritima* (KIRBY, 1802) ***

Widespread, frequent, 18 records. Polylectic.

M a t e r i a l : Estremadura, Cascais, Praia de Guincho, 21.viii.1964, 1♂, det. Baldock. MNHNC, coll.
Mendoça
Trás-os-Montes, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Megachile melanopyga* COSTA, 1863 ***

Widespread, frequent, 23 records. Polylectic.

M a t e r i a l : Estremadura, Caparica, 25.vi.1964, 1♀, det. Baldock. MNHNC, coll. Mendoça
Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Algarve

***Megachile (Chalicodoma) parietina* (GEOFFROY, 1785)**

Southern Portugal, rare, 1 record. No published pollen preferences, but probably polylectic. The status of *Megachile baetica* and *Megachile parietina* is currently unclear and under investigation, with the two forms being weakly differentiated in Spain (Praz, pers. comm.).

M a t e r i a l : Baixo Alentejo, Castro Verde, 29.iii.2017, 1♂, det. Le Goff, leg. M. Jenner

ssp. *baetica* (GERSTÄCKER, 1869)

West-Mediterranean subspecies or colour form.

M a t e r i a l : ORTIZ-SÁNCHEZ, ORNOSA & TORRES 2012: Algarve, Carrapateira, Cabo Portal, 4.iv.1997, 2♂♂; Salema, 7.iv.1997, 3♀♀, all leg. P. Hartmann

***Megachile octosignata* NYLANDER, 1852 ***

Widespread, scarce, 9 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : Minho, Viana do Castelo, Melgáço, Castro Laboreiro, 9.vi.2016, 1♂, det. Le Goff, leg. R. Andrade

Beira Alta, Manteigas, Vale do Zêzere, 25.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb

Algarve, Monchique, 29.vii.2010, 1♀, det. Baldock/Le Goff, leg. A. Livory & R. Coulomb

Algarve, Barragem de Bravura, 12.ix.2016, 1♂, det. Le Goff; 24.ix.2016, 1♀, det. Cross, both leg. Cross

Algarve, Vila do Bispo, Praia do Cordama, 29.ix.2016, 1♀, det. & leg. Cross

Algarve, Budens, Monte de Sinceira, 5.x.2016, 1♀, det. & leg. Cross

Algarve, Carrapateira, 13/19.x.2016, 2♀♀, det. & leg. Cross

***Megachile opacifrons* PÉREZ, 1897 ***

Previously known only from Spain, France and Morocco.

M a t e r i a l : Southern Portugal, rare, 1 record. No published pollen preferences, but probably polylectic.

Algarve, Guia, 4.v.2002, 1♀, det. Ortiz-Sánchez/Praz/Le Goff, leg. Baldock

***Megachile pilidens* ALFKEN, 1924**

Widespread, common, 38 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 20-31.vii.1990, 5♂♂, 2♀♀, det. Warncke

Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Megachile pusilla* PÉREZ, 1884 (=*Megachile atratula* REBMANN)**

West-Mediterranean. Central and Southern Portugal, scarce, 6 records. No published pollen preferences, but probably polylectic. This species has been confused with true *Megachile concinna* SMITH which is found in Africa (SOLTANI et al. 2017).

M a t e r i a l : PÉREZ 1883: Portugal

Estremadura, Sobreda, 26.v-12.ix.1985, 2♀♀, det. D. Peters, leg. Cölln, Risch, Sorg

Baixo Alentejo, Almograve, 21.v.2012, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Lagos, Luz, 6.vi.2001, 1♂, 1♀, det. Le Goff, leg. G.W. Allen

Algarve, Aljezur, Odeceixe, 12.x.2009, 1♀, det. Le Goff, leg. Baldock

Algarve, Alvor, 13.x.2009, 1♀, det. Le Goff, leg. Baldock

Algarve, Silves, 12.vi.2011, 1♀, det. Le Goff, leg. Baldock

***Megachile pyrenaea* PÉREZ, 1890 ***

Central Portugal, rare, 1 record. Polylectic.

M a t e r i a l : Estremadura, Nazaré, north beach, 18.viii.2015, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

***Megachile (Chalicodoma) pyrenaica* LEPELETIER, 1841**

Widespread, scarce, 12 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : WESTRICH 2008: Salir, iv.2006, 1♂

Trás-os-Montes, Bragança, Alfândega da Fé, 20.iv-27.v.2015, 2♂♂, 2♀♀, det. Wood, leg. Penado

Trás-os-Montes, 1km N of Bragança, 29.vi.2016, 1♀, det. & leg. Wood

Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♀, det. & leg. Wood

Trás-os-Montes, PN de Douro Internacional, SW of Salto de Saucelle, 7.iv.2017, 1♂, det. Le Goff, leg. M. Jenner

Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 2♀♀, det. & leg. A. Livory & R. Coulomb

Beira Alta, Manteigas, 16.vi.2016, 1♂, det. & leg. A. Livory & R. Coulomb

Baixo Alentejo, Castro Verde, 30.iii.2017, 1♀, det. Le Goff, leg. M. Jenner

Baixo Alentejo, Portalegre, PN de Serra São Mamade, 3♂♂, det. Le Goff, leg. M. Jenner

Baixo Alentejo, Mértola, 15 km S, 17.iv.2017, 2♂♂, det. & leg. Baldock

Algarve, Silves, 20.iv.2012, 1♂, det. Le Goff, leg. Baldock

Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 2♀♀, det. & leg. Wood

Algarve, Barragem de Bravura, 30.iii.2017, 2♂♂, det. & leg. Cross

***Megachile rotundata* (FABRICIUS, 1793)**

Widespread, scarce, 8 records. Polylectic.

M a t e r i a l : DUSMET 1931: Coimbra

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 29.vii.1990, 1♂, det. Warncke

Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♀, det. Le Goff, leg. Wood

Baixo Alentejo, Mértola, 2.vi.2016, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Lagoa, Sesmarias, 22.v.1996, 1♀, det. Le Goff, leg. D. Keen

Algarve, Monchique, 10.ix.2008, 1♂; det. Le Goff, leg. A. Livory

Algarve, Aljezur, Odeceixe, 9.vii.2009, 3♀♀; 24.vii.2010, 3♀♀, all det. Le Goff, leg. A. Livory

Algarve, Mexilhoeira Grande, 23.iv.2016, 3♂♂, det. Le Goff, leg. J. D'Haeseleer

Algarve, Abicada, 8.vi.2015, 1♀, det. Le Goff, leg. J. D'Haeseleer

***Megachile (Chalicodoma) sicula* (ROSSI, 1792)**

Central and Southern Portugal, frequent, 16 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : DUSMET 1931: Évora, 1♀

Estremadura, Alto Alentejo, Algarve

***Megachile thevestensis* FERTON, 1909 ***

Northern Portugal, rare, 1 record. No published pollen preferences, but probably polylectic.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 15.vii.1994, 1♀, leg. G. Seidler

***Megachile versicolor* SMITH, 1844 ***

Central and Southern Portugal, scarce, 7 records. Polylectic.

M a t e r i a l : Estremadura, Sobreda, 24.v-14.x.1985, 4♂♂, det. D. Peters, leg. Cölln, Risch, Sorg

Estremadura, Sesimbra, 3.vi.2011, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

Estremadura, Torres Vedras, vii.2013, 2♂♂, 3♀♀, det. Le Goff, leg. C. Reis

Alto Alentejo, Évora, 26.ix.2014, 1♂, det. Le Goff, leg. A. Livory
Baixo Alentejo, Vila Nova de Milfontes, 20.ix.2014, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Odeceixe, 24.v.2011, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb
Algarve, Carrapateira, 17.ix.2014, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

***Megachile willughbiella* (KIRBY, 1802)**

Widespread, scarce, 10 records. Polylectic.

M a t e r i a l : WESTRICH 2008: Algarve, Salir, iv.2006, 1♂, 1♀
Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♀, det. Le Goff, leg. Wood
Beira Litoral, Leiria, São Pedro de Moel, 14.iv.1997, 1♂; 17.iv.1997, 1♀, det. Le Goff, leg. M. Jenner
Estremadura, Lisboa, 20.v.1972, 1♀, det. Baldock. MNHNC, coll. Mendoça
Estremadura, Monte Redondo, 25.vi.1996, 1♂, det. Le Goff, leg. M. Jenner
Estremadura, Lisboa, Institute of Agronomy, 18/20.v.2016, 1♂, 1♀, det. Baldock, leg. M. Carvaljal
Estremadura, Corroios, 2-26.v.2016, 2♂♂, 1♀, det. Wood, leg. Penado
Ribatejo, Torres Novas, 30.iv.2014, 1♂, det. Baldock, leg. M. Jenner
Algarve, Santa Catarina de Fonte do Bispo, 4.v.2005, 1♀, leg. Smit

A p i d a e

XYLOCOPINI

Genus *Xylocopa* LATREILLE, 1802

5 species.

***Xylocopa amedaei* LEPELETIER, 1841 ***

North-west Africa and Iberia. Southern Portugal, rare, 1 record. No published pollen preferences, but probably polylectic.

M a t e r i a l : Algarve, Lagos, Moinhos Velhos, Barragem da Bravura, 15.iv.2014, 1♂, 1♀, det. & leg. Le Goff

***Xylocopa cantabrita* LEPELETIER, 1841**

Iberia, France and Morocco. Widespread, frequent, 22 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : DINIZ 1959: Almendres, Coimbra

WESTRICH 2008: Salir, iv.2006, 1♂, 1♀

Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Ribatejo, Alto Alentejo, Algarve

***Xylocopa iris* (CHRIST, 1791) spp. *uclesiensis* PÉREZ, 1901**

Iberian endemic subspecies. Southern and Northern Portugal, frequent, 16 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : TERZO & RASMONT 1997a: Portugal

Minho, Trás-os-Montes, Baixo Alentejo, Algarve

***Xylocopa valga* GERSTÄCKER, 1872**

Central and Southern Portugal.

M a t e r i a l : ORTIZ-SÁNCHEZ & TERZO 2004: Beja, 1♀, Universidad de Coimbra; Coimbra, Ponte de Pontela, 3♂♂, Diniz, pers. comm.

***Xylocopa violacea* (LINNAEUS, 1758)**

Widespread, common, 47 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: Picota, Monchique, 20.v.1880, 1♂, A.E. Eaton

DUSMET 1921: Elvas, 1♀

DUSMET 1931: Porto, Aldeia Nova de São Bento, 3♂♂, 2♀♀

WESTRICH 2008: Salir, iv.2006, 1♂, 1♀

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 3.vi.1989, 1♀

Trás-os-Montes, Douro Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

CERATINI

Genus *Ceratina* LATREILLE, 1802

12 species.

[*Ceratina acuta* FRIESE, 1896]

M a t e r i a l : DUSMET 1931: Mitra, 1♀

TERZO & ORTIZ-SÁNCHEZ 2004 consider this record to be a misidentification and that the species does not occur in Iberia]

***Ceratina callosa* (FABRICIUS, 1794)**

Central and Southern Portugal, rare, 5 records. Polylectic.

M a t e r i a l : GERSTÄCKER 1869: Portugal

DUSMET 1931: Mitra, 1♀

DINIZ 1959: Coimbra

TERZO & ORTIZ-SÁNCHEZ 2004: Central and Southern Portugal

Beira Alta, Manteigas, Vale do Zêzere, 25.viii.2015, 2♂♂, det. & leg. A. Livory & R. Coulomb
Estremadura, Sobreida, 13.vi-12.vii.1985, 2♂♂, 1♀, leg. Cölln, Risch, Sorg

Algarve, Guia, 15.vii.2009, 1♂, 1♀, det. & leg. Baldock

Algarve, Vila Real de St. António, 28.vii.2011, 1♀, leg. Smit

Algarve, Cacela Velha, 23.iv.2017, 1♂, det. & leg. Cross

***Ceratina chalcites* GERMAR, 1839**

Widespread, scarce, 10 records. Polylectic.

M a t e r i a l : ILLIGER 1806: (as *Megilla chalcites* ILLIGER) Portugal

DUSMET 1931: Évora, 1♀

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500 m, 23.vii.1990, 1♀

TERZO & ORTIZ-SÁNCHEZ 2004: Northern Portugal

Trás-os-Montes, Bragança, Alfândega da Fé, 17.v.2014, 1♀; 23.v-20.viii.2015, 1♂, 5♀♀; 22.vi.2016, 1♂,
det. Baldock/Wood, leg. Penado

Trás-os-Montes, 1km N of Bragança, 29.vi.2016, 1♂, det. & leg. Wood

Trás-os-Montes, 3km N.E. of Varge, 3.vii.2016, 1♀, det. & leg. Wood
 Trás-os-Montes, Bragança, Montesinho, 29.vi.2016, 1♂, 1♀, det. & leg. Wood
 Trás-os-Montes, Bragança, Vilarinho, 1.vii.2016, 1♂, det. & leg. Wood
 Beira Alta, Manteigas, Vale do Zêzere, 25.viii.2015, 3♀♀, det. & leg. A. Ivory & R. Coulomb
 Algarve, Faro, Bordeira, 20.ix.2010, 1♂, det. Baldock, leg. H. Whiteley
 Algarve, Tavira, 26.v.2012, 1♂, det. & leg. A. Ivory & R. Coulomb

***Ceratina chalybea* CHEVRIER, 1872**

Widespread, scarce, 10 records. Polylectic.

M a t e r i a l : TERZO & ORTIZ-SÁNCHEZ 2004: Widespread in Portugal
 Trás-os-Montes, Bragança, Montesinho, 29.vi.2016, 1♀, det. & leg. Wood
 Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♀, det. & leg. Wood
 Trás-os-Montes, Bragança, Zeive, 1.vii.2016, 3♀♀, det. & leg. Wood
 Beira Alta, Viseu, Leonil, 7.vii.2013, 1♀, det. Baldock, leg. R. Andrade
 Estremadura, Cabo Espichel 4.vi.2011, 1♂, 2♀♀, det. & leg. A. Ivory & R. Coulomb
 Baixo Alentejo, Milfontes, Odemira, 28.v.1987, 1♂, 1♀, det. Baldock, leg. H. Tussac
 Algarve, Monchique, 29.vii.2010, 2♂♂, det. & leg. A. Ivory & R. Coulomb
 Algarve, Foz de Odeleite, 28.vii.2011, 1♂, leg. Smit
 Algarve, Silves, 18.vi.2014, 1♀, det. & leg. Baldock
 Algarve, Vilarinha, 16.iv.2017, 1♂, det. & leg. Cross

***Ceratina cucurbitina* (ROSSI, 1792)**

Widespread, common, 84 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: (as *Ceratina albilabris* FABRICIUS) Monchique at elevation of 2050 feet, 21.v.1880; high hill northwest of Vila Real, 21.vi.1880, 4♂♂, 4♀♀, all leg. A.E. Eaton
 DUSMET 1921: Buçaco, 1♀; Évora, 1♀; Famalicão, 2♀♀; Porto, 1♂
 DINIZ 1960: Monchique; Vila Real de Santo António
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500 m, 1-7.vi.1989, 14♀♀; Vale do Zêzere, 25.vii.1990, 1♂
 TERZO & ORTIZ-SÁNCHEZ 2004: Widespread in Portugal
 Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Ceratina cyanea* (KIRBY, 1802)**

Widespread, common, 58 records. Polylectic.

M a t e r i a l : DUSMET 1931: Serra da Meia Via, 1♂ (as *Ceratina acuta* FRIESE, misidentification, Terzo pers. comm.)
 DINIZ 1959: Mira (as *Ceratina acuta*, misidentification, Terzo pers. comm.)
 KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 18-31.vii.1990, 2♂♂, 2♀♀; Vale do Zêzere, 25.vii.1990, 1♀
 TERZO & ORTIZ-SÁNCHEZ 2004: Widespread in Portugal
 WESTRICH 2008: Salir, iv.2006, 1♂, 1♀
 Trás-os-Montes, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Ceratina dallatorreana* FRIESE, 1896**

Widespread, scarce, 16 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : TERZO & ORTIZ-SÁNCHEZ 2004: Algarve and Estremadura
 Trás-os-Montes, Estremadura, Ribatejo, Algarve

***Ceratina dentiventris* GERSTÄCKER, 1869**

Widespread, rare, 2 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : DUSMET 1931: Soure, 1♀

DINIZ 1959: Mira

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 31.vii.1990, 1♂

TERZO & ORTIZ-SÁNCHEZ 2004: Northern Portugal

Trás-os-Montes, Bragança, Alfândega da Fé, 21-27.viii.2015, 3♂♂, det. Wood, leg. Penado

Baixo Alentejo, Mértola, 17.iv.2017, 1♀, det. Le Goff, leg. Baldock

***Ceratina gravidula* GERSTÄCKER, 1869**

Central and Northern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : TERZO & ORTIZ-SÁNCHEZ 2004: Figueira da Foz, near Coimbra, 5.viii.1968, 1♀, leg.

M.A. Diniz

Trás-os-Montes, Moimenta, hills E of, 2.vii.2016, 2♀♀, det. Le Goff, leg. Wood

***Ceratina mocsaryi* FRIESE, 1896**

Widespread, scarce, 9 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : DUSMET 1921: Buçaco, 1♂; Évora, 1♀

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 18.vii.1990, 1♂

TERZO & ORTIZ-SÁNCHEZ 2004: Widespread in Portugal

Trás-os-Montes, Bragança, Alfândega da Fé, 21.v-23.viii.2015, 6♀♀, det. Wood, leg. Penado

Beira Alta, Manteigas, Vale do Zêzere, 25.viii.2015, 1♂, 1♀, det. & leg. A. Livory & R. Coulomb

Estremadura, Sesimbra, 14.v.2012, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

Estremadura, Nazaré, 18.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb

Baixo Alentejo, Mina de São Domingos, 3.v.2017, 2♂♂, det. & leg. Cross

Algarve, Foz de Odeleite, 28.vii.2011, 1♂, leg. Smit

Algarve, Moncarapacho, Cerro da Cabeça, 25.iv.2016, 1♂, det. & leg. Wood

Algarve, Monte Gordo, Praia do Cabeço, 26.iv.2016, 2♂♂, det. & leg. Wood

Algarve, Burgau, Barrancão, 20.iv.2017, 1♀, det. & leg. Cross

***Ceratina nigrolabiata* FRIESE, 1896**

Widespread, rare, 5 records. Polylectic.

M a t e r i a l : DUSMET 1921: Évora, 1♀

KUHLMANN 1996: Serra da Estrela, Vale de Candieira 1400 m, 2.viii.1990, 1♀; Penhas da Saúde 1500m, 7.vi.1989 1♀; 18-31.vii.1990, 1♂, 4♀♀

TERZO & ORTIZ-SÁNCHEZ 2004: Widespread in Portugal

Trás-os-Montes, Bragança, Alfândega da Fé, 23.vii.2015, 1♂, det. Wood, leg. Penado

Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 1♀, det. & leg. Wood

Beira Alta, Serra da Estrela, x.2014, 1♀, det. Baldock, leg. A. Gonçalves

Estremadura, Sobreda, 5.v-14.x.1985, 1♂, 10♀♀, leg. Cölln, Risch, Sorg

Estremedura, Torres Vedras, A dos Cunhados, 19.ix.2013, 1♀, det. Le Goff, leg R. Andrade

***Ceratina parvula* SMITH, 1854**

Southern and Northern Portugal, scarce, 10 records. Polylectic.

M a t e r i a l : LE GOFF & TERZO 1999: Faro, Almancil, 5.iv.1983, 1♂, leg. J. Teunissen, NNM

TERZO & ORTIZ-SÁNCHEZ 2004: Algarve and Estremadura

Trás-os-Montes, Bragança, Alfândega da Fé, 20.vi-27.viii.2015, 1♂, 4♀♀; 23.vi.2016, 2♀♀, det. Wood, leg. A. Penado

Baixo Alentejo, São Sebastião dos Carros, 7.v.2017, 1♀, det. & leg. Cross
Baixo Alentejo, Mina de São Domingos, 24.v.2017, field, det. & leg. Cross
Algarve, Guia, 15.vii.2009, 1♀, det. Le Goff, leg. Baldock
Algarve, Vila Real de Santo António, 24.v.2012, 1♀, det. Baldock, leg. A. Livory & R. Coulomb
Algarve, Tavira, Cabanas, 24.vii.2012, 1♂, det. Baldock, leg. A. Livory & R. Coulomb
Algarve, Alvor, Abicada, 15.vii.2015, 1♀, det. Wood, leg. J. D'Haeseleer
Algarve, Barragem de Bravura, 26/27.viii.2015, 2♀♀, det. & leg. Cross

***Ceratina saundersi* DALY, 1983**

Widespread, common, 35 records. No published pollen preferences, but probably polylectic.

M a t e r i a l : TERZO & RASMONT 1997b: Alcoutim, 9.viii.1968, 2♂♂, 20.viii.1968, 1♂, leg. Warncke; Olhão, 22.viii.1968, 1♀, leg. Warncke; Tavira, 30.viii.1984, 1♂, leg. P. van Ooijen

TERZO & ORTIZ-SÁNCHEZ 2004: Central and Southern Portugal

Trás-os-Montes, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

NOMADINI

Genus *Nomada* SCOPOLI, 1770

71 species. Host associations are from Central Europe (WESTRICH 1989; AMIET et al. 2007; SCHEUCHL & WILLNER 2016)

***Nomada accentifera* PÉREZ, 1895 ***

Iberia and north-west Africa. Central and Southern Portugal, rare, 3 records. Host(s) unknown.

M a t e r i a l : Beira Litoral, Coimbra, Pinhal de Marrocos, 23.iv.1968, 1♀, det. Schwarz, leg. M.A. Diniz

Estremadura, Sobreda, Quinta, 12.iv.1984, 2♀♀, 1♂, det. Schwarz, leg. M. Sorg
Baixo Alentejo, Mértola, Alcaria river, 25.iii.2016, 1♂, det. Smit, leg. A. Gonçalves

***Nomada agrestis* FABRICIUS, 1787**

Widespread, common, 31 records. Broodparasite of *Eucera nigrilabris*. This is confirmed for Portugal by records at a site near Lagos, Algarve in March 2016 where *Nomada agrestis* was abundant and entering nests at a *Eucera nigrilabris* aggregation.

M a t e r i a l : DINIZ 1959: Aldeia Nova de São Bento, 1♂; Coimbra, 1♀, both det. Schwarz
Minho, Douro Litoral, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Nomada alboguttata* HERRICH-SCHÄFFER, 1839 ***

Central Portugal, rare, 1 record. Known to attack *Andrena barbilabris* and *Andrena ventralis* but it must have other hosts as neither species has yet been recorded in Portugal.

M a t e r i a l : Estremadura, Trafaria, 15.iii.1997, 1♀, leg. J. Albendus

***Nomada armata* HERRICH-SCHÄFFER, 1839 ***

Northern Portugal, rare, 1 record. Broodparasite of the scabious specialist *Andrena hattorfiana* which, whilst present in northern Spain, has not yet been recorded in Portugal.

M a t e r i a l : Trás-os-Montes, Vila Real, Pedras Salgadas, 10.v.1926, 1♂, det. Smit, leg. J.T. Wattison. BMNH

***Nomada basalis* HERRICH-SCHÄFFER, 1839**

Widespread, common, 101 records. Possible broodparasite of *Andrena* (STANDFUSS & SCHWARZ 2007) or *Eucera* species. Our own observations support an association with *Eucera* (*Heteraecera*) species.

M a t e r i a l : DINIZ 1959: Alferce; Beja; São Marcos
Trás-os-Montes, Beira Litoral, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Nomada beaumonti* SCHWARZ, 1967 ***

West-Mediterranean. Widespread, scarce, 9 records. Host(s) unknown.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fe, 20.iv.2015, 1♂, det. Smit, leg. Penado

Ribatejo, Santarém, Fátima, 9.vi.1972, 1♀, det. Smit/Schwarz. MNHNC, coll. Mendoça

Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♂, 1♀, det. Smit, leg. A. van Harten

Algarve, Pereira, 20.iii.1991, 1♂, det. Schwarz, leg. W. Klein

Algarve, Lagos town walls, 9.iii.2015, 1♂, det. Smit, leg. Cross

Algarve, Moinhos Velhos, 27.iii.2015, 1♂, det. Smit, leg. Cross

Algarve, Portimão, Figueira, 6.iv.2015, 1♂, det. Smit, leg. Wood

Algarve, Alvor, Cruzinha, 9/10.iv.2015, 2♂♂, det. Smit, leg. J. D'Haeseleer

***Nomada bifasciata* OLIVIER, 1811 (= ?*Nomada pusilla* LEPELETIER type apparently lost) ***

Widespread, frequent, 24 records. Broodparasite of *Andrena gravida* and probably other *Andrena* species, with the Portuguese host(s) unknown.

M a t e r i a l : Beira Litoral, Coimbra, 16.iii.1968, 1♂; 27.iii.1968, 1♀; 10.iv.1968, 1♂; 5.vi.1968, 1♂,
all det. Schwarz, leg. M.A. Diniz

Minho, Trás-os-Montes, Beira Litoral, Ribatejo, Algarve

***Nomada bispinosa* MOCSÁRY, 1883 ***

Central Portugal, rare, 1 record. Host(s) unknown.

M a t e r i a l : Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 1♂, det. Dufrêne, leg. A. Livory &
R. Coulomb

***Nomada blepharipes* SCHMIEDEKNECHT, 1882 ***

Widespread, rare, 4 records. Broodparasite of *Andrena hypopolia*.

M a t e r i a l : Beira Litoral, Aveiro, Canelas, Estarreja, 20.vii.2015, 1♂, det. Smit, leg. R. Andrade

Beira Alta, Manteigas, Rio Zêzere, 28.vii.1967, leg. Hamann

Ribatejo, Santarém, 31.vii.1976, 1♀, det. Schwarz. MNHNC, coll. Mendoça

Algarve, Pêra, 6.iv.1966, 1♀, det. Schwarz, leg. M.A. Diniz

***Nomada castellana* DUSMET y ALONSO, 1913 ***

Northern Portugal, rare, 1 record. Broodparasite of *Andrena (Micrandrena)* species.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 1.v.1995, 1♀, det. Smit, leg. G. Seidler

***Nomada carnifex* MOCSÁRY, 1883 ***

Central and Southern Portugal, scarce, 10 records. Host(s) unknown.

M a t e r i a l : Beira Litoral, Coimbra, Pinhal, Leitia, 16.v.1985, 1♀, leg. H. Teunissen

Estremadura, Cascais, 25.iii.1985, 1♂, det. Schwarz, leg. Bohart

Estremadura, Sobreira, Quinta, 12.iv.1985, 1♀, det. Schwarz, leg. M. Sorg

Algarve, Almancil, 5.iv.1983, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Relvos, 1.iv.1987, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Benfarras, 3.iv.1988, 1♀; 3.iii.1989, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Albufeira, 24.iii.1995, 1♀, leg. T. & M. Simon

Algarve, Lagos, Luz, 29.iii.1997, 1♀, leg. P. Hartmann

Algarve, Carrapateira, 5.iv.2014, 1♀, det. Baldock, leg. Wood

Algarve, Lagos, Bensafrim, 5.iii.2016, 1♀, det. Smit, leg. Cross

***Nomada concolor* SCHMIEDEKNECHT, 1882 ***

Central Portugal, rare, 2 records. Host(s) possibly *Andrena* species, Portuguese host unknown.

M a t e r i a l : Estremadura, 29.iii.1953, 1♂, det. Schwarz, leg. N.F. d'Andrade

Estremadura, 29.iii.1953, 3♂♂, det. Schwarz, leg. M.A. Diniz

***Nomada conjungens* HERRICH-SCHÄFFER, 1839 ***

Southern Portugal, scarce, 7 records. Broodparasite of *Andrena (Proxiandrena)* species.

M a t e r i a l : Baixo Alentejo, Mértola, Alcaria river, 25.iii.2016, 1♂, det. Smit, leg. A. Gonçalves

Algarve, São Brás de Alportel, 28.iii.1988, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Monchique, Monte Picota 750m, 3.v.2005, 1♂, det. & leg. Smit

Algarve, Santa Catarina de Fonte do Bispo, 4.v.2005, 1♀, det. & leg. Smit

Algarve, Pêra, 5.v.2005, 1♀, det. & leg. Smit

Algarve, Aljezur, W Vale da Telha, 1-9.v.2016, 1♀, det. Smit, leg. Wood

Algarve, Burgau, Barrancão, 7.iv.2017, 1♂, det. Smit, leg. Cross

***Nomada coronata* PÉREZ, 1895 ***

Iberia and France. Central and Northern Portugal, rare, 3 records. Host(s) unknown.

M a t e r i a l : Douro Litoral, Porto, Leca da Palmeira, 10.viii.1962, 1♂, det. Smit, leg. L. Horacsek,
BMNH

Beira Litoral, Coimbra, 9.v.1963, 1♂; 7.vi.68, 1♀, det. Schwarz, leg. M.A. Diniz

Estremadura, Caparica, Sobreira, 15.vi.1989, 1♀, det. & leg. P. Westrich

***Nomada cristata* PÉREZ, 1895 ***

Iberia and north-west Africa. Central and Southern Portugal, scarce, 7 records. No published host records. The host in Portugal appears to be *Eucera (Synhalonia) alternans* based on observations made at the nest site of this species near Salema on 13.iv.2017.

M a t e r i a l : Beira Litoral, PN das Serras de Aire e Candeeiros, Covão do Feto, 27.iv.2014, 1♂, det.
Smit, leg. M. Jenner

Alto Alentejo, Portalegre, Vaiamonte, iv.2012, 1♂, 1♀, det. Smit, leg. A. van Harten

Algarve, Loulé, 3.v.1983, 1♂, det. Schwarz, leg. H. Teunissen

Algarve, Relvos, 9.iv.1987, 1♂, det. Schwarz, leg. H. Teunissen

Algarve, Lagos, Luz, 29.iii.1997, 1♀, det. Schwarz, leg. P. Hartmann

Algarve, Salema, 14.iv.2016, 1♀, det. Smit, leg. Cross; 13.iv.2017

***Nomada dira* MOCSÁRY, 1882 ***

Central and Southern Portugal, rare, 5 records. Host(s) unknown.

M a t e r i a l : Ribatejo, Santarem, 8.iv.1977, 1♂, det. Smit. MNHNC, coll. Mendoca

Baixo Alentejo, Mértola, Alcaria river, 25.iii.2016, 1♀, det. Smit, leg. A. Gonçalves

Algarve, Santa Bárbara de Nexe, 13.iv.1983, 1♀ det. Schwarz, leg. H. Teunissen

Algarve, Benfarras, 6.v.1985, 1♂, det. Schwarz, leg. H. Teunissen

Algarve, Nave do Barão, 21.iii.1991, 1♂, det. Schwarz, leg. W. Klein

***Nomada discedens* PÉREZ, 1884 ***

Widespread, frequent, 17 records. Host probably *Lasioglossum prasinum* (WESTRICH 2007, TISCHENDORF 2008).

M a t e r i a l : Algarve, Monchique, 1884, 1♀, det. Schwarz, leg. Korb
Douro Litoral, Beira Litoral, Estremadura, Algarve

***Nomada discrepans* SCHMIEDEKNECHT, 1882 ***

Widespread, scarce, 13 records. Host(s) unknown.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 1.v.1995, 1♀, det. Smit, leg. G. Seidler

Minho, Gilmonde, Barcelos, 30.v.2015, 1♂, det. Smit, leg. R. Andrade

Douro Litoral, Amarante 3 km SE, Padronelo, 29.iv.1990, 1♂, det. Schwarz, leg. F. Gusenleitner

Douro Litoral, Povoa de Varzim, 9.iv.1994, 1♂, det. Smit, leg. G. Seidler

Douro Litoral, Mindelo, Gândara Nova, 21.iv.2013, 1♂, det. Smit, leg. A. van Eck

Estremadura, Coimbra, 11.iii.1968, 2♂♂; 23.iii.1968, 1♀; 10.iv.1968, 2♀♀, all det. Schwarz, leg. M.A. Diniz

Estremadura, Sobreda, 5.v-25.vi.1985, 19♀♀, det. Schwarz, leg. Cölln, Risch, Sorg

Algarve, Montembranco, 1.iii.1986, 1♂; det. Schwarz, leg. H. Teunissen

Algarve, Faro, 24.iii.1987, 1♂, det. Schwarz, leg. H. Teunissen

Algarve, Budens, 21.iii.1987, 1♀, det. Schwarz, leg. K.M. Guichard

Algarve, Cacela Velha, 27.iv.2016, 1♂, det. Smit, leg. Wood

***Nomada distinguenda* MORAWITZ, 1874**

Widespread, frequent, 24 records. Broodparasite of *Lasioglossum villosulum*, *Lasioglossum parvulum* and other various small *Lasioglossum* species.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Vale do Zézere, viii.1987, 1♀; Penhas da Sáude 1500m, 18.vii.1990, 1♀

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Nomada dolosa* MOCSÁRY, 1883 ***

Iberia and north-west Africa. Widespread, scarce, 7 records. Host(s) unknown.

M a t e r i a l : Minho, Braga, Fafe, Lagoa, 18.v.1995, 1♀, det. Smit, leg. G. Seidler
Douro Litoral, Amarante, Padroneiro, 29.iv.1990, 1♀, 2♂♂, leg. F. Gusenleitner, det. Schwarz
Douro Litoral, Amarante, Larim, 3.v.1990, 5♀♀, 4♂♂, det. Schwarz, leg. F. Gusenleitner
Trás-os-Montes, Bragança, Alfândega da Fe, 27.iv.2015, 1♂, det. Smit, leg. Penado
Trás-os-Montes, Bragança, 3 km N of Fontes, 1.vii.2016, 2♀♀, det. Smit, leg. Wood
Alto Alentejo, Montemor-o-Novo, 21.v.2011, 1♀, det. Schwarz, leg. A. Albernaz Valente
Algarve, Cerca Velha, 14.v.1982, 1♀, det. Schwarz, leg. H. Teunissen

***Nomada duplex* SMITH, 1854 (= *Nomada cirtana* PÉREZ) ***

West-Mediterranean. Central and Southern Portugal, rare, 2 records. Broodparasite of *Andrena binominata* (AUBERT et al. 2010) which has not yet been recorded in Portugal.

M a t e r i a l : Beira Litoral, Coimbra, 22.iv.1968, 1♀; 27.iii.1969, 1♂, det. Schwarz, leg. M.A. Diniz
Alto Alentejo, Portalegre, Reguengo, 650m, 15.iii.1970, 1♂, det. Schwarz, leg. M.A. Diniz

***Nomada fabriciana* (LINNAEUS, 1767)**

Central Portugal. Broodparasite of *Andrena bicolor* and other medium *Andrena* species.

M a t e r i a l : DUSMET 1921: Buçaco, 1♂

***Nomada facilis* SCHWARZ, 1967 ***

Southern Portugal, rare, 1 record. Possible broodparasite of *Andrena humilis* or *Andrena fulvago*.

M a t e r i a l : Algarve, Caldas de Monchique, 25.iv.2014, 1♂, det. & leg. E. Dufrêne

***Nomada fallax* PÉREZ, 1913 ***

West-Mediterranean. Widespread, common, 33 records. Host(s) unknown.

M a t e r i a l : Algarve, 9.iv.1966, 1♀, det. Schwarz, leg. M.A. Diniz
Trás-os-Montes, Douro Litoral, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Nomada femoralis* MORAWITZ, 1869 ***

Widespread, common, 47 records. Broodparasite of *Andrena (Chlorandrena)* species.

M a t e r i a l : Estremadura, Loures, Bucelas, 17.v.1969, 1♂, det. Smit. MNHNC, coll. Mendoça
Minho, Trás-os-Montes, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

***Nomada fenestrata* LEPELETIER, 1841 (= *Nomada faventiana* PÉREZ) ***

Widespread, rare, 4 records. Host(s) unknown.

M a t e r i a l : Minho, Guimarães, 7.v.1990, 1♀, det. Schwarz, leg. F. Gusenleitner
Estremadura, Sobreira, Quinta, 12.iv.1985, 1♂, det. Schwarz, leg. M. Sorg
Algarve, Gambelas, 16.iii.1988, det. Schwarz, leg. H. Teunissen
Algarve, Quarteira, 15.iii.1980, 1♀, det. Schwarz, leg. H. Teunissen

***Nomada flavoguttata* (KIRBY, 1802) ***

Widespread, frequent, 24 records. Broodparasite of various *Andrena (Micrandrena)* species.

M a t e r i a l : Beira Litoral, Pinhal de Marrocos, Coimbra, 8-27.iii.1968, 2♂♂, 6♀♀, det. Schwarz, leg. M.A. Diniz
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Nomada fucata* PANZER, 1798**

Central Portugal, rare, 3 records. Broodparasite of *Andrena flavipes*.

M a t e r i a l : FRIESE 1921: Portugal

Beira Litoral, Aveiro, Macieira da Alcoba, 13.vii.2009, 1♂, det. Smit, leg. F. Pennicamp & P. Pereira
Estremadura, Portinho, 20.iv.1976, 1♂, det. Smit, leg. J.F. Perkins, coll. BMNH
Estremadura, Setúbal, Arrábida, 1.vi.1982, 1♂, det. Smit, leg. M. Serrano. MNHNC

***Nomada fulvicornis* FABRICIUS, 1793 ***

Widespread, frequent, 23 records. Broodparasite of various large *Andrena* (*Plastandrena*) such as *Andrena pilipes* and *Andrena bimaculata*.

M a t e r i a l : Ribatejo, Santarem, 23.iii.1975, 1♀, det. Smit. MNHNC, coll. Mendoca
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Alto Alentejo, Baixo Alentejo, Algarve

***Nomada furva* PANZER, 1798**

Southern and Northern Portugal, rare, 1 record. Broodparasite of various small *Lasioglossum* species.

M a t e r i a l : DUSMET 1921: Porto, 1♀;

DUSMET, 1931: Aldeia Nova de São Bento, 1♂

Douro Litoral, Amarante, Carneiro, 3.v.1990, 2♂♂, det. Schwarz, leg A. Roth and F. Guseleinertner

***Nomada fuscicornis* NYLANDER, 1848**

Widespread, scarce, 8 records. Broodparasite of *Panurgus calcaratus*.

M a t e r i a l : DUSMET 1921: Estremoz, 1♀

DUSMET 1931: Buçaco, 1♀

DINIZ 1959: Castelo de Vide

Trás-os-Montes, Bragança, 1km S of Rabal, 29.vi.2016, 1♂, det. & leg. Wood

Trás-os-Montes, 3km N.E. of Varge, 3.vii.2016, 1♂, 1♀, det. & leg. Wood

Trás-os-Montes, Bragança, 3km N of Fontes, 1.vii.2016, 1♂, det. & leg. Wood

Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♂, det. & leg. Wood

Estremadura, Corroios, 18.vii.2016, 1♀, det. Wood, leg. Penado

Algarve, Quarteira, 13.iv.1987, 1♂, det. Schwarz, leg. H. Teunissen,

Algarve, Monchique, Monte Picota 750m, 3.v.2005, 1♂, det. & leg. Smit

Algarve, Vale de Pessegueira, 3.v.2005, 3♀♀, det. & leg. Smit

***Nomada glaukopis* PÉREZ, 1890 ***

Widespread, common, 41 records. Host(s) unknown.

M a t e r i a l : Douro Litoral, Resende, 21.iv.1950, 1♂, det. Schwarz, leg. N.F d'Andrade

Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Nomada goodeniana* (KIRBY, 1802) ***

Widespread, scarce, 11 records. Broodparasite of *Andrena (Melandrena)* species.

M a t e r i a l : Portugal, no specific locality known, 1949, 1♀, det. Smit, leg. J.T. Wattison, coll. BMNH

Minho, Braga, Fafe, Rio Ferro, 20.iv.1991, 5♀♀, det. Smit, leg. Schwarz

Minho, Braga, Fafe, Lagoa, 18.ii/4/15.iii.1995, 1♂, 6♀♀, det. Smit, leg. G. Seidler

Ribeiro, Santarem, 20.vi.1976, 1♂; 5.ix.1985, 1♀, det. Smit. MHNHC, coll. Mendoça

Algarve, Carrapateira, 2.v.2005, 1♂, det. & leg. Smit

Algarve, Aljezur, 2.v.2005, 2♂♂, det. & leg. Smit

Algarve, Monchique, 3.v.2005, 5♂♂, det. & leg. Smit

Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♂, det. & leg. Wood

***Nomada guttulata* SCHENCK, 1859 ***

Central and Southern Portugal, rare, 5 records. Broodparasite of *Andrena labiata*.

M a t e r i a l : Beira Litoral, Coimbra, Ponte de Portela, 22.iv.1968, 1♂; 10.v.1968, 1♀, det. Schwarz, leg. M.A. Diniz

Alto Alentejo, Portalegre, 17.iii.1970, 2♂♂, det. Schwarz, leg. M.A. Diniz

Algarve, São Brás de Alportel, 19.iv.1987, 1♂, det. Schwarz, leg. H. Teunissen

Algarve, Lagos, Barragem da Bravura, 17.iv.2014, 1♂, det. & leg. E. Dufrière

***Nomada hispanica* DUSMET, 1913 ***

Iberia and France. Widespread, rare, 4 records. Host(s) unknown.

M a t e r i a l : Minho, Espinho, Palmeira de Faro, Quinta da Serra, 28.iv.2013, 1♀, det. Smit, leg. A. van Eck

Beira Alta, Guarda, Chãos, 17.vii.2007, 3♀♀, det. Schwarz/Smit, leg. A. van Eck;

Beira Alta, Serra da Estrela, Nave de Santo António 1600 m, 25.iv.2013, 1♂, det. Smit, leg. A. van Eck

Algarve, Monchique 900 m, 12.iii.2009, 1♀, det. Schwarz, leg. Baldock

***Nomada illustris* SCHMIEDEKNECHT, 1882 ***

Widespread, common, 31 records. Host(s) unproven but likely to be large *Andrena (Melandrena)* species such as *Andrena hispania* based on observations at nest sites at the Vale da Telha, Algarve.

M a t e r i a l : Ribeiro, Santarem, Fátima, 11.v.1968, 1♀, det. Smit. MHNHC, coll. Mendoça

Minho, Douro Litoral, Estremadura, Ribeiro, Baixo Alentejo, Algarve

***Nomada insignipes* SCHMIEDEKNECHT, 1882 ***

Southern Portugal, scarce, 8 records. Host(s) unknown.

M a t e r i a l : Algarve, Vale Covo, 3.v.1985, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Benfarras, 6.v.1985, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Messines, 18.v.1985, 1♂, 3♀♀, det. Schwarz, leg. H. Teunissen

Algarve, Relvão, 13.iv.1987, 3♂♂, det. Schwarz, leg. H. Teunissen

Algarve, São Brás de Alportel, 20.iv.1987, 1♂, 1♀, det. Schwarz, leg. H. Teunissen

Algarve, Alvor, 30.iv.2005, 1♀, det. & leg. Smit

Algarve, Santa Catarina de Fonte do Bispo, 4.v.2005, 1♂, det. & leg. Smit

Algarve, Amoreira, 3.v.2016, 1♂, det. Smit, leg. Cross

***Nomada integra* BRULLÉ, 1832 ***

Widespread, scarce, 12 records. Broodparasite of *Andrena (Chlorandrena)* species.

- M a t e r i a l : Minho, Braga, Fafe, Lagoa, 24.iv.1995, 1♀, det. Smit, leg. G. Seidler
Beira Baixa, Castelo Branco, Monforte da Beira, 11.iv.2014, 1♂, det. Baldock, leg. R. Andrade
Estremadura, Portinho, 20.iv.1976, 1♂, det. Smit, leg. J.F. Perkins. coll. BMNH
Estremadura, Lisboa, Institute of Agronomy, 26.iv.2016, 1♀, det. Baldock, leg. M. Carvajal
Algarve, Guia, 4.v.2002, 1♂, det. Schwarz, leg. Baldock
Algarve, Monchique, Monte Picota 750 m, 3.v.2005, 1♀, det. & leg. Smit
Algarve, Zavial, Praia da Ingrina, 7.iv.2015, 1♂, det. Wood/Baldock, leg. Wood
Algarve, Cabeço, near Monte Gordo, 23.iv.2016, 1♂, det. & leg. Wood
Algarve, Tavira, Santo Estêvão, 25.iv.2016, 1♀, det. Smit, leg. Wood
Algarve, Brito, 20.iv.2017, 1♂, 1♀, det. & leg. Smit
Algarve, Tavira, Rio Gilão, 22.iv.2017, 1♀, det. & leg. Smit
Algarve, Giões, Ribeira do Vascão, 4.iv.2017, 1♀, det. Smit, leg. Cross

***Nomada kohli* SCHMIEDEKNECHT, 1882 ***

Central Portugal, rare, 1 record. Broodparasite of *Lasioglossum puncticolle*.

- M a t e r i a l : Ribatejo, Santarem, 17.vii.1975, 1♀, det. Schwarz, leg. P. Mendoça. MNHNC, coll.
Mendoça

***Nomada lamellata* SCHWARZ, 1977**

Iberian endemic. Southern and Northern Portugal, rare, 2 records. Host(s) unknown.

- M a t e r i a l : Minho, Braga, Fafe, Lagoa, 1.iv.1995, 1♀, det. Smit, leg. G. Seidler
Alto Alentejo, Marvão, Castelo, 7.iii.1970, 1♀, leg. M.A. Diniz, det. Schwarz. Paratype

***Nomada lathburiana* (KIRBY, 1802) ***

Southern Portugal, rare, 2 records. Broodparasite of *Andrena (Melandrena)* species.

- M a t e r i a l : Algarve, São Brás de Alportel, Soalheire, 1♂, det. Schwarz, leg. M.A. Diniz
Algarve, Faro, phot. V. Jacinto

***Nomada linsenmaieri* SCHWARZ, 1974**

West-Mediterranean. Widespread, common, 53 records. Host(s) unknown.

- M a t e r i a l : SCHWARZ 1974: Douro Litoral, Resende, 8.v.1950, 1♂, 2♀♀, det. Schwarz, leg. N.F.
d'Andrade
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Alto Alentejo, Baixo
Alentejo, Algarve

***Nomada maculicornis* PÈREZ, 1884 ***

West-Mediterranean. Widespread, rare, 5 records. Host(s) unknown.

- M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fe, 20.iv.2015, 2♀♀, det. Schwarz, leg.
Penado
Beira Baixa, Portas do Rodão, 1♀, det. Schwarz, leg. H. Teunissen
Algarve, Monchique, 1♂, det. Schwarz, leg. H. Teunissen
Algarve, São Brás de Alportel, 20.v.1987, 1♂, det. Schwarz, leg. H. Teunissen
Algarve, Barragem de Bravura, 30.iii.2017, 1♂, det. Smit, leg. Cross

***Nomada mandibularis* SCHWARZ & GUSENLEITNER, 2013 ***

Previously known only from Spain and France. Northern Portugal, rare, 1 record. Host(s) unknown.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fe, 20.iv.2015, 1♀, det. Schwarz, leg. Penado

***Nomada marshamella* (KIRBY, 1802) ***

Central and Northern Portugal, rare, 2 record. Many known hosts from *Andrena (Hoplandrena)* and *Andrena (Melandrena)*.

M a t e r i a l : Douro Litoral, Porto, Jardim Botânico do Porto, 7.iii.2008, 1♀, det. Wood, phot. R. Andrade

Beira Litoral, Coimbra, Pinhal de Maroccos, 30.v.1968, 1♂, det. Schwarz, leg. M.A. Diniz

***Nomada melathoracica* IMHOFF, 1834**

Widespread, scarce, 11 records. Broodparasite of *Andrena agilissima* and probably *Andrena afrensis*.

M a t e r i a l : DUSMET 1931: Mogofores, 1♂

DINIZ 1959: Alferce, Coimbra, Pinhal de Maroccos, 11.v.1965, 1♀

Trás-os-Montes, Bragança, Moimenta, hills E of, 2.vii.2016, 1♀, det. Smit, leg. Wood

Douro Litoral, Chapa, 18.vi.2016, 1♂, det. & leg. Cross

Beira Alta, Serra da Estrela, Guarda, 10.vi.1971, det. & leg. Aspöck

Beira Alta, Serra da Estrela, Covilhã, 11.vi.1971, 1♂, det. & leg. Aspöck

Beira Alta, Manteigas, Vale do Zézere, 14.vi.2016, 1♂, det. Dufréne, leg. A. Livory & R. Coulomb

Beira Alta, Manteigas, 17.vi.2016, 1♂, det. Dufréne, leg. A. Livory & R. Coulomb

Estremadura, Sobreida, Quinta, 12.iv.1985, 1♂, 1♀, leg. M. Sorg

Estremadura, Caparica, Aldeia do Meco, 3.vi.1988, 1♀, det. & leg. P. Westrich

Algarve, Carrapateira, 5.iv.2014, 1♀, det. Smit, leg. Wood

Algarve, Moinhos Velhos, 27.iii.2015, 2♂♂, det. Smit, leg. Cross

Algarve, Vilarinha, 5.iv.2017, 2♂♂, det. & leg. Cross

***Nomada merceti* ALFKEN, 1909**

Iberia and France. Widespread, scarce, 9 records. Host(s) unknown.

M a t e r i a l : DUSMET 1921: Porto, 3♂♂, 2♀♀

Minho, Viana do Castelo, Santo Lanhelas, 12.vii.1965, 1♂, det. Schwarz, leg. M.A. Diniz

Douro Litoral, Porto, Angeiras, 8.vii.1965, 1♀, det. Schwarz, leg. M.A. Diniz

Douro Litoral, Matsinhos, Leca da Palmeira, 9.vii.1965, 2♂♂, det. Schwarz, leg. M.A. Diniz

Beira Alta, Manteigas, Vale do Zézere, 14.vi.2016, 2♀♀, det. Dufréne, leg. A. Livory & R. Coulomb

Algarve, Guia, 2.v.2008, 1♀, det. Schwarz, leg. Baldock

Algarve, Budens, 17.v.2016, 1♀, det. Smit, leg. Cross; 14.v.2017, 1♀, det. & leg. Cross

Algarve, Albufeira, Torres Velhas, 19.iv.2017, 2♀♀, det. & leg. Smit

Algarve, Barragem de Bravura, 8.v.2017, 1♂, det. Smit, leg. Cross

***Nomada minuscula* NOSKIEWICZ, 1930 ***

Southern Portugal, rare, 5 records. This species has been considered a subspecies of *Nomada sheppardana* in the past, but DNA barcoding supports its status as a distinct species (SCHMIDT et al. 2015). As with *Nomada sheppardana*, probable broodparasite of *Lasioglossum* species.

M a t e r i a l : Algarve, Tavira, 23-25.v.2012, 1♂, det. Schwarz, leg. A. Livory & R. Coulomb

Algarve, Carrapateira, 14.iii.2015, 1♂, 2♀♀, det. & leg. Cross
Algarve, Amoreira, 24.iv.2016, 1♀, det. Smit, leg. Cross
Algarve, Tavira, Rio Gilão, 22.iv.2017, 4♀♀, det. & leg. Smit
Algarve, Salema, Boca do Rio, 4.v.2017, 1♀, det. Smit, leg. Cross

***Nomada mutabilis* MORAWITZ, 1870 ***

Southern Portugal, scarce, 8 records. Broodparasite of *Andrena labialis*, *Andrena chrysopyga* and *Andrena polita*. *Andrena labialis* the most likely host in Portugal as it is regularly found in the western Algarve and the other two host species have yet to be recorded in Portugal.

M a t e r i a l : Algarve, Monchique, 1884, 6♀♀, leg. Korb. Coll. Museum München
Algarve, Castro Marim, 18.iv.1885, 1♀, leg. Lucas. Coll. Museum München
Algarve, Cape Pontal, 31.iii.1997, 1♀, det. Schwarz, leg. P. Hartmann
Algarve, Salema, Boca do Rio, 7.iv.2015, 1♀, det. Schwarz, leg. Wood
Algarve, Bensafrim, 11.iv.2015, 1♀, det. Smit, leg. J. D'Haeseleer
Algarve, Carrapateira, 26.iv-5.vi.2016, 3♀♀, det. & leg. Cross
Algarve, Salema, 13.iv.2017, 1♀, det. & leg. Cross
Algarve, Marmalete, 18.iv.2017, 1♂, det. & leg. Cross

***Nomada nobilis* HERRICH-SCHÄFFER, 1839 ***

Central and Southern Portugal, frequent, 26 records. Broodparasite of *Andrena nasuta* (not recorded from Portugal) and *Eucera* species.

M a t e r i a l : Algarve, Pêra, Faval, 6.iv.1966, 1♀, det. Schwarz, leg. M.A. Dimiz
Beira Litoral, Algarve

***Nomada numida* LEPELETIER, 1841 ssp. *manni* MORAWITZ, 1871 ***

Iberian endemic subspecies. Central Portugal, rare, 1 record. Host probably *Andrena morio*.

M a t e r i a l : Estremadura, Sesimbra, 3.vi.2011, 1♂, det. Schwarz, leg. A. Livory & R. Coulomb

***Nomada orbitalis* PÉREZ, 1913**

Iberia and France. Northern Portugal. Host(s) unknown.

M a t e r i a l : DUSMET 1921: Porto, 3♂♂, 2♀♀

***Nomada panzeri* LEPELETIER, 1841 ***

Central Portugal, rare, 1 record. Broodparasite of various *Andrena* (*Andrena*) species.

M a t e r i a l : Beira Alta, Serra da Estrela, Nave de Santo António, 1600 m, 25.iv.2013, 1♀, det. Smit, leg. A. van Eck

***Nomada pleurosticta* HERRICH-SCHÄFFER, 1839 ***

Northern Portugal, rare, 1 record. Broodparasite of *Andrena polita* in Central Europe, but as this species is found in Iberia only in the Pyrenees, other host species must be used.

M a t e r i a l : Minho, Braga, Fage, Lagoa, 1.v.1995, 1♂, det. Smit, leg. G. Seidler

***Nomada rhenana* MORAWITZ, 1872**

Southern Portugal, rare, 4 records. Broodparasite of *Andrena ovatula* and possibly other *Andrena (Taenianadrena)* species.

M a t e r i a l : Baixo Alentejo, Milfontes, Odemira, 28.v.1987, 1♂, det. Schwarz, leg. H. Tussac
Algarve, Tôr, iv.1988, 1♂, det. Schwarz, leg. H. Teunissen
Algarve, Tavira, 23-25.v.2012, 1♀, det. Schwarz, leg. A. Livory & R. Coulomb
Algarve, Caldas de Monchique, 25.iv.2014, 1♀, det. & leg. E. Dufrêne

***Nomada rubiginosa* PÉREZ, 1884 ***

Central Portugal, rare, 1 record. Host(s) unknown.

M a t e r i a l : Ribatejo, Vila Franca, 8.iv.2009, 2♂♂, 2♀♀, det. Schwarz, leg. F. Amiet

***Nomada rubricoxa* SCHWARZ, 1977**

Iberian endemic. Widespread, common, 37 records. Host(s) unknown.

M a t e r i a l : Douro Litoral, Sobreiral, 12.iv.1945, 1♀, det. Schwarz, leg. N.F. d'Andrade
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Nomada ruficornis* (LINNAEUS, 1758)**

Central Portugal, rare, 1 record. Broodparasite of *Andrena haemorrhoa* which has not yet been recorded in Portugal.

M a t e r i a l : DINIZ 1960: Portugal
Beira Alta, Serra da Estrela, Guarda, 18.vi.1981, 1♀, det. Schwarz, leg. H. Teunissen

***Nomada rufipes* FABRICIUS, 1793**

Central and Northern Portugal, rare, 5 records. Broodparasite of *Andrena (Cnemidandrena)* species, of which only *Andrena fuscipes* has been recorded in Portugal.

M a t e r i a l : KUHLMANN 1996: Serra da Estrela, Penhas da Sáude 1500m, 20-31.vii.1990, 9♂♂,
8♀♀; Vale de Candieira 1400m, 2.viii.1990, 5♂♂
Minho, Barcelos, Gilmonde, 4.ix.2014, 1♂, det. Smit, leg. R. Andrade
Minho, Codeçoso, Linha do Tamega, 10.ix.2016, 1♂, det. & leg. Cross
Beira Alta, Serra da Estrela, x.2014, 1♂, det. Smit, leg. A. Gonçalves
Beira Alta, Manteigas, São Pedro Nave do Santo António, 19.viii.2015, 1♀, det. Smit, leg. A. Gonçalves
Beira Alta, Manteigas, Rota da Carvão, 28.viii.2015, 7♀♀, det. & leg. A. Livory & R. Coulomb

***Nomada sanguinea* SMITH, 1854**

West-Mediterranean. Widespread, frequent, 24 records. Host(s) unknown.

M a t e r i a l : DUSMET 1931: Coimbra, 1♂
DINIZ 1959: Aldeia Nova de São Bento; Soure; Coimbra, Pinhal de Maroccos, 7.v.1968, 1♂; 19.v.1968,
1♀
Minho, Trás-os-Montes, Douro Litoral, Beira Alta, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Nomada serricornis* PÉREZ, 1884 ***

France, Iberia and Morocco. Widespread, rare, 5 records. Host(s) unknown.

M a t e r i a l : Douro Litoral, Amarante 14km SE, Ordem, 4.v.1990, 1♀, leg. F. Guseleinertner

Beira Litoral, Coimbra, Pinhal de Marrosos, 27.iii.1968, 1♀, det. Schwarz, leg. M.A. Diniz
Algarve, Praia da Luz, 16.iii.1967, 2♀♀, leg. K.M. Guichard
Algarve, Bico Alto, 12.iv.1988, 1♀, det. Schwarz, leg. H. Teunissen
Algarve, Goldra, 9.iii.1988, 1♂, det. Schwarz, leg. H. Teunissen

***Nomada sexfasciata* (PANZER, 1799)**

Widespread, scarce, 10 records. Broodparasite of *Eucera longicornis* and *Eucera nigrescens* in Central and Northern Europe. Host(s) in Portugal unknown, but other *Eucera* (*Eucera*) species must be involved as *Nomada sexfasciata* occurs beyond the range of *Eucera nigrescens* whilst *Eucera longicornis* is rare in Portugal.

M a t e r i a l : DINIZ 1960: Coimbra, Ponte da Portela, 16.iii.1968, 1♀, det. Schwarz, leg. M.A. Diniz
Minho, Braga, Fafe, San Jorge, 18.iv.1995, 5♀♀, det. Smit, leg. G. Seidler
Minho, Palmeira de Faro, Quinta da Serra, 28.iv.2013, 1♂, det. Smit, leg. A. van Eck
Douro Litoral, Povo de Varzim, 9.iv.1995, 3♂♂, det. Smit, leg. G. Seidler
Estremadura, Setúbal, Montijo, 29.ii.1988, 1♀, leg. H. Teunissen
Ribatejo, between Golegã and Chamusca, 4.iv.2017, 1♂, det. Baldock, leg. M. Jenner
Alto Alentejo, Portalegre, PN Serra São Mamede, S of Quinta do Barriero, 4.iv.2017, 1♂, det. Baldock,
leg. M. Jenner
Algarve, Tôr, 3.ii.1986, 1♀, leg. H. Teunissen
Algarve, Gambelas, 10.ii.1986, 1♀, det. Schwarz, leg. H. Teunissen
Algarve, Bordeira, 16.iii.1987, 1♀, det. Schwarz, leg. H. Teunissen
Algarve, Praia da Luz, 21.iii.1987, 1♀, leg. K.M. Guichard

***Nomada sheppardana* (KIRBY, 1802) ***

Widespread, scarce, 18 records. Broodparasite of various small *Lasioglossum* species.

M a t e r i a l : Beira Litoral, Coimbra, Porte de Portela, 1.iv.1968, 2♀♀, det. Schwarz, leg. M.A. Diniz
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Ribatejo, Alto Alentejo, Algarve

***Nomada signata* JURINE, 1807 ***

Northern Portugal, rare, 1 record. Broodparasite of *Andrena fulva*.

M a t e r i a l : Douro Litoral, Amarante, Carneiro, 3.v.1990, 1♂, det. Schwarz, leg. A. Roth

***Nomada similis* MORAWITZ, 1872 ***

Widespread, frequent, 19 records. Broodparasite of *Panurgus banksianus*. This is confirmed for Portugal by the one host record; Pêra, Praia Grande, 18.v.2016, where females were photographed repeatedly entering nests of *Panurgus banksianus*.

M a t e r i a l : Algarve, Monchique, Foia, 25.vi.1978, 3♀♀, leg. K.M. Guichard
Trás-os-Montes, Douro Litoral, Estremadura, Baixo Alentejo, Algarve

***Nomada stigma* FABRICIUS, 1804 ***

Southern Portugal, rare, 3 records. Broodparasite of *Andrena* (*Holandrena*) species including *Andrena labialis* and also *Andrena schencki*.

M a t e r i a l : Algarve, Monchique, Monte Picota 750m, 3.v.2005, 1♂, leg. Smit
Algarve, Lagos, Barragem da Bravura, 24.iv.2014, 1♂, det. Schwarz, leg. E. Dufrêne
Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 3♂♂, 1♀, det. Smit, leg. Wood

***Nomada striata* FABRICIUS, 1793 ***

Widespread, frequent, 22 records. Broodparasite of *Andrena similis* and other *Andrena (Taeniandrena)* species.

M a t e r i a l : Douro Litoral, Resende, 19.vii.1953, 1♀, det. & leg. P.M.F Verhoeff
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Alto Alentejo, Algarve

***Nomada succincta* PANZER, 1798**

Widespread, common, 37 records. Broodparasite of various large *Andrena (Melandrena)* species.

M a t e r i a l : SAUNDERS 1881: Algarve, São Barnabé-São Bartolomeu de Messines, 13.v.1880, 2♀♀;
Ponte de Morelos, 12.vi.1880, 1♀, leg. A.E. Eaton
Minho, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Nomada tridentirostris* DOURS, 1873 ***

Southern Portugal, rare, 3 records. Broodparasite of *Andrena ventricosa* in Central Europe, but as this species is not known from Portugal other species must be used.

M a t e r i a l : Alto Alentejo, Évora, 26.ix.2014, 1♂, det. Smit, leg. A. Livory & R. Coulomb
Algarve, Lagos, Bensafrim,, 5.iii.2015, 1♂, det. Smit, leg. Cross
Algarve, Ponta da Piedade, 7.iv.2015, 1♀, det. Schwarz, leg. Cross

***Nomada villosa* THOMSON, 1870 ***

Widespread, rare, 3 records. Broodparasite of *Andrena lathyri*, but as this species is not known from Portugal other *Andrena* species must be used.

M a t e r i a l : Minho, Braga, Tarrado, Cabeceiras de Basto, 24.iv.2012, 2♂♂, det. Smit, leg. A. van Eck
Beira Alta, Serra da Estrela, 20.iv.2015, 1♂, det. Smit, leg. A. Gonçalves
Algarve, Pêra, Praia Grande, 30.iii.2015, 1♀, det. Smit, leg. Cross

***Nomada zonata* PANZER, 1798 ***

Central and Northern Portugal, rare, 5 records. Broodparasite of *Andrena (Simandrena)* species, with the distinction between *Andrena propinqua* and *Andrena dorsata* currently taxonomically unclear.

M a t e r i a l : Minho, Barcelos, Gilmonde, 16.iv.2014, 1♀, det. Schwarz, leg. R. Andrade
Douro Litoral, Mindelo, Gândaro Nova, 21.iv.2013, 1♀, det. Smit, leg. A. van Eck
Douro Litoral, Povoa de Varzim, 9.iv.1995, 1♀, det. Smit, leg. G. Seidler
Beira Litoral, Vila da Feira, Castelo, 17.vii.1969, 1♀, det. Schwarz, leg. M.A. Diniz
Beira Litoral, Coimbra, Condeixa a Nova, Zambujal, 24.v.2015, 1♀, det. Smit, leg. A. Gonçalves

EPEOLINI

Genus *Epeolus* LATREILLE, 1802

6 species. All known species are broodparasites of *Colletes* (MICHENER 2007).

***Epeolus aureovestitus* DOURS, 1873 ***

Iberia, Algeria and Tunisia. Central and Southern Portugal, rare, 5 records. Host(s) unknown.

M a t e r i a l : Estremadura, Lisboa, Lagoa de Albufeira, 1.viii.1967, 1♀, det. Warncke, leg. P.M.F. Verhoeff. Coll. Schwarz

Estremadura, Lisboa, Caparica, 18.vii.1982, 1♂, det. Bogusch, leg. K.M. Guichard. BMNH

Algarve, Pêra, Praia Grande, 29.vi.2015, 1♀, det. Bogusch, leg. Cross

Algarve, Boca do Rio, 30.vii.2015, 1♀, det. Bogusch, leg. Cross

Algarve, Carrapateira dunes, 15.ix.2016, 1♀, det. Bogusch, leg. Cross

***Epeolus fallax* MORAWITZ, 1872 ***

Southern Portugal, rare, 5 records. This species appears to be a broodparasite of the *Colletes succinctus*-group. It has recently been described attacking the range-expanding *Colletes hederae* in Germany (WESTRICH 2016). Our own observations support an association with *Colletes succinctus* in Portugal.

M a t e r i a l : Algarve, Amoreira, 30.x.2016, 1♂; 1/10.xi.2016, 2♀♀; 4.x.2017, 1♂, det. & leg. Cross
Algarve, Barragem de Bravura, 31.x.2016, 1♀, det. & leg. Cross

***Epeolus* spp. nov.**

Iberian endemic. This species is currently being described from Portugal and Spain by Bogusch. Central and Southern Portugal, rare, 5 records. Host(s) unknown.

M a t e r i a l : Estremadura, Lisboa, Caparica, 18.vii.1982, 2♂♂, 4♀♀, det. Bogusch, leg. K.M. Guichard. BMNH

Baixo Alentejo, Vila Nova de Milfontes, 18-19.v.2012, 1♂, 1♀, det. Bogusch, leg. A. Livory & R. Coulomb

Algarve, Vila Real de Santo António, 24.v.2012, 1♂, det. Cross, leg. A. Livory & R. Coulomb

Algarve, Amoreira, 28.vii.2015, 1♂, det. Bogusch, leg. Cross

Algarve, Carrapateira dunes, 26.viii.2015, 1♀, det. Bogusch, leg. Cross

***Epeolus intermedius* PÉREZ, 1884 ***

Southern Portugal, scarce, 7 records. No published host records, but the species appears to be bivoltine and has been caught flying with the bivoltine *Colletes abeillei*. Both are amongst the largest members of their respective genera, and we suggest *Colletes abeillei* as a probable host.

M a t e r i a l : Baixo Alentejo, Zambujeira do Mar, 17.vii.2012, 1♀, det. Schwarz, leg. A. Livory & R. Coulomb

Algarve, Guia, 17.v.1999, 1♀, det. D.B. Baker, leg. Baldock. BMNH

Algarve, Amoreira, 5.vi.2015, 1♂, det. Bogusch/Cross, leg. Cross

Algarve, Bensafrim, 28.viii.2015, 1♂, det. Bogusch, leg. Cross

Algarve, Carrapateira, 17.ix.2015, 1♂, det. Bogusch, leg. Wood

Algarve, Budens, Monte da Sinceria, 14.v.2017, 1♂, det. Bogusch, leg. Cross

Algarve, Aljezur, Ponta da Atalaia, 17.v.2017, 2♀♀, det. Bogusch, leg. Cross

***Epeolus transitorius* EVERSMANN, 1852 (=*Epeolus julliani* PÉREZ) ***

Widespread, frequent, 16 records. Host(s) unknown.

M a t e r i a l : Estremadura, Lisboa, Caparica, 18.vii.1982, 1♂, 1♀, det. Bogusch, leg. K.M. Guichard.
BMNH
Douro Litoral, Estremadura, Baixo Alentejo, Algarve

***Epeolus variegatus* (LINNAEUS, 1758)**

Widespread, scarce, 14 records. Broodparasite of several *Colletes* species including *Colletes daviesanus*, *Colletes fodiens* and *Colletes similis* (AMIET et al. 2007).

M a t e r i a l : DINIZ 1959: Provença
Minho, Afife, 7.vi.2001, 1♀, leg. W. Fliervoet
Minho, Espoende, Rio Tinto, 3.vii.2014, 1♂, det. Baldock/Bogusch, leg. R. Andrade
Trás-os-Montes, Bragança, Reconço, 3.vii.2016, 1♀, det. Cross, leg. Wood
Estremadura, Alcobaça, Cela, 12.ix.2013, 1♀, det. Bogusch/Schwarz, leg. R. Andrade
Estremadura, Nazaré, south dunes, 19.viii.2016, 2♂♂, 1♀, det. Bogusch, leg. A. Ivory & R. Coulomb
Algarve, Aljezur, Praia de Monte Clérigo, 17.vii.2009, 1♂, det. Bogusch/Schwarz, leg. Baldock
Algarve, Pêra, Praia Grande, 26.ix.2014, 1♀, det. & leg. Cross
Algarve, Carrapateira, 17/20.ix.2015, 3♀♀, 1♂, det. & leg. Wood; 4/14.x.2016, 2♀♀, det. Bogusch/Cross,
leg. Cross
Algarve, Salema, Boca do Rio, 10.x.2016, 1♀, det. & leg. Cross
Algarve, Amoreira, 3.v.2016, 1♀; 30.x.2016, 1♀, both det. & leg. Cross

AMMOBATOIDINI

Genus *Ammobatoides* RADOSZKOWSKI, 1868

1 species.

***Ammobatoides scriptus* (GERSTÄCKER, 1869) ***

West-Mediterranean. Southern Portugal, scarce, 8 records. The genus *Ammobatoides* attacks *Melitturga* and *Meliturgula* (POPOV 1933). There is one confirmed host record for Portugal; at the Carrapateira site it was photographed entering nests of *Melitturga caudata* on 25.iv.2016.

M a t e r i a l : Algarve, Armação de Pêra cliffs, 20.iv.2006, 1♂, det. Schwarz, leg. Baldock
Algarve, Aljezur, Odeceixe, 4.vii.2009, 1♀; 25.v.2011, 2♀♀, det. Schwarz, leg. A. Ivory & R. Coulomb
Algarve, Carrapateira, 25.iv.2016, 1♂, 1♀; 5.vi.2016, 1♀ det. & leg. Cross; 23.iv.2017, 1♂, det. & leg.
Smit; 24.iv.2017, field, det. & leg. Cross
Algarve, Cerro de Santo Miguel, 28.iv.2016, 1♂, 2♀♀, det. & leg. Wood
Algarve, Aljezur, Ponta da Atalaia, 6.v.2017, 3♀♀, det. & leg. Cross

BIASTINI

Genus *Biastes* PANZER, 1806

1 species.

***Biastes brevicornis* (PANZER, 1798) ***

Northern Portugal, rare, 1 record. Broodparasite of *Systropha planidens* (AMIET et al. 2007).

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fe, 20.vi.2015, 1♀, det. Wood, conf'd Baldock, leg. Penado

AMMOBATINI

Genus *Ammobates* LATREILLE, 1809

4 species. Broodparasitic species, with probable hosts in the tribes Eucerini and Anthophorini (WARNCKE 1983).

Ammobates muticus SPINOLA, 1843 (=*Ammobates carinatus* MORAWITZ)

Central and Southern Portugal, common, 60 records. Host unconfirmed but in Portugal the bee is frequently seen at nest sites of *Eucera elongatula*.

M a t e r i a l : DINIZ 1959: Coimbra; Évora; Mitra
Beira Litoral, Estremadura, Ribatejo, Alto Alentejo, Algarve

Ammobates punctatus (FABRICIUS, 1804)

Widespread, frequent, 26 records. Broodparasite of *Anthophora bimaculata* (AMIET et al. 2007).

M a t e r i a l : WARNCKE 1983: Seixal, Carcavelos, Resende, Trafaria
Trás-os-Montes, Douro Litoral, Estremadura, Algarve

Ammobates rufiventris LATREILLE, 1809

West-Mediterranean. Southern Portugal, rare, 4 records. No published host records, but in Portugal it has only been found in coastal areas along with *Tetraloniella cinctella* and *Tetraloniella strigata*. At least one of these species is highly likely to be the host.

M a t e r i a l : DINIZ 1959: Portugal
Algarve, Luz de Tavira, 4.v.2005, 1♂, 1♀, leg & det. Smit
Algarve, Mexilhoeira Grande marsh, 23.v.2015, 1♂, det. Smit, leg. J. D'Haeseleer
Algarve, Cacela Velha, 19.v.2017, 1♂, 1♀, det. & leg. Cross
Algarve, Lagos, Quinta de São Roque, 22.v.2017, 1♂, det. & leg. Cross

Ammobates vincetus GERSTÄCKER, 1869

Southern Portugal. Host(s) unknown.

M a t e r i a l : WARNCKE 1983: Alcoutim

Genus *Pasites* JURINE, 1807

1 species.

Pasites maculatus JURINE, 1807

Southern Portugal, rare, 3 records. Listed as a broodparasite of *Pseudapis diversipes* (ROZEN 1986), but as this species has a decidedly northern distribution in Portugal another *Pseudapis* species must be used. *Pseudapis monstrosa* was confirmed as the host with

observations at a second generation nest site at Pêra on 5.x.2017, with both the *Pasites* and *Pseudapis* demonstrating bivoltine behaviour.

M a t e r i a l : WARCKE 1983: Portugal

Algarve, Pêra, Praia Grande, 17.vi.2015, 1♂, 1♀; 23.vi.2015, 1♂; 5.x.2017, 1♀, det. & leg. Cross

EUCERINI

Genus *Eucera* SCOPOLI, 1770

25 species. Published pollen preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2007) and Spain (MARTÍN et al. 2015).

***Eucera (Synhalonia) alternans* (BRULLÉ, 1832) ***

Widespread, scarce, 12 records. No published pollen preferences. *Hedysarum glomeratum* is a confirmed Portuguese pollen source.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 20.iv.2015, 1♀, det. Wood, leg. Penado Estremadura, Sesimbra, 28.iii.1971, 1♀, det. Baldock. MNHNC, coll. Mendoça

Estremadura, PN Serras de Aire e Candeeiros, 27.iv.2014, 3♂, det. Risch, leg. M. Jenner

Algarve, Silves, 5.iv.1997, 1♂, 1♀, det. & leg. P. Hartmann

Algarve, Lagoa, Albandeira, 20.iv.2005, 1♂, det. Risch, leg. Baldock

Algarve, Salema, Praia da Figueira, 5.iv.2015, 1♂, 1♀, det. Wood/Baldock, leg. Wood; 14.iv.2016, 1♂, det. & leg. Cross

Algarve, Carvoeira, Benagil, 2.iv.2015, 2♂♂, 1♀, det. Wood/Baldock, leg. Wood

Algarve, Figueira, 25.ii.2016, 1♀, det. & leg. Cross

Algarve, Salema, 9-21.iv.2016, 3♀♀, det. & leg. Cross; 13.iv.2017, 1♀, det. Risch, leg. Cross

Algarve, Cerro do Santo Miguel, 28.iv.2016, 1♂, det. & leg. Wood

***Eucera barbiventris* PÉREZ, 1902**

Iberian endemic. Southern Portugal, rare, 2 records. Pollen preferences unknown.

M a t e r i a l : Algarve, Montenegro, 10.ii.1980, 2♂♂, leg. H. Teunissen. Coll. RNHL. Algarve, Gambelas, 27.iii.1987, 1♀, leg. H. Teunissen. Coll. RNHL

***Eucera chrysopyga* PÉREZ, 1854 (= *Eucera pollinosa* SMITH)**

Central and Northern Portugal, rare, 2 records. No published pollen preferences. The one available Portuguese pollen load contained pure Fabaceae pollen, so *Eucera chrysopyga* may be associated with Fabaceae like many other *Eucera* (*Eucera*) species.

M a t e r i a l : DUSMET 1921: Porto, 1♀

DUSMET 1931: Coimbra, 1♀

DINIZ 1959: Valongo

Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♀, det. Risch, leg. Wood

Ribeiro, Santarem, 12.v.1972, 1♂, det. Risch. MNHNC, coll. Mendoça

***Eucera cineraria* EVERSMANN, 1852 ***

Northern Portugal, rare, 2 records. Pollen preferences unknown.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 16-18.v.2014, 2♀♀, det. Risch, leg. Penado

Trás-os-Montes, Bragança, Alfândega da Fé, 24-26.v.2015, 2♀♀, det. Wood, leg. Penado

***Eucera clypeata* ERICHSON, 1835**

Widespread, frequent, 19 records. No published pollen preferences but analysis of five pollen loads strongly supports polylecty, with loads containing Asteraceae, *Campanula*, *Cistus*, *Convolvulus*, *Echium*, Fabaceae, Lamiaceae and Lilaceae s.l.

M a t e r i a l : SAUNDERS 1881: (as *Eucera similis* LEPELETIER) Monchique, 19.vi.1880, 1♀, leg. A.E. Eaton

Trás-os-Montes, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Eucera codinai* DUSMET Y ALONSO, 1926 ***

Iberian endemic. Central and Southern Portugal, frequent, 28 records. No published pollen preferences. The one available Portuguese pollen load contained pure Fabaceae pollen, so *Eucera codinai* may be associated with Fabaceae like many other *Eucera* (*Eucera*) species.

M a t e r i a l : Ribatejo, Santarem, 30.iv.1977, 1♀, det. Baldock. MNHNC, coll. Mendoça
Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Eucera collaris* DOURS, 1873**

West-Mediterranean. Widespread, frequent, 30 records. No published pollen preferences. Analysis of two pollen loads and observations suggest polylecty, with loads containing *Cistus*, Fabaceae and Asteraceae.

M a t e r i a l : SAUNDERS 1881: Belem, 25.iv.1880, 1♀, leg. A.E. Eaton
Trás-os-Montes, Estremadura, Ribatejo, Alto Alentejo, Algarve

***Eucera dalmatica* LEPELETIER, 1841 ***

Central Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : Estremadura, Torres Vedras, Ermegeira, 28.v.2012, 1♂, det. Risch, leg. C. Reis

***Eucera decolorata* GRIBODO, 1924**

Iberia and north-west Africa. Widespread, frequent, 18 records. No published pollen preferences, but probably polylectic, with three analysed Portuguese pollen loads containing Asteraceae, Brassicaceae, *Echium*, *Plantago* and Fabaceae.

M a t e r i a l : DUSMET 1931: Aldeia Nova de São Bento, 1♂

DINIZ 1959: Santarem

Trás-os-Montes, Estremadura, Alto Alentejo, Algarve

***Eucera elongatula* VACHAL, 1907 ***

West-Mediterranean. Widespread, common, 74 records. No published pollen preferences. Analysis of eight pollen loads suggests polylecty with a strong preference for Asteraceae, with Brassicaceae, Fabaceae, *Plantago* and *Echium* other confirmed Portuguese pollen sources.

M a t e r i a l : Ribatejo, Santarem, 12.iv.1970, 1♂, det. Risch. MNHNC, coll. Mendoça
Trás-os-Montes, Estremadura, Alto Alentejo, Ribatejo, Baixo Alentejo, Algarve

***Eucera eucnemidea* DOURS, 1873**

West-Mediterranean. Central and Southern Portugal, frequent, 20 records. Probably oligoleptic on Asteraceae. (RISCH 1997).

M a t e r i a l : DUSMET 1931: Aldeia Nova de São Bento, 1♂

DINIZ 1959: Beja, Santarem

Estremadura, Alto Alentejo, Algarve

***Eucera graeca* RADOSZKOWSKI, 1876 ***

Central and Southern Portugal, rare, 5 records. No published pollen preferences. The one available Portuguese pollen load contained pure Fabaceae pollen, so *Eucera graeca* may be associated with Fabaceae like many other *Eucera* (*Eucera*) species.

M a t e r i a l : Estremadura, Torres Vedras, Ermegeira, 10.v.2012, 1♀, det. Risch, leg. C. Reis

Estremadura, Lisboa, Institute of Agronomy, 4/16.v.2016, 2♀♀, det. Risch, leg. V. Zina

Algarve, Guia, 12.iii.2009, 1♂, det. Risch, leg. Baldock

Algarve, Mexilhoeira Grande, 28.iii.2015, 1♀, det. Risch, leg. J. D'Haeseleer

***Eucera hispaniensis* PÉREZ, 1902**

Iberian endemic. Widespread, scarce, 14 records. No published pollen preferences. The one available Portuguese pollen load contained pure Fabaceae pollen, so *Eucera hispaniensis* may be associated with Fabaceae like many other *Eucera* (*Eucera*) species.

M a t e r i a l : DUSMET 1931: Provença, 1♂

DINIZ 1959: Aldeia Nova de São Bento, Bucaco, Mogofores

Trás-os-Montes, Bragança, Alfândega da Fé, 28.v+11.vi.2015, 2♀♀, det. Risch, leg. Penado

Estremadura, Sesimbra, 2-16.v.1971, 2♂♂, 2♀♀, det. Risch. MNHNC, coll. Mendoça

Estremadura, Mafra, v.2012, 8♂♂, det. Risch/Baldock, leg. C. Reis

Estremadura, Torres Vedras, 21-28.v.2012, 1♂, 3♀♀, det. Risch/Baldock, leg. C. Reis

Ribatejo, Santarem, 12.v.1972, 1♀, det. Risch. MNHNC, coll. Mendoça

Alto Alentejo, Albufera de Montargil, 30.iv.2014, 1♂, det. Risch, leg. M. Jenner

Algarve, Silves, 20.iv.2012, 3♂♂, 1♀, det. Risch, leg. Baldock

Algarve, Carrapateira, 5.iv.2014, 1♂, det. Baldock, leg. Wood

Algarve, Lagos, Moinhos Velhos, 27.iii.2015, 1♂, det. Baldock, leg. Cross

Algarve, Bensafrim, 11.iv.2015, 1♂, det. Baldock, leg. J. D'Haeseleer

Algarve, Carrapateira, 20.ii.2016, 1♂, det. & leg. Cross

Algarve, Aljezur, W of Vale do Telha, 1-9.v.2016, 1♂, 1♀, det. Risch, leg. Wood

Algarve, Marmalete, 18.iv.2017, det. Risch, leg. Cross

***Eucera hispana* LEPELETIER, 1841**

Iberia and France. Central and Northern Portugal, rare, 2 records. Pollen preferences unknown.

M a t e r i a l : SAUNDERS 1881: (as *Eucera hispanica*) Ponte de Morcelos, 12.vi.1880, 1♀, leg. A.E. Eaton

Trás-os-Montes, Bragança, Alfândega da Fé, 16.v.2014, 1♀, det. Risch, leg. Penado

Estremadura, PN das Serras de Aire e Candeeiros, Covão do Feto, 27.iv.2014, 1♂, det. Risch, leg. M. Jenner

***Eucera interrupta* BÄR, 1850**

Central and Northern Portugal, rare, 4 records. Oligoleptic on Fabaceae.

M a t e r i a l : SAUNDERS 1881: (as *Eucera semistrigosa* DOURS) Coimbra to Santo António, 3.vi.1880, 1♀, leg. A.E. Eaton
Trás-os-Montes, Bragança, Rabal, 1 km S, 29.vi.2016, 2♀♀, det. Risch, leg. Wood
Trás-os-Montes, Bragança, Gondesende, 1.vii.2016, 2♀♀, det. Risch, leg. Wood
Trás-os-Montes, Bragança, Espinhosela, 1.vii.2016, 1♀, det. Risch, leg. Wood
Trás-os-Montes, Bragança, Fontes, 1.vii.2016, 1♀, det. Risch, leg. Wood

***Eucera longicornis* (LINNAEUS, 1758)**

Southern Portugal, rare, 1 record. The records of Diniz were considered probable mis-identifications (Risch, pers. comm.) until the discovery of a male in the Algarve. The true identity of the earlier material requires confirmation.

M a t e r i a l : DINIZ 1959: Mata de Leiria
DINIZ 1960: Coimbra
Algarve, Salema, 13.iv.2017, 1♂, det. Risch, leg. Cross

***Eucera nigrescens* (PÉREZ, 1879) ***

Northern Portugal, scarce, 7 records. Oligolectic on Fabaceae. Replaced by *Eucera codinai* in the south, Risch, pers. comm.

M a t e r i a l : Minho, Guimarães, 7.iii.1990, 4♀♀, leg. A. Roth
Trás-os-Montes, Vila Real, Aveião do Cabo, 28.vi.2016, 1♀, det. & leg. Wood
Douro Litoral, Amarante, 29.iv.1990 1♀, leg. A. Roth
Douro Litoral, Amarante, 29.iv.1990; 2.v.1990, 2♀♀, det. & leg. F. Gusenleitner
Douro Litoral, Amarante, 18.vi.2016, 1♀, det. Risch, leg. Cross
Douro Litoral, Mindelo, Vila do Conde, 6.iv.2016, 1♂, det. Baldock, leg. R. Andrade

***Eucera nigrifacies* LEPELETIER, 1841**

Widespread, rare, 5 records. Probably oligolectic on Asteraceae (RISCH 1997).

M a t e r i a l : SAUNDERS 1881: Coimbra, 3.vi.1880, 1♂, leg. A.E. Eaton
Trás-os-Montes, Bragança, Gondesende, 1.vii.2016, 1♀, det. & leg. Wood
Ribatejo, Golegã, Paul do Boquiloço, 24.iv.2014, 1♂, det. Risch, leg. M. Jenner
Algarve, Vila do Bispo, 19.iv.2004, 2♂♂, det. Risch, leg. Smit
Algarve, Marmelete, 9.v.2016, 2♂♂, 2♀♀, det. Risch, leg. Wood; 18.iv.2017, 1♂, det. & leg. Cross

***Eucera nigrilabris* LEPELETIER, 1841**

Central and Southern Portugal, frequent, 25 records. No published pollen preferences. Analysis of three Portuguese and two Spanish pollen loads suggests mesolecty on Brassicaceae and Asteraceae.

M a t e r i a l : DUSMET 1931: Coimbra, 1♀
DINIZ 1959: Almodôvar
Estremadura, Ribatejo, Algarve

***Eucera notata* LEPELETIER, 1841**

Iberia and north-west Africa. Widespread, common, 70 records. No published pollen records. Analysis of 15 pollen loads and observations suggest oligolecty on Asteraceae.

M a t e r i a l : DINIZ 1959: Lagos
Trás-os-Montes, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

***Eucera numida* LEPELETIER, 1841**

Central and Southern Portugal, scarce, 8 records. Pollen preferences unknown.

M a t e r i a l : DUSMET 1931: Santarem, 1♂

DINIZ 1959: Coimbra; Lagos

Estremadura, Lisboa, 9.iii.1975, 1♂, det. Risch. MNHNC, coll. Mendoça

Estremadura, Sobreira, 2.ii-18.iii.1986, 3♂♂, det. Risch, leg. Cölln, Risch, Sorg

Ribeatejo, Santarem, 13.iii.1977, 1♂, det. Risch. MNHNC, coll. Mendoça

Algarve, Bensafrim, 3.iv.1997, 3♂♂, leg. P. Hartmann

Algarve, Pêra dunes, 12.iii.2009, 1♀, det. Risch, leg. Baldock

Algarve, Carrapateira, 3.iv.2015, 1♀, det. & leg. Wood

Algarve, Lagos, Ponte de Piedade, 5.ii.2017, 1♂, det. Risch, leg. Cross

Algarve, Salema, Figueira, 19.ii.2017, 1♂, det. Risch, leg. Cross

***Eucera oblitterata* PÉREZ, 1895**

Iberia and north-west Africa. Southern Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : DINIZ 1959: (as *Eucera clypeata* var. *hispanica* DUSMET) Beja

Algarve, Bensafrim, 3.iv.1997, 1♂, 1♀, leg. P. Hartmann

[*Eucera oraniensis* LEPELETIER, 1841]

DINIZ 1960: Portugal. Possible misidentification, Risch, pers. comm.]

***Eucera pannonica* MOCSÁRY, 1878 ***

Central Portugal, rare, 1 record. Pollen preferences unknown.

M a t e r i a l : Ribeatejo, Santarem, Fátima, 18.v.1985, 1♂, det. Risch. MNHNC, coll. Mendoça

***Eucera (Synhalonia) rufa* LEPELETIER, 1841 (= *Eucera berlandi* DUSMET)**

Central and Southern Portugal, scarce, 6 records. No published pollen records. *Papaver rhoeas* is a confirmed Portuguese pollen source.

M a t e r i a l : SAUNDERS 1881: Coimbra, 3.vi.1880, 1♂, leg. A.E. Eaton

Algarve, Salema, 7.iv.1997, 1♀, leg. P. Hartmann

Algarve, Alvor, Cruzinha, 9.iv.2015, 1♂, det. Wood, leg. J. D'Haeseleer

Algarve, Salema, 11.iv.2016, 1♂, det. & leg. Cross

Algarve, Tavira, Praia do Barril, 24.iv.2016, 1♂, det. & leg. Wood

Algarve, Tavira, Sinagoga, 25.iv.2016, 1♀, det. & leg. Wood

Algarve, Cacela Velha, 16.iv.2017, 2♂♂, det. & leg. Baldock; 23.iv.2017, 1♂, det. & leg. Cross

[*Eucera seminuda* BRULLÉ, 1832]

DUSMET 1921: (as *Eucera trivittata* BRULLÉ) Estremoz, 1♀. Probably misidentified, Risch, pers. comm.]

***Eucera taurica* MORAWITZ, 1871 ssp. *pulveracea* DOURS, 1873**

West-Mediterranean subspecies. Central and Southern Portugal. Pollen preferences unknown.

M a t e r i a l : DUSMET 1931: Soure, 1♀
Algarve, Lagos, 2.vi.1987, 1♂, det. Risch, leg. H. Tussac

[*Eucera (Synhalonia) tricincta* ERICHSON, 1835]

Coll. Warncke, OLML, 2 specimens from Portugal. Identity requires confirmation, Risch, pers. comm.]

Genus *Tetralonia* SPINOLA, 1838

1 species.

***Tetralonia malvae* (ROSSI, 1790)**

Oligoleptic on Malvaceae, using this family in Spain (MARTÍN et al. 2015).

M a t e r i a l : DINIZ 1960: Portugal

Genus *Tetraloniella* ASHMEAD, 1898

9 species. A genus of pollen specialists. Published pollen preference data is from Central Europe (WESTRICH 1989; AMIET et al. 2007) and Spain (MARTÍN et al. 2015).

Tetraloniella cinctella* (SAUNDERS, 1908)

Algeria, Tunisia and recently Spain. Central and Southern Portugal, rare, 4 records. No published pollen preferences, but probably oligoleptic on Dipsaceae based on field observations.

M a t e r i a l : Estremadura, Cabo Espichel, 4/5.vi.2011, 1♂; det. Risch, leg. A. Livory & R. Coulomb
Algarve, Tavira, 23-25.v.2012, 1♀, det. Risch, leg. A. Livory & R. Coulomb
Algarve, Mexilhoeira Grande, 20.v.2015, 1♀, 1♂, det. Risch, leg. J. D'Haeseleer
Algarve, Cacela Velha, 19.v.2017, 1♂, 1♀, det. Risch, leg. Cross

***Tetraloniella dentata* (KLUG, 1835)**

Southern Portugal. Oligoleptic on Asteraceae.

M a t e r i a l : DUSMET 1921: Elvas, 6♀♀

Tetraloniella fulvescens* (GIRAUD, 1863)

Central and Southern Portugal, rare, 2 records. Oligoleptic on Asteraceae, particularly *Inula*. A male has been taken visiting the morphologically similar *Pulicaria odora* which may be a pollen source in Portugal.

M a t e r i a l : Estremadura, Mafra, Cachouça, 15.v.2013, 1♂, det. Risch, leg. C. Reis
Algarve, Cabeço, near Monte Gordo, 23.iv.2016, 1♂, det. Wood/Risch, leg. Wood

***Tetraloniella graja* auct. (EVERSMANN, 1852)**

Southern Portugal. Oligoleptic on Asteraceae.

M a t e r i a l : DUSMET 1921: Elvas, 1♀

Tetraloniella iberica (DUSMET, 1926) *

Iberia, France and Tunisia. Widespread, rare, 3 records. Pollen preferences unknown but in Spain there is a strong association with *Pulicaria paludosa*; likely to be oligoleptic on Asteraceae.

- M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 7-11.viii.2014, 3♀♀, det. Risch, leg. Penado
Estremadura, Torres Vedras, Mafra, Casal Mosqueteiro, vi.2014, 1♀, det. Risch, leg. D. Pinto
Algarve, Alcoutim, 9.viii.1968, 1♀, det. & leg. Warncke. Coll. Warncke in OLML

Tetraloniella nana (MORAWITZ, 1873) *

Southern Portugal, rare, 2 records. Oligoleptic on Malvaceae.

- M a t e r i a l : Algarve, Salema, Boca do Rio, 29.vii.2015, 1♂, 1♀, det. & leg. Cross
Algarve, Salema, Boca do Rio, 30.vii.2015, 4♂♂, 3♀♀, det. Risch, leg. Cross

Tetraloniella ruficornis (FABRICIUS, 1804) *

Iberia and north-west Africa. Southern and Northern Portugal, rare, 4 records. Oligoleptic on Asteraceae.

- M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 21.vi.2016, 1♂, det. Risch, leg. Penado
Algarve, Amoreira, 6/7.viii.2015, 2♂♂, det. & leg. Cross
Algarve, Amoreira, 10.viii.2015, 2♂♂, det. Risch, leg. Cross

Tetraloniella salicariae (LEPELETIER, 1841) *

Southern Portugal, rare, 2 records. Narrowly oligoleptic on *Lythrum salicaria*.

- M a t e r i a l : Algarve, Alcoutim 20.viii.1968, 4♀♀, det. Risch, leg. Warncke. Coll. OLML
Algarve, Lagos, 3.viii.1968, 1♀, det. Risch, leg. Warncke. Coll. OLML

Tetraloniella strigata (LEPELETIER, 1841)

West-Mediterranean. Southern Portugal, scarce, 11 records. Oligoleptic on Dipsacaceae.

- M a t e r i a l : DINIZ 1959: Beja
Algarve, Luz de Tavira, 4.v.2005, 1♂, det. Risch, leg. Smit
Algarve, Pêra, 5.v.2005, 1♂, det. Risch, leg. Smit
Algarve, Odeceixe, 25.v.2011, 2♂♂, 2♀♀, det. Risch, leg. A. Livory & R. Coulomb
Algarve, Tavira, 23-25.v.2012, 1♂, 1♀, det. Risch, leg. A. Livory & R. Coulomb
Algarve, Mexilhoeira Grande, 20.v.2015, 2♀♀; 23.v.2015, 1♂, all det. Risch, leg. J. D'Haeseleer
Algarve, Cacela Velha, 1-19.v.2017, 2♂♂, 1♀, det. & leg. Cross
Algarve, Lagos, Quinta de São Roque, 22.v.2017, field, det. & leg. Cross
Algarve, Amoreira, 23.v.2017, 1♂, det. & leg. Cross
Algarve, Carrapateira, 25.v.2017, 1♂, det. & leg. Cross

ANTHOPHORINI

Genus *Amegilla* FRIESE, 1897

5 species. Published pollen preferences are from Central Europe (WESTRICH 1989; AMIET et al. 2007).

Amegilla albigena (LEPELETIER, 1841)

Widespread, common, 33 records. Polylectic.

M a t e r i a l : DUSMET 1921: Estremoz, 1♀

DUSMET 1931: Coimbra, 1♀; Serra da Boa Viagem, 1♂

KUHLMANN 1996: Serra da Estrela, Vale de Candieira 1400 m, 2.viii.1990, 1♀; Penhas da Saúde 1500 m, 24.vii.1990, 1♀; Fonte Santa, 26.vii.1990, 1♀

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Amegilla andresi (FRIESE, 1914) *

Iberia and North Africa. Central and Southern Portugal, scarce, 13 records. Pollen preferences unknown, probably polylectic.

M a t e r i a l : Estremadura, Caparica, 23.vi.1964, 3♀♀, det. Baldock. MNHNC, coll. Mendoza

Estremadura, São MARTINHO do Porto, 21.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb

Estremadura, Peniche, 22.viii.2015, 1♂, det. & leg. A. Livory & R. Coulomb

Estremadura, Nazaré, north, 23.viii.2015, 1♂, det. & leg. A. Livory & R. Coulomb

Baixo Alentejo, Vila Nova de Milfontes, 18.v.2012, 1♀; 21-22.ix.2014, 2♂♂, det. Le Goff, leg. A. Livory & R. Coulomb

Baixo Alentejo, Almograve, 22.ix.2014, 1♂, det. & leg. A. Livory & R. Coulomb

Algarve, Aljezur, Praia de Monte Clérigo, 12.x.2009, 3♀♀, det. Schwarz, leg. Baldock

Algarve, Aljezur, Odeceixe, 27.v.2011, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Tavira, 1.vi.2011, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Alvor, 22.vii.2012, 1♂, det. Baldock, leg. A. Livory & R. Coulomb

Algarve, Carrapateira, 14.ix.2014, 1♀, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Carrapateira, 17.ix.2015, 1♀, det. Baldock, leg. Wood

Amegilla fasciata (FABRICIUS, 1775) (=*Amegilla candens* PÉREZ) *

Southern Portugal, rare, 3 records. Pollen preferences unknown, probably polylectic.

M a t e r i a l : Algarve, Lagoa, Benagil, 13.x.2009, 1♂, det. Le Goff, leg. Baldock

Algarve, Vila Real de Santo António, 28.vii.2011, 3♂♂, det. & leg. Smit

Algarve, Tavira, Santa Luiza, 30.v.2016, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

Amegilla magnilabris (FEDTSCHENKO, 1875) *

Widespread, rare, 3 records. Pollen preferences unknown, probably polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 6.viii.2014, 1♀, det. Le Goff, leg. Penado

Estremadura, Sintra, Almargem do Bispo, 14.ix.2009, 1♀, det. Le Goff, leg. R. Andrade

Algarve, Odeceixe, near Aljezur, 27.v.2011, 1♂, det. Le Goff, leg. A. Livory & R. Coulomb

Amegilla quadrifasciata (VILLERS, 1789)

Widespread, common, 55 records. Polylectic.

M a t e r i a l : DUSMET 1921: Estremoz, 1♂, 1♀

DUSMET 1931: Serra da Boa Viagem, 1♂; Mitra, 1♂

DINIZ 1959: Berlenga; Jogueiros; Mata de Leiria

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

Genus *Anthophora* LATREILLE, 1803

22 species. Published pollen preferences are from Central Europe (WESTRICH 1989; AMIET et al. 2007).

***Anthophora aestivalis* (PANZER, 1801) ***

Southern Portugal, rare, 1 record. Polylectic.

M a t e r i a l : Algarve, Moinhos Velhos, Barragem da Bravura, 15.iv.2014, 1♀, det. & leg. Le Goff

***Anthophora affinis* BRULLÉ, 1832 ***

Central and Northern Portugal, rare, 2 records. Pollen preferences unknown, likely polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 24.v.2014, 1♂, det. Le Goff, leg. Penado Estremadura, Torres Vedras, Quinta do Impesto, vii.2014, 1♀, det. Le Goff, leg. D. Pinto

***Anthophora agama* RADOSKOWSKI, 1869**

Central and Southern Portugal, scarce, 11 records. Pollen preferences unknown, likely polylectic.

M a t e r i a l : DINIZ 1960: Portugal

Estremadura, Torres Vedras, Quinta Nova da Ermegreira, 14.iv.2011, 1♀, det. Le Goff, leg. J. Franco Algarve, Luz, 29.iii.1997, 1♂, det. & leg. P. Hartmann

Algarve, Ilha de Tavira, 4.v.2005, 1♀, det. & leg. Smit

Algarve, Monchique, 3.v.2005, 2♂♂, 1♀, det. & leg. Smit

Algarve, Montinhos da Luz, 13.iv.2014, 1♂, det. & leg. Le Goff

Algarve, Lagos, Luz, 20.iv.2014, 1♂, det. & leg. Le Goff

Algarve, Mexilhoeira Grande, 13.v.2015, 1♀, det. Wood, leg. J. D'Haeseleer

Algarve, Cacela Velha, 200m E, 27.iv.2016, 3♂♂, 1♀, det. & leg. Wood; 11.iv.2017, 1♂; 23.iv.2017, 1♂, both det. & leg. Cross

Algarve, Pêra, Praia Grande, 1.v.2016, 1♀, det. & leg. Cross

***Anthophora atriceps* PÉREZ, 1879**

Central Portugal. Pollen preferences unknown.

M a t e r i a l : SAUNDERS 1881: (as *Anthophora thomsonii* SAUNDERS) São Romão, Serra da Estrela, at 1792 feet, 9.vi.1880, 1♀, leg. A.E. Eaton

***Anthophora atroalba* LEPELETIER, 1841 ***

Widespread, common, 59 records. No published pollen preferences, likely to be polylectic, with six analysed Portuguese pollen loads containing Lamiaceae, *Cistus*, *Echium*, Fabaceae and Asteraceae.

M a t e r i a l : Alto Alentejo, Montargil, 14.iv.1973, 1♀; 22.v.1977, 1♀, det. Le Goff/Baldock. MHNHC, coll. Mendoça

Trás-os-Montes, Beira Alta, Estremadura, Ribatejo, Alto Alentejo, Algarve

***Anthophora balneorum* LEPELETIER, 1841 ***

West-Mediterranean. Widespread, scarce, 8 records. Narrowly oligoleptic on *Echium*.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 16.v.2014, 1♂; 19.v.2014, 1♀; 25.v.2014, 1♀; 23.iv-21.vi.2015, 5♀♀, all det. Le Goff, leg. Penado
Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 1♂, det. Le Goff, leg. A. Ivory & R. Coulomb
Ribatejo, Santarem, Paul do Boquilobo, 25.iv.1997, 1♀; 25.iv.2014, 1♂, both det. Le Goff, leg. M. Jenner
Baixo Alentejo, Mértola, SW, 17.iv.2017, 2♂♂, 2♀♀, det. Cross/Le Goff, leg. Baldock

Anthophora bimaculata (PANZER, 1798)

Widespread, common, 74 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: São Romão, 9.vi.1880, 1♂; Vila Real, 24.vi.1880, 1♂, leg A.E. Eaton
DINIZ 1959: Berlenga; Foz do Douro

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 18-20.vii.1990, 2♀♀
Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Alto
Alentejo, Baixo Alentejo, Algarve

Anthophora crassipes LEPELETIER, 1841

Central and Northern Portugal, rare, 4 records. Polylectic.

M a t e r i a l : DUSMET 1921: Porto, 1♂; Buçaco, 1♂

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde, 1500 m, 20.vii.1990, 2♀♀

Trás-os-Montes, Bragança, Montesinho, 29.vi.2016, 2♂♂, det. & leg. Wood

Douro Litoral, Amarante, Chapa, 9/10.ix.2016, 1♂, 1♀, det. & leg. Cross

Beira Alta, Manteigas, Vale do Zêzere, 14.vi.2016, 1♂, det. Le Goff, leg. A. Ivory & R. Coulomb

Anthophora crinipes SMITH, 1854 (=*Anthophora salviae* PANZER) *

Widespread, rare, 8 records. Polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 22.iv.2015, 2♀♀, det. Le Goff, leg. Penado

Ribatejo, Golegã, Paul do Boquilobo, 25.iv.2014, 1♂, 3♀♀, det. Baldock, leg. M. Jenner

Baixo Alentejo, Mértola, 10 km W, 18.iv.2017, 1♀, det. Le Goff, leg. Baldock

Algarve, Salema, 31.iii.1997, 1♂, det. & leg. P. Hartmann

Algarve, Benafim, Rocha da Pena, 20.iv.2012, 1♂, det. Le Goff, leg. Baldock

Algarve, Mexilhoeira Grande, 28/31.iii.2015, 3♂♂, det. Wood, leg. J. D'Haeseleer

Algarve, Alvor, Cruzinha, 9.iv.2015, 2♂♂, 2♀♀, det. Wood, leg. J. D'Haeseleer

Anthophora dispar LEPELETIER, 1841 *

Widespread, scarce, 9 records. Pollen preferences unknown, probably polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 16.v.2014, 1♀, det. Le Goff, leg. Penado

Beira Litoral, Leiria, Praia de Viera, 16.iv.1997, 1♀, det. Le Goff, leg. M. Jenner

Beira Alta, Serra da Estrela, Sazes, 2.vi.2012, 1♀, det. Le Goff, leg. Penado

Ribatejo, Santarem, Fátima, 5.iv.1969, 1♀, det. Le Goff. MNHNC, coll. Mendoça

Baixo Alentejo, Santa Clara a Velha, 2.v.2002, 1♀, det. Ortiz-Sánchez, leg. Baldock

Algarve, Silves, 20.iv.2012, 2♀♀, det. Le Goff, leg. Baldock

Algarve, Monchique, Meia Viana, 3.iv.2014, 1♂, det. Le Goff, leg. Wood

Algarve, Moinhos Velhos, 17.iv.2014, 1♀, det. & leg. Le Goff

Algarve, Bensfim, 5.iii.2015, 1♂, 1♀, det. & leg. Cross

Anthophora femorata OLIVIER, 1789

West-Mediterranean. Central and Northern Portugal, scarce, 10 records. No published pollen preferences, though DOURS (1869) states that *Anthophora femorata* remains faithful

to *Echium*. The only available Portuguese pollen load contained pure *Echium*; males are also frequently seen patrolling this genus so it is likely to be an *Echium* oligolege.

M a t e r i a l : SAUNDERS 1881: west of Vila Real at elevation of 1780 feet, 24.vi.1880, 1♂, leg. A.E. Eaton

Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♂, det. & leg. Wood

Trás-os-Montes, Bragança, Portello, 29.vi.2016, 1♀, det. & leg. Wood

Trás-os-Montes, Serra da Montesinho, Barragem de Serra Serrada, 29.vi.2016, 1♂, det. & leg. Wood

Trás-os-Montes, Serra do Montesinho, Alto Falgueirão, 30.vi.2016, 1♀, det. & leg. Wood

Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 1♂, det. & leg. Wood

Douro Litoral, Chapa, 18.vi.2016, 1♂, 1♀; 13.vi.2017, field, all det. & leg. Cross

Beira Alta, Gouveia, Paços da Serra, 15.iv.1977, 1♀, det. Le Goff. MNHNC, coll. Mendoça

Estremadura, Serra da Canadeiros, 16.iv.1997, 1♂, det. P. Westrich, leg. M. Jenner

Estremadura, Mafra, 28.v.2012, 1♀, det. Le Goff, leg. C. Reis

Anthophora fulvitarsis BRULLÉ, 1832

Central and Southern Portugal, scarce, 13 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: (as *Anthophora personata* ILLIGER) near Olivães, 24.iv.1880, 2♂♂, leg. A.E. Eaton

DUSMET 1931: Lumiar, 1♂

Estremadura, Cabo Espichel, 4.v.2011, 1♀, det. Le Goff, leg. A. Livory

Estremadura, Torres Vedras, Quinta da Impesta, vii.2014, 1♀, det. Le Goff, leg. D. Pinto

Estremadura, Corroios, 30.v.2016, 1♀, det. Wood, leg. Penado

Baixo Alentejo, Vila Nova de Milfontes, 18.v.2012, 1♀, det. Le Goff, leg. A. Livory

Algarve, Bensafrim, 3.iv.1997, 1♂, det. & leg. P. Hartmann

Algarve Armação de Pêra cliffs, 20.iv.2005, 1♂; 20.iv.2006, 1♂, det. & leg. Baldock

Algarve, Benagil, 6.iv.2014, 1♂; 2.iv.2015, 1♂, both det. Baldock, leg. Wood

Algarve, Pêra, Praia Grande, 1.v.2016, 1♀; 17.iv.2017, 1♀, both det. & leg. Cross

Algarve, Tavira, Cabanas, 31.v.2016, 1♀, det. & leg. A. Livory & R. Coulomb

Algarve, Burgau, 9.ii.2017, 1♂, det. & leg. Cross

Anthophora fulvodimidiata DOURS, 1869 *

West-Mediterranean. Widespread, scarce, 6 records. No published pollen preferences, but frequently found on Asteraceae.

M a t e r i a l : Trás-os-Montes, Bragança, Alfândega da Fé, 20.viii.2015, 1♀, det. Le Goff, leg. Penado

Estremadura, Loures, Bucelas, 31.viii.1968, 1♂, det. Le Goff. MNHNC, coll. Mendoça

Baixo Alentejo, Mértola, 27.vii.2012, 2♂♂, det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Foz de Odeleite, 28.vii.2011, 1♂, leg. Smit

Algarve, Amoreira, 21.vii-31.viii.2015, 3♂♂, 2♀♀, det. & leg. Cross

Algarve, Barão de São João, 15.viii.2015, field, det. & leg. Cross

Anthophora furcata (PANZER, 1798)

Oligolectic on Lamiaceae.

M a t e r i a l : DINIZ 1960: Portugal

Anthophora gallica DALLA-TORRE & FRIESE, 1895 * (as distinct from *Anthophora quadricolor* ERICHSON)

Central and Southern Portugal, scarce, 6 records. No published pollen preferences. However, all recorded flower visits in Portugal have been to *Dorycnium hirsutum*.

Interestingly, the known distribution of *Anthophora gallica* in Portugal is coastal and closely matches the range of this local plant.

M a t e r i a l : Estremadura, Cabo Espichel, 16.v.2012, 1♀, all det. Le Goff, leg. A. Livory & R. Coulomb

Algarve, Aljezur, Odeceixe, 25-27.v.2011, 2♀♀, det. Le Goff, A. Livory & R. Coulomb

Algarve, Sagres, Cabo de São Vicente, 22.v.2012, 1♀, det. Le Goff, phot. V. Jacinto

Algarve, Carrapateira, 5/6.vi.2016, 1♂, 2♀♀, det. & leg. Cross

Algarve, Amoreira, 7.vi.2016, 1♂, det. & leg. Cross

Algarve, Aljezur, Ponta da Atalaia, 17.v.2017, field, det. & leg. Cross

Anthophora hispanica (FABRICIUS, 1787)

Iberia, North Africa and the near East Southern Portugal, scarce, 10 records. No published pollen preferences. In the field, the species shows a strong affinity for *Erophaca baetica* (=*Astragalus lusitanicus*). Two analysed Portuguese pollen loads suggest polylecty, containing *Cistus albidus*, *Salvia pratensis* and *Lilaceae* s.l., probably *Asphodelus*.

M a t e r i a l : LEPELETIER 1841: Portugal

DINIZ 1960: Portugal

Algarve, Guia, 12.iii.2009, 7♀♀, det. Ortiz-Sánchez, leg Baldock

Algarve, Lagoa, Albandeira, 6.iii.2013, 1♀, det. & leg. Baldock

Algarve, Salema, Boca do Rio, 4.iv.2015, 1♀, det. & leg. Wood; 6.iii.2015, 1♂, 1♀, det. & leg. Cross

Algarve, Salema, Praia da Figueira, 7.iv.2014, 1♀, det. Baldock, leg. Wood; 19.ii.2017, 1♀, det. & leg. Cross

Algarve, Figueira, 7/22.ii.2016, 1♀, det. & leg. Cross

Algarve, Salema, 30.i.2017, 1♂, det. & leg. Cross

Algarve, Burgau, 9.ii.2017, 1♂, det. & leg. Cross

Algarve, Barrancão, 18.ii.2017, 1♂, det. & leg. Cross

Anthophora mucida GRIBODO, 1873 *

Southern and Northern Portugal, rare, 2 records. Probable first record for Portugal. Polylectic.

M a t e r i a l : Trás-os-Montes, PN de Douro Internacional, Mirando do Douro, 7.iv.2017, 1♂, det. Le Goff, leg. M. Jenner

Alto Alentejo, Montargil, 22.v.1977, 1♀, det. Le Goff, leg. P. Mendoça. MNHNC, coll. Mendoça

Anthophora plumipes (PALLAS, 1772)

Widespread, common, 97 records. Polylectic.

M a t e r i a l : SAUNDERS 1881: road to Mafra, 28.iv.1880, 2♂♂, 1♀; near Monchique 19.v.1880, 1♂, leg. A.E. Eaton

DUSMET 1921: Buçaco, 1♂; Porto, 1♂

DUSMET 1931: Aldeia Nova de São Bento, 1♂, 1♀; Almendres, 2♀♀

DINIZ 1959: Mitra; Serra do Montemuro

WESTRICH 2008: Salir, iv.2006, 1♂, 1♀

KUHLMANN 1996: Serra da Estrela, Penhas da Sáude 1500m, 20.vii.1990, 2♀♀

Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto Alentejo, Baixo Alentejo, Algarve

Anthophora podagra LEPELETIER, 1841 *

Southern Portugal, rare, 1 record. Pollen preferences unknown, probably polylectic.

M a t e r i a l : Algarve, Aljezur, Odeceixe, 25.v.2011, 1♂, det. Le Goff, leg. A. Ivory & R. Coulomb

***Anthophora romandii* DOURS, 1869 ***

Previously only Spain and north-west Africa. Southern Portugal, rare, 1 record. Pollen preferences unknown, probably polylectic.

M a t e r i a l : Algarve, Guia, 12.iii.2009, 1♂, 2♀, det. Le Goff, leg. Baldock

***Anthophora retusa* (LINNAEUS, 1758)**

Central and Southern Portugal, scarce, 6 records. Polylectic.

M a t e r i a l : DINIZ 1960: Portugal

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 4.vi.1989, 1♀

Estremadura, Sesimbra, 28.iii.1971, 1♂, det. Baldock. MNHNC, coll. Mendoça

Alto Alentejo, Portalegre, PN de Serra São Mamede, 4.iv.2017, det. Le Goff, leg. M. Jenner

Algarve, Albandeira cliffs, 20.iv.2005, 1♀, det. Le Goff, leg. Baldock

Algarve, Monchique, 3.v.2005, 1♀, det. & leg. Smit

Algarve, Budens, 19.iv.2016, 1♀, det. & leg. Cross

Algarve, Lagoa de Budens, 20.iv.2016, 3♂♂, det. & leg. Cross

***Anthophora robusta* (KLUG, 1845)**

Pollen preferences unknown.

M a t e r i a l : LUCAS 1846: (as *Anthophora nigromaculata* spp. nov.) Portugal

MELECTINI

Genus *Melecta* LATREILLE, 1802

7 species. Broodparasites of Anthophorine bees. Host associations are from Central Europe (WESTRICH 1989; AMIET et al. 2007) and more generally from RASMONT (2016).

***Melecta aegyptiaca* RADOSZKOWSKI, 1876**

Northern Portugal. Host(s) unknown. but Rasmont suggests an association with *Anthophora atroalba*.

M a t e r i a l : LIEFTINCK 1980: Sobreiral

***Melecta albifrons* (FÖRSTER, 1771)**

Central and Southern Portugal, frequent, 27 records. Broodparasite of *Anthophora plumipes* and *Anthophora fulvitarsis*. The only regularly encountered *Melecta*.

M a t e r i a l : SAUNDERS 1881: Ponte de Morcelos, 1♀, leg. A.E. Eaton

LIEFTINCK 1980: Lisboa; Resende; Portimão: Praia da Rocha

Estremadura, Ribatejo, Algarve

***Melecta duodecimmaculata* (ROSSI, 1790)**

Probable Broodparasite of *Anthophora hispanica*, based on its large size and early phenology.

M a t e r i a l : DINIZ 1960: Portugal
LIEFTINCK 1980: Portugal

***Melecta festiva* LIEFTINCK, 1980**

Northern Portugal. Host(s) unknown. but Rasmont suggests and association with *Anthophora affinis* and *Anthophora mucida*.

M a t e r i a l : LIEFTINCK 1980: Sobreiral

***Melecta italica* RADOSZKOWSKI, 1876**

Central and Southern Portugal, rare, 3 records. Host(s) unknown.

M a t e r i a l : LIEFTINCK 1980: Coimbra, Estoril, Resende
Ribatejo, Porto Alto, 12.iii.1972, 1♂, det. Schwarz. MNHNC, coll. Mendoça
Algarve, Carrapateira, 7.iii.2015, 1♀, det. & leg. Cross
Algarve, Lagos, Ponte da Piedade, 2.iii.2016, 1♀, det. & leg. Cross

***Melecta luctuosa* (SCOPOLI, 1770)**

Widespread, rare, 2 records. Broodparasite of *Anthophora retusa* and *Anthophora aestivalis*.

M a t e r i a l : SAUNDERS 1881: (as *Melecta punctata* LATREILLE) Ponte de Morcellos, 1880, 1♀
DUSMET 1931: Serra do Montemuro, 1♀
LIEFTINCK 1980: Cardigos, Coimbra, Faro, Figueira da Foz, Porto, Rezende
Trás-os-Montes, Pardelhas, 11.vi.2017, 1♀, det. & leg. Cross
Baixo Alentejo, Mértola, 17.iv.2017, 1♀, det. & leg. Baldock, confirmed Le Goff

***Melecta tuberculata* LIEFTINCK, 1980**

Central Portugal. Host(s) unknown.

M a t e r i a l : LIEFTINCK 1980: Estoril

Genus *Thyreus* PANZER, 1806

6 species. Broodparasites of Anthophorine bees. Host associations from Central Europe (WESTRICH 1989; AMIET et al. 2007) and more generally from RASMONT (2014).

***Thyreus affinis* (MORAWITZ, 1874)**

Central and Southern Portugal. Host(s) unknown.

M a t e r i a l : LIEFTINCK 1968: Carcavelos; Portimão: Praia da Rocha; Setúbal, Sines

***Thyreus hirtus* (DE BEAUMONT, 1940)**

Central and Northern Portugal, scarce, 8 records. Host(s) unknown. but our personal observations suggest an association with *Anthophora femorata* in Portugal.

M a t e r i a l : LIEFTINCK 1968: Caldas de Reinha; Lagoa de Albufeira; Montemor Trás-os-Montes, Bragança, Alfândega da Fé, 26.v.2014, 1♂, det. Baldock, leg. Penado
Trás-os-Montes, 3km N.E. of Varge, 3.vii.2016, 1♀, det. & leg. Wood
Trás-os-Montes, hills E of Moimenta, 2.vii.2016, 3♀♂, det. & leg. Wood
Trás-os-Montes, Vila Real norte, 28.vi.2016, 1♀, det. & leg. Wood

Douro Litoral, Chapa, 19.vi.2016, 1♂; 13.vi.2017, 1♂, both det. & leg. Cross
Beira Alta, Gouveia, Paços da Serra, 8.vii.1977, 1♂, det. Schwarz. MNHNC, coll. Mendoça
Estremadura, Cabo Espichel, 4.vi.2011, 1♂, det. Schwarz, leg. A. Livory

***Thyreus histrionicus* (ILLIGER, 1806)**

Widespread, common, 32 records. Broodparasite of *Amegilla quadrifasciata*.

M a t e r i a l : LIEFTINCK 1968: Portugal
Minho, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Thyreus orbatus* (LEPELETIER, 1841)**

Central and Northern Portugal, rare, 2 records. Portuguese host(s) unknown. but Rasmont notes that this species is unusual in using *Anthophora* species as hosts, suggesting *Anthophora quadrimaculata*.

M a t e r i a l : SAUNDERS 1881: (as *Crocisa orbata*) Ponte de Morcellos, 14.vi.1880, 2♂♂, leg. A.E. Eaton

DUSMET 1921: Porto, 1♀

DINIZ 1959: Serra da Boa Viagem; Soure

Beira Alta, Gouveia, Paços da Serra, 30.vii.1975, 1♂; 30.vii.1986, 1♂, det. Schwarz. MNHNC, coll. Mendoça

Estremadura, São MARTINHO do Porto, 21.viii.2015, 1♀, det. & leg. A. Livory & R. Coulomb

***Thyreus ramosus* (LEPELETIER, 1841)**

Widespread, frequent, 26 records. Broodparasite of *Amegilla albigena*.

M a t e r i a l : DUSMET 1921: Famalicão, 1♀

Minho, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Baixo Alentejo, Algarve

***Thyreus scutellaris* (FABRICIUS, 1781)**

Central and Northern Portugal. Host(s) unknown.

M a t e r i a l : DUSMET 1931: Soure, 1♀

DINIZ 1959: Porto

BOMBINI

Genus *Bombus* LATREILLE, 1802

13 species. Pollen preference data is from Central Europe (WESTRICH 1989). As social bees, *Bombus* are well known to be predominantly widely polylectic.

***Bombus (Psithyrus) barbutellus* (KIRBY, 1802) ***

Central and Northern Portugal, rare, 4 records. Social parasite of *Bombus (Megabombus)* species, which in Portugal includes *Bombus hortorum* and *Bombus ruderatus*.

M a t e r i a l : Trás-os-Montes, Serra da Montesinho, Porto do Sabor, 4.vii.2016, 1♂, det. & leg. Wood
Douro Litoral, Gondomar, Valbom, 6.iv.2014, 1♀, det. Castro, leg. Penado

Beira Alta, Serra da Estrela, Loriga and Charco recreativo, 25.v.2013, 1♂, leg. Penado, 2♀♀, phot.
Penado, all det. Castro

Beira Baixa, Serra da Estrela, Teleferico abandonado, 2.vii.2013, 2♂♂, det. Castro, leg. Penado

***Bombus (Psithyrus) campestris* (PANZER, 1801) ***

Central and Northern Portugal, rare, 2 records. Social parasite of *Bombus (Thoracobombus)* species, which in Portugal includes *Bombus pascuorum* and *Bombus humilis*.

M a t e r i a l : Minho, Salamonde, Vieira do Minho, 16.v.2016, 1♀, det. & leg. Castro
Beira Alta, Serra da Paços, Gouveia, Serra da Estrela, 7.viii.1967, 1♂, det. Castro. MNHNC, coll. Mendoça

***Bombus hortorum* (LINNAEUS, 1761)**

Widespread, frequent, 24 records. Polylectic.

M a t e r i a l : [SAUNDERS 1881: Bélem north-west of Villa Real, 1880, 2♂♂, 1♀; Coimbra, 1880, leg. A.E. Eaton]

DUSMET 1921: Buçaco; Elvas; Porto

DUSMET 1931: Coimbra, Jugeiros, Soure, 2♂♂, 2♀♀

[Early records published as "*Bombus hortorum*" are not reliable, since many early authors treated]

Bombus hortorum and *Bombus ruderatus* as synonymous and it is therefore impossible to know which species is actually involved, Castro, pers. comm.]

RASMONT 1983: (as *Megabombus hortorum* and *Megabombus asturiensis* TKALCÚ) northern Portugal

CASTRO 1993: Estremadura, Serra de Sintra

KUHLMANN 1996: (as *Bombus asturiensis* and *Bombus hortorum*) Serra da Estrela, Seia, northern slope, 1000m, 30.vi.1972, 5♀♀ (workers), leg. W.F. Reinig

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Algarve

***Bombus humilis* ILLIGER, 1806**

Northern Portugal. Polylectic.

M a t e r i a l : DUSMET 1921: (as *Bombus variabilis* SCHMIEDEKNECHT) Famalicão, 1♀; Porto, 1♀

***Bombus lapidarius* (LINNAEUS, 1758) ssp. *decipiens* PÉREZ, 1890 ***

Central and Northern Portugal, scarce, 9 records. Polylectic.

M a t e r i a l : Trás-os-Montes, Bragança, França, 3.vii.2007, 1♀ (unclear), det. Wood, phot. R. Andrade

Trás-os-Montes, Vila Pouca de Aguiar, Guilhado, 25.iv.2008, 1♀ (worker), det. & leg. Penado

Trás-os-Montes, França-Bragança, Viveiro Trutas, 13.vii.2014, 1♀ (worker), det. & leg. Penado

Trás-os-Montes, Vila Real, Seiros, Beça river, 1.vii.2015, 1♀ (worker), phot. A. Torralba, det. Castro

Trás-os-Montes, 3km N.E. of Varge, 3.vii.2016, 1♀ (worker), det. & leg. Wood

Trás-os-Montes, Serra do Montesinho, Alto Falgueirão, 30.vi.2016, 1♀ (worker), det. & leg. Wood

Trás-os-Montes, Serra da Montesinho, Barragem de Serra Serrada, 29.vi.2016, 1♀ (worker), det. & leg. Wood

Trás-os-Montes, Serra da Montesinho, Porto do Sabor, 4.vii.2016, 1♀ (worker), det. & leg. Wood

Beira Alta, Gouveia, Paços da Serra, Serra da Estrela, 26.vii.1975, 1♀ (worker), det. Castro

***Bombus lucorum* (LINNAEUS, 1761) ***

Central and Northern Portugal, rare, 2 records. Polylectic.

M a t e r i a l : Trás-os-Montes, Montesinho, Torre Isolada, 30.vi.2016, 1♀ (queen), det. Castro, leg. Wood

Beira Baixa, Serra da Estrela, 31.vii.1975, 1♀ (queen), det. Castro, MNHNC, coll. Mendoça

Bombus magnus VOGT, 1911

Central Portugal. Polylectic.

M a t e r i a l : KRUSEMAN 1955: Portugal

RASMONT 1984: (as *Bombus magnus luteostriatus* KRÜGER 1954) Serra da Estrela: northern slope, near Seia, 30.vi.1972, 1♀ (worker), Torre to Penhas da Saúde, Covilhã, 30.vi.1972, 2♀♀ (workers), all leg. W.F. Reinig

Bombus muscorum (LINNAEUS, 1758)

Widespread, frequent, 22 records. Polylectic.

M a t e r i a l : SAUNDERS 1881; Coimbra to Santo António, 3.vi.1880, 1♂, 2♀♀ (workers), Serra da Estrela, Seia, 6.vi.1880, all leg. A.E. Eaton

DUSMET 1921: (as *Bombus cognatus* STEPHENS) Elvas, 2♀♀ (workers); Estremoz, 1♀(worker)

DUSMET 1931: Mata de Leiria, Cabreira, 4♀♀

DINIZ 1959: (as *Bombus cognatus*) Coimbra, Foz do rio Lis, Mata do Gerês, Mata do Urso, Minhotães, Serra da Cabreira, Serra do Gerês

KUHLMANN 1996: Serra da Estrela, Seia, northern slope, 1000m, 30.vi.1972, 2♂♂, leg. W.F. Reinig
Minho, Douro Litoral, Beira Litoral, Beira Alta, Estremadura, Alto Alentejo, Baixo Alentejo, Algarve

Bombus pascuorum (SCOPOLI, 1763)

Widespread, common, 59 records. Polylectic.

M a t e r i a l : MÉDINA 1898: (*Bombus agrorum* RASSE) São Mamade, leg. A. Nobre, Valongo, leg. Reis jnr.

KRÜGER 1928: (as *Bombus agrorum rufostriatus* KRÜGER) Santo Tirso, 1♀

DUSMET 1931: (as *Bombus agrorum* var. *rufostriatus*) Felgueiras; (as *Bombus agrorum* var. *freygessneri* VOGT) Mata de Leiria; (as *Bombus agrorum* var. *dusmeti* VOGT) Mata de Foja

KRÜGER 1931: (as *Bombus agrorum rufostriatus*) Castelo de Vide, 1♂

DINIZ 1959: (as *Bombus agrorum* var. *dusmeti*) Mata de Foja, Serra do Buçaco; (as *Bombus agrorum* var. *freygessneri*) Foz do rio Liz, Serra da Cabreira, Serra do Marão; (as *Bombus agrorum* var. *rufostriatus*) Jugeiros, Mata de Trafaria

CASTRO 1989: Lisboa area

KUHLMANN 1996: Serra da Estrela, Seia, northern slope, 1000m, 30.vi.1972, 1♀ (worker), leg. W.F. Reinig

ORNOSA & ORTIZ-SÁNCHEZ 2004: (as *Bombus pascuorum rufostriatus*) Serra de Sintra

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Baixo, Alentejo, Algarve

Bombus pratorum (LINNAEUS, 1758)

Central and Northern Portugal, rare, 3 records. Polylectic.

M a t e r i a l : CASTRO & ORNOSA 1985: Beira Litoral, Buçaco, 14.v.1983, 1♂, 3♀♀ (workers), leg. E. Asensio

Douro Litoral, Vila do Conde, Vairão, 7.v.2009, 1♂, det. & leg. Penado

Beira Alta, Manteigas, Vale de Zêzere, 25.viii.2015, 1♀ (worker), det. & leg. A. Livory & R. Coulomb
Ribatejo, Fátima, Ourém, 22.v.1985, 1♂, det. Castro. MNHNC, coll. Mendoça

Bombus ruderatus (FABRICIUS, 1775)

Widespread, common, 32 records. Polylectic.

M a t e r i a l : DINIZ 1960: Portugal

ORNOSA & ORTIZ-SÁNCHEZ 2004: (as *Bombus ruderatus rondensis* CASTRO) Setúbal

Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Baixo Alentejo, Algarve

***Bombus terrestris* (LINNAEUS, 1758) ssp. *lusitanicus* (KRÜGER, 1956)**

Widespread, common, 108 records. Widely polylectic.

M a t e r i a l : MÉDINA 1898: São Mamade, leg. A. Nobre, Valongo, leg. Reis jnr.

SAUNDERS 1881: Picota, Monchique, 20.v.1880, 1♀ (queen), leg. A.E. Eaton.

DUSMET 1921: Elvas, Famalicão, Porto

DUSMET 1931: Mata de Leiria, 5♂♀; Mitra; Jogueiros

KRÜGER 1956: Castelo da Vide, Santo Tirso, São MARTINho, Serra da Estrela

DINIZ 1959: Coimbra and many others in northern Portugal

KUHLMANN 1996: Serra da Estrela, Penhas da Saúde 1500m, 2.vi.1989, 1♀

WESTRICH 2008: Algarve, Salir, iv.2006, 1♀

Minho, Trás-os-Montes, Douro Litoral, Beira Litoral, Beira Alta, Beira Baixa, Estremadura, Ribatejo, Alto

Alentejo, Baixo Alentejo, Algarve

***Bombus (Psithyrus) vestalis* (GEOFFROY, 1785) ssp. *obenbergeri* MAY, 1944**

Widespread, scarce, 14 records. Social parasite of *Bombus terrestris*.

M a t e r i a l : DUSMET 1931: (as *Psithyrus*) Serra da Cabreira, Braga, 1♀

Beira Litoral, Estarreja, Canelas, 7.iii.2014, 1♀, det. Castro, leg. R. Andrade

Beira Alta, Guarda, Serra da Estrela, 13.vi.2010, 1♂, phot. F. Romão, det. Castro

Beira Alta, Serra da Estrela, Seia, Sazes 1260m, 20.ix.2011, 1♀, phot. G. Rosa

Beira Alta, Mantiegas, Serra da Estrela, 14.vi.2016, 1♀, det. P. Sagot, leg. A. Ivory & R. Coulomb

Estremadura, Lisboa, 13.v.2012, 1♂, det. Castro, leg. Penado

Estremadura, Setúbal, Serra da Arrábida, 27.i.2008, 1♂, phot. J. MARTINS, det. Castro

Estremadura, Lisboa, Institute of Agronomy, 8.v.2016, 1♂, det. Castro, leg. M. Carvajal

Algarve, Salema, Boca do Rio, 4-7.iv.2014, 3♀♂, det. Wood/Baldock, leg. Wood

Algarve, Benagil near Carvoeiro, 2.iv.2015, 1♂, det. & leg. Cross

Algarve, Figueira, Salema, 18.ii.2016, 1♂, 1♀; 30.i.2017, 1♀, all det. & leg. Cross

Algarve, Lagos, Ponta da Piedade, 23.ii.2016, 1♂; 5.ii.2017, ♀, all det. & leg. Cross

APINI

Genus *Apis* LINNAEUS, 1758

1 species.

***Apis mellifera* LINNAEUS, 1758**

Widespread, common everywhere. Widely polylectic.

M a t e r i a l : SAUNDERS 1881: Belem

WESTRICH 2008: Salir

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Fig. 3: Female *Colletes albomaculatus*. This species is atypical for the genus *Colletes* in several respects: among them the reduction of the white abdominal bands to two white flecks and in its peculiar nest closure. **Fig. 4:** Using the cellophane-like substance all *Colletes* use to line their nests, *Colletes albomaculatus* produces this impressive nest closure that resists forced entry but permits easy exit. It certainly works, and provisioning females emit a buzz, audible from some distance, with the effort of entering. **Fig. 5:** The diminutive *Colletes dinizi*, one of the smallest species in the Iberian fauna. Its distribution closely mirrors that of *Helichrysum italicum*: a flower it is often seen visiting. Little is known about its pollen preferences but it is regularly collected on Asteraceae and is probably oligolectic on this family like other members of the *C. fodiens*-group. **Fig. 6:** The female *Hylaeus variegatus* showing the contrasting black and yellow facial markings typical of the genus. This is by far the commonest of the species with red on the first abdominal terga. **Fig. 7:** Female *Andrena alutacea* nectaring on *Euphorbia segetalis*. This southern counterpart of *Andrena proxima* is oligolectic on Apiaceae and can be locally frequent on late spring umbellifers. **Fig. 8:** *Andrena lateralis* female. Despite being one of the larger and more striking *Andrena*, nothing seems to have been published on its pollen preferences, but our observations suggest it is oligolectic on Apiaceae. **Fig. 9:** *Andrena orbitalis* starting to collect pollen from *Plantago lagopus*. Plantains are typical weeds of open bare ground, and upon emergence in late March and early April large numbers of the white-faced male *Andrena orbitalis* can be seen rapidly patrolling flowers of this genus. **Fig. 10:** *Andrena rhyssonota* collecting pollen from yellow Asteraceae. The Mediterranean is home to a great diversity of spring *Andrena* from the subgenera *Chlorandrena* and *Chrysandrena* that specialise on Asteraceae pollen. These species strongly favour the 'hawkish' Asteraceae such as *Crepis*, *Hieracium*, *Hypochaeris* and *Leontodon*.



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Fig. 11: Female *Camptopoeum baldocki* with a clear view of a tibial scopa full of the yellow pollen of *Frankenia laevis*. **Fig. 12:** *Flavipanurgus fuzetus* begining to collect pollen from *Spergularia purpurea*. Until it was rediscovered in 2016, this species was only known from a single female collected in 1978 near Fuseta, a village on the south coast of the Algarve. **Fig. 13:** *Panurginus albopilosus* on yellow Brassicaceae. When collecting pollen, the female is always recognisable as distinct from small black *Andrena* species, as *Panurginus* carry their pollen in distinctly wet lumps, moistening it with nectar during the foraging trip. Only one species is known from Portugal. **Fig. 14:** Male *Panurgus canescens*. The only Portuguese representative of the subgenus *Pachycephalopanurgus*. In this subgenus the typical broad head of the group is exaggerated to give an even more fearsome appearance. This means that, despite its diminutive size, it is readily distinguished in the field from other tiny, black bees. **Fig. 15:** *Melitturga caudata* male in flight. *Melitturga* often nest in dense aggregations where the males hover in numbers, in constant attendance. The males fly low with their legs dangling in this characteristic fashion, so that the identity of the nesting bees is apparent even from some distance. **Fig. 16:** *Dufourea gaullei* male. This seems to be the one *Dufourea* that can be found in numbers. Given the right conditions, both sexes can be abundant for hundreds of metres along the lengths of track in which they nest. They have a preference for *Spergularia* but will visit other Caryophyllaceae such as *Paronychia*. **Fig. 17:** A male *Systropha planidens* in typical pose, bottom up and head down in a flower of *Convolvulus althaeoides*. **Fig. 18:** *Pseudapis bispinosa* male. Male *Pseudapis* have a variety of peculiar projections on the hind tibia that allow recognition to species level in the field (though the females are much harder). Unfortunately for the purposes of illustrating the genus, this feature is least developed in this, by far the commonest, species.



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Fig. 19: *Halictus quadricinctus* male. The largest of its genus in Portugal, its sheer size makes *Halictus quadricinctus* easy to identify. Found throughout Portugal, it is one of the most widespread species, though never particularly numerous. **Fig. 20:** *Lasioglossum virens* collecting pollen from *Raphanus raphanistrum*. Like most *Lasioglossum* species, *Lasioglossum virens* is widely polylectic, foraging from many different plants, though tending to favour simpler, more open flowers that allow easy access for small bees. **Fig. 21:** Female *Lasioglossum xanthopusp*. The rich orange-buff bands on the metasoma distinguish the subspecies *soreli* from the nominate form. It may eventually prove to be a species in its own right. **Fig. 22:** Male *Sphecodes olivieri*. The female of this species is unusual in sometimes having extensive areas of red on the mesosoma. Despite being a frequent and distinctive species, flying from the late spring well into the early autumn, nothing seems to be known about its host. **Fig. 23:** Male *Dasypoda visnaga*. In a genus in which the cuticle is generally relentlessly black and where body hairs rapidly fade to a uniform grey, rendering identification trickier, the reddish-orange fore tibia of this species is a useful field recognition character. **Fig. 24:** For the crab spider *Synema globosum* the flowers of *Campanula rapunculus* provide a fertile hunting ground, that is certain to provide a visitor sooner or later. Here a male *Chelostoma rapunculi* falls victim. Note the prominent projection on the second sternite of the bee - its shape is important in determining the identity of many male *Chelostoma*. **Fig. 25:** Female *Heriades rubicola* capping her nest with a mixture of plant resin and small stones. **Fig. 26:** Male *Hoplitis bisulca*. On first emerging, the beautiful rich chestnut pelage and contrasting blue eyes combine with choice of flowers (*Scabiosa* and *Pycnocomon*) to make field recognition of the males of this species easy. Towards the end of their life the worn males are almost unrecognisable as virtually hairless, dull black shadows of their former glory.



Fig. 27: Female *Osmia andrenoides*. As with so many of the spring Megachilids, this distinctive species uses snail shells in which to nest. **Fig. 28:** A female *Anthidiellum strigatum* pausing on *Eryngium campestre* for nectar. **Fig. 29:** Female *Anthidium manicatum*. This species nests in pre-existing cavities and uses plant hairs to line the walls of the nest cells and form the nest closure, earning it the common name of "wool-carder bee". This female is just beginning to gather a ball of nest material from the pappus hairs of a *Sonchus* species. **Fig. 30:** Female *Afranthidium schulthessii*. This species is one of the few Palaearctic representatives of a largely sub-Saharan genus. **Fig. 31:** Male *Icteranthidium ferrugineum*. Like many Anthidiini, *Icteranthidium ferrugineum* males patrol on a regular circuit, returning again and again to the same spot. Unlike the hyperactive *Anthidium*, this "beat" is covered at a more leisurely pace interspersed with periods of perching. **Fig. 32:** *Rhodanthidium siculum* male. As with its congener, *Rhodanthidium sticticum*, males of this species guard empty snail shells, hoping to mate with females which use them as nest sites. Intruding males are driven off aggressively. As in this example, shells of the snail *Theba pisana* are frequently chosen. **Fig. 33:** *Stelis signata* female. *Stelis signata* belongs to the group of *Stelis* which bear a close resemblance to their host. In the field they can be difficult to distinguish from their host *Anthidiellum strigatum*. However, for every *Stelis* that matches the appearance of its host closely, a seemingly equal number appear to ignore this trend completely. **Fig. 34:** *Trachusa laeviventris* male. *Trachusa* are ground nesters and, unusually among Anthidiini, dig their own nests. This species nests in large aggregations in sloping areas of loose sand.



Fig. 35: *Ensliniana bidentata* female sitting and watching patiently near the entrance to the host nest. As the largest of the Portuguese Dioxyini, the host was thought likely to feature among the bigger species. And so it proved: at the one site where host data has been recorded it uses the large *Hoplitis zaianorum*. **Fig. 36:** *Dioxys cinctus* female. Much the most widespread and frequent of the Portuguese Dioxyini. **Fig. 37:** *Coelioxys argenteus* female. This attractive bee is one of the most distinctive *Coelioxys* and readily distinguishable in the field. It's the only Iberian member of the subgenus *Mesocoelioxys* and, appropriately enough, its host *Megachile albisepta* is also one of a kind: the sole Iberian representative of the subgenus *Creightonella*. **Fig. 38:** *Megachile* cf. *leachella* female. Most *Megachile* are leafcutters, lining their nests and forming the cell partitions from fragments of leaves. This female is cutting a long, oval segment that will form part of a cell wall. **Fig. 39:** *Megachile pilidens* collecting pollen from *Dittrichia viscosa*. Though there are several species of *Megachile* active in the spring, this is a genus containing many species that fly during the scorching Iberian summer heat of July and August and on well into October. **Fig. 40:** *Xylocopa violacea* male displaying its classic identification feature: the discrete orange underside to two of the antennal segments near the tip. **Fig. 41:** *Ceratina chalybea* male. One of the larger of the common species, *chalybea* has a circum-mediterranean distribution. **Fig. 42:** *Nomada illustris* male. Circumstantial evidence suggests this is a brood parasite of the common spring species *Andrena hispania* around whose nest sites it has been seen in numbers.



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Fig. 43: *Epeorus fallax* female. A distinctive *Epeorus* for more than one reason. Not only does it have a striking appearance but its flight season is also unusual. In Portugal it is on the wing from October into early November, a time of year when only late examples of *Epeorus variegatus* are likely to overlap. It flies alongside *Colletes succinctus*, the most likely host. **Fig. 44:** *Ammobatoides scriptus* male. Large and established aggregations of its host *Melitturga caudata* will often have several dozen *Ammobatoides* of both sexes in attendance. The ever-present *Melitturga* males seem to act as little deterrence to these bees and the female *Ammobatoides* can be watched entering the holes almost unchallenged. **Fig. 45:** *Ammobates punctatus* female. Despite having one of the most numerous and widespread of hosts, *Anthophora bimaculata*, this parasitic species never seems to reach the levels of local abundance that its congener *Ammobates muticus* sometimes achieves. **Fig. 46:** *Pasites maculatus* male. In Portugal at least, recent observations have consolidated the status of *Pseudapis monstrosa* as the probable host of this rare bee. **Fig. 47:** *Eucera elongatula* male. This species nests in dense and extensive aggregations. Early in the life cycle of the colony, males form a constant, noisy layer of zig-zagging bees over the nest site. Their collective buzz can be audible from some distance. **Fig. 48:** *Tetraloniella nana* male. *Limonium*, on which this bee is pictured, is merely a nectar source for both sexes. In Portugal it has so far only been recorded collecting pollen from *Althaea officinalis*. Whether it can use other Malvaceae, or whether this narrow choice is real and explains its apparent rarity, is as yet unknown. **Fig. 49:** *Amegilla quadrifasciata* female. Unfortunately from an aesthetic perspective, constant activity in full sun means that this species rapidly loses the attractive, rich orange-chestnut of this recently-emerged bee. **Fig. 50:** *Anthophora fulvodimidiata* male. One of the last of the *Anthophora* to emerge each year, fresh males are readily identified by their half orange, half black colour scheme (reflected in their specific name) and the neat flange of black hairs on the mid tarsus. Little is known about pollen preferences although Asteraceae, and especially *Carlina racemosa*, are a constant theme of recorded flower visits both in Portugal and Spain.



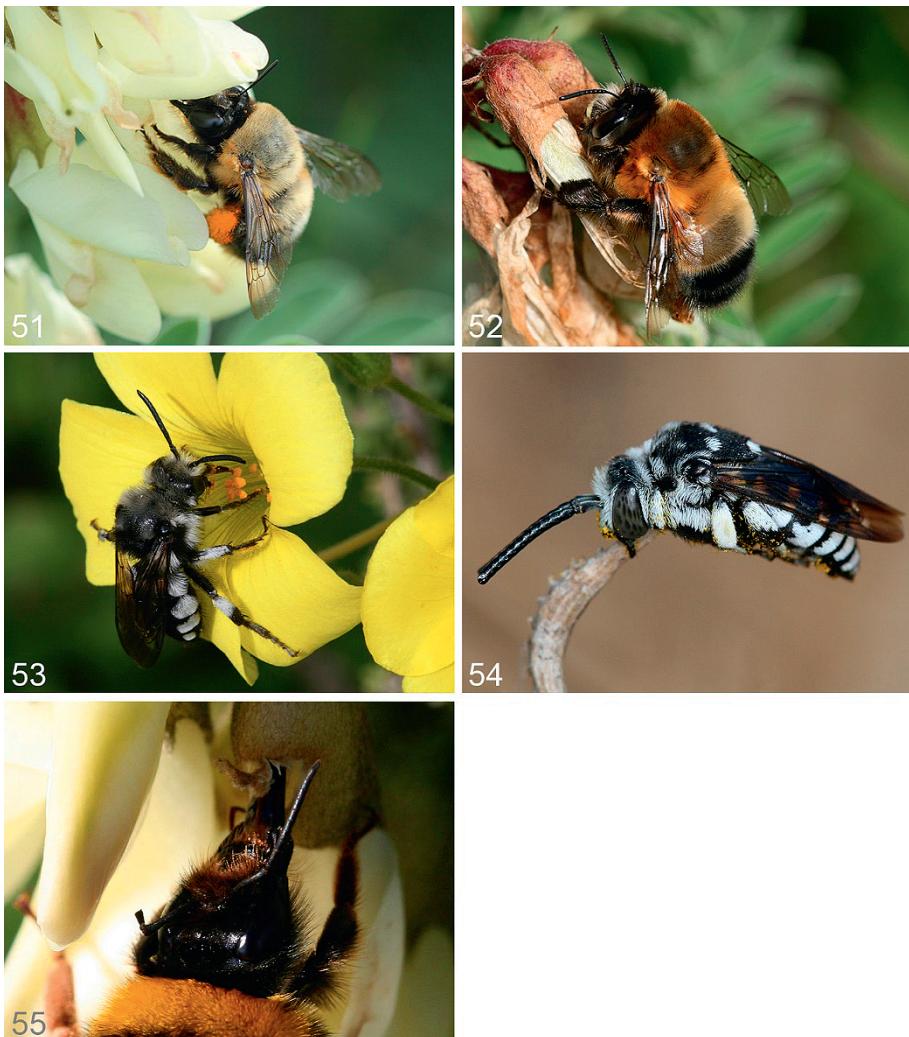


Fig. 51: *Anthophora hispanica* at flowers of *Erophaca baetica*. This early spring bee has almost finished its flight period by early April, with males appearing in the Algarve towards the end of January. Whilst quite local, it can be found in numbers at its favoured sites. **Fig. 52:** For comparison a fresh male *Anthophora hispanica* shows the dense brush of hairs on the second basitarsus. It also demonstrates the colour changes that take place as the bees age. **Fig. 53:** *Melecta albifrons* male. In southern Europe this wide ranging bee is represented by the subspecies *albovaria*, in which the pale brown hairs of ssp. *albifrons* males are replaced by white. In Portugal it is the only widespread and frequent *Melecta*. **Fig. 54:** *Thyreus ramosus* male. The only *Thyreus* to match *histriionicus* in being widespread and relatively frequent. None of the other species of the genus even approach this status. **Fig. 55:** *Bombus terrestris* queen robbing nectar from *Erophaca baetica*. Not having the very long tongue of other *Bombus* like *hortorum*, these bees prefer the easy route to access the nectar. They can be watched biting a hole through the calyx and, towards the end of January, a high proportion of the blossoms will bear these feeding scars.

