

## A CHECKLIST OF THE HOVERFLIES OF PORTUGAL (DIPTERA, SYRPHIDAE)

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**Abstract:** An annotated checklist of the hoverflies (Diptera, Syrphidae) of Portugal is presented. The checklist covers the Portuguese mainland, including the adjacent islands. Brief information on Diptera collections in Portugal is provided.

**Key words:** Diptera, Syrphidae, faunistics, checklist, Portugal.

### Listado de los sirfidos de Portugal (Diptera, Syrphidae)

**Resumen:** Se muestra un listado comentado de los sirfidos (Diptera, Syrphidae) de Portugal. El listado abarca el territorio continental portugués, incluyendo las islas adyacentes. Se proporciona una breve información sobre las colecciones de Diptera en Portugal.

**Palabras clave:** Diptera, Syrphidae, faunística, lista comentada, Portugal.

### Catálogo dos sirfídeos de Portugal (Diptera, Syrphidae)

**Resumo:** É apresentada uma lista comentada de espécies dos sirfídeos (Diptera, Syrphidae) de Portugal. A lista de espécies abrange Portugal continental, bem como as ilhas adjacentes. Fornece-se também uma breve informação sobre as colecções portuguesas de Diptera.

**Palavras chave:** Diptera, Syrphidae, faunística, lista comentada, Portugal.

Dedicated to Jan Lucas (Oudewater 1926 - Rotterdam 2009)

### Introduction

The Syrphidae fauna of the Portuguese mainland is poorly known. Dirickx (1994) lists 74 species, the Iberian Diptera checklist (Marcos-García *et al.*, 2002b) lists 86 species and 91 species are listed on the website of Fauna Europaea (September 2009).

A first two weeks visit in 2004 resulted in finding some new species for the Portuguese fauna. A publication about Syrphidae collected in Portugal by Lucas (1996), a result from his trip to the Algarve in 1985, had been missed by Marcos-García *et al.* (2002b). After the publication by Lucas (1996) and Marcos-García *et al.* (2002b), additions to the Portuguese mainland Syrphidae fauna remain limited. Enough motivation to start working on a revised checklist, of which the result is presented in this paper.

April 2006 followed the next trip, and after that, visits followed in 2007, 2008, 2009 and 2010. Meanwhile some people who mainly photographed insects, were encouraged to collect Syrphidae for study, which has resulted in several valuable additions to the checklist of Portugal.

### Methods and sources

The checklist by Marcos-García *et al.* (2002b) has been used as the primary reference for this article. The checklist below is the follow-up for this publication. Additions and changes are based upon the results of fieldwork, examination of museum and private collections, identification of photographic pictures and on literature. The database of Fauna Europaea has been held aside for comparison. But only for that purpose, because it lacks references to traceable sources. As for Marcos-García *et al.* (2002b), publications by Gomes (1978, 1980 and 1981) proved very important. As much as possible the published specimens were traced and re-examined in case this was required or strongly recommended.

Only those photographic pictures are used of which it is certain that they were taken in Portugal, and only if identification could be made with 100% certainty. Photographers have been stimulated to collect the specimens they photographed, especially those possibly new to the fauna of Portugal.

During all fieldtrips collecting was mainly carried out using a handnet. On two occasions (2004 and 2006) a Malaise trap was used for three days maximum on each occasion. Also recent material from other people's Malaise-traps (indicated in the text) has become available for examination. In 2010 the collecting of bulbs and looking for larvae in the field took place. These were reared at home.

The following abbreviations for persons and collections are being used:

- AB = Aat Barendregt, Voorthuizen, the Netherlands
- AR = Antonio Ricarte Sabater, Alicante, Spain
- AvE = André van Eck, Tilburg, the Netherlands
- BS = Bivar de Sousa, Lisbon, Portugal
- BMNH = The Natural History Museum (formerly British Museum of Natural History, NHM), London, United Kingdom
- CC = Claus Claussen, Flensburg, Germany
- CEUA = Colección Entomológica de la Universidad de Alicante, Alicante, Spain
- CIBIO/UP = Centro de Investigação em Biodiversidade e Recursos Genéticos, Universidade do Porto, Vairão, Portugal
- DD = Dieter Doczkal, Malsch, Germany
- DEEAN = Departamento de Entomologia da Estacao Agronómica Nacional (EAN), Oeiras, Portugal (now called INIA, see below)
- FMNH = Finnish Museum of Natural History, Helsinki, Finland
- FSAGx = Faculté universitaire des sciences agronomiques de Gembloux, Gembloux, Belgium
- GP = Gerard Pennards, Amersfoort, the Netherlands
- GR = Graham Rotheray, Edinburgh, United Kingdom
- IICT = Instituto de Investigação Científica Tropical, Lisbon, Portugal

INIA = Instituto Nacional de Investigação Agrária, Oeiras, Portugal  
 JA = Jorge Almeida, Viseu-Silgueiros, Portugal  
 JGS = José Manuel Grosso-Silva, Porto, Portugal  
 JL = J.A.W. Lucas, Rotterdam, Netherlands  
 JR = Joana I.C.C. Rosado, Évora, Portugal  
 MB = Museu Nacional de História Natural (MNHN), Museu Bocage, Lisboa, Portugal  
 MCT = Miguel Carles-Tolrà, Barcelona, Spain  
 MNCN = Museo Nacional de Ciencias Naturales, Madrid, Spain  
 MHNFCUP = Museu de História Natural da Faculdade de Ciências da Universidade do Porto, Porto, Portugal  
 MR = Menno Reemer, Amsterdam, the Netherlands  
 MZC = Museu Zoologica de Coimbra, Coimbra, Portugal  
 MZLU = Museum of Zoology Lund University, Lund, Sweden  
 NNKN = Natuurmuseum Brabant, Tilburg, the Netherlands  
 RA = Rui A.M. Andrade, Barcelos, Portugal  
 RCF = Ricardo Cascalho Ferreira, São Mamede de Infesta, Portugal  
 VJ = Valter Jacinto, Faro, Portugal  
 ZMAN = Zoologisch Museum, Amsterdam, the Netherlands (the collection of J.A.W. Lucas has been donated to the ZMAN)

### Short notes on some Portuguese diptera collections

During the research for this checklist most of the existing collections within Portugal, containing or presumed to contain Syrphidae, have been visited. Effort has been made to verify all natural history collections, with potential of having hoverflies. In order to provide some information for future research, a short summary of the findings are presented in this paragraph, listed per location, in alphabetical order. It can also be seen as a plea for existing collections on the Portuguese mainland to stimulate the study of hoverflies and to find ways to improve their collection's policies, especially on the subject of preserving and curating.

Coimbra: MZC, Museu Zoologica de Coimbra. Largo Marquês de Pombal, 3000-272 Coimbra. Tel. +351 239 85 43. 50, Fax +351 239 85 43 59. Contact: Maria Graça Vale (mgvale@enc.cj.uc.pt) or José Augusto (jreis@ci.uc.pt). Contains an important, but not well preserved collection of hoverflies. It also contains the oldest flies found in any collection so far. The collection has been decontaminated quite recently, but the boxes are unfit for keeping flies safe. Also the future of the collection remains uncertain, due to changing policies after several fusions of institutes and museums in Coimbra. In the near future this collection will be transferred to the new Museu da Ciência (Universidade de Coimbra), email geral@museudaciencia.org.

Lisbon: António Bivar de Sousa, private collection. Mr. António Bivar de Sousa is the secretary of the Portuguese entomological society (Sociedade Portuguesa de Entomologia). His small Diptera collection is being stored at the entomological society office. Contact: abivarsousa@gmail.com.

IICT, Instituto de Investigação Científica Tropical. Zoological collection, Rua da Junqueira 86, 1300-344, Lisboa. Tel. +351 213600531/213616340, iict@iict.pt. Contact: Luis F. Mendes, luis.mendes@iict.pt. Contains few Portuguese material. Information on the labels under the pinned specimen is limited, but in combination with a number on the label. This is administrated on paper in a separate log, which can be quite risky in the unfortunate case the log would get lost or destroyed.

MB, Museu Nacional de História Natural (MNHN), Museu Bocage, Zoologia - Entomologia. Universidade de Lisboa. Rua da Escola Politécnica 56/58, 1250-102, Lisboa. Tel. ++351 213965853. Contact: Alexandra Marçal Correia, am.correia@fc.ul.pt. The collection was destroyed by a fire in the 1970's. Also all administration got lost in the fire. They recently received the N.N. Mendoça collection though, with insects caught mainly from the 1970's to the 1980's by several members of the family. The collection as a whole is kept in a

very good state; the single box with hoverflies contains some very interesting species.

Oeiras: INIA, Instituto Nacional de Investigação Agrária, Oeiras. Quinta do Marquês, Av<sup>a</sup> da República, 2784-505 Oeiras, Lisboa. Tel. +351 214416855. Contact: Célia I.M. Mateus, tel. +351 214403500 (ask to talk to 4434), celia.mateus@inrb.pt. This is the collection cited as 'Estação Agronómica Nacional' (EAN) in earlier publications (eg. Gomes 1978, 1981) or as 'Centro de Zoologia' (Gomes, 1980). The collection has for a major part been revised by Dr. Alexandre Gomes. Together with the collection in Coimbra, this is the largest hoverfly collection existing in Portugal. Specimens and administration are split up. Under each specimen there is usually just one label with a number, which refers to a card-index. The nearby IGC (Oeiras) does not have a Diptera collection (pers. comm. A. Gomes).

Porto: CIBIO/UP, Centro de Investigação em Biodiversidade e Recursos Genéticos, Universidade do Porto. Campus Agrário de Vairão, 4485-661, Vairão. Tel. +351 252660428 or +351 252660400 ext. 73, Fax: +351 252661780. Contact: J.M. Grosso-Silva, jmgrossosilva@gmail.com. It is a very small hoverfly collection (as well as other Diptera), which is mainly being stored on alcohol.

MHNFCUP, Museu de História Natural, Reitoria da Universidade de Porto, Porto. Praça Gomes Teixeira, 4099-002, Porto. Tel. +351 223401400 or +351 223401471. Contact: Luzia Sousa. The Natural History Museum of Porto. The collection holds 45 specimens of hoverflies of trivial species, for educational purposes.

Viseu: Jorge Mota Almeida, private collection. Contact: jorgemotalmeida@gmail.com. A recent and small but growing Diptera collection.

### Systematics and nomenclature

This checklist follows the systematics used by Marcos-García *et al.* (2002b).

Nomenclature is based on Speight (2010), except for the genus *Merodon* of which the nomenclature is based on the Iberian revision by Marcos-García *et al.* (2007).

### The checklist of the Syrphidae of the Portuguese mainland

Legend: E = endemic on the Iberian Peninsula, incl. Pyrenees. N = new to the fauna of the Portuguese mainland. ● = see: Remarks to some species.

<b>MICRODONTINAE</b>	
	<b>Microdon</b> Meigen, 1803
●	<i> analis</i> (Macquart, 1842)
<b>ERISTALINAE</b>	
N	<b>Anasimyia</b> Schiner, 1964
N ●	<i> contracta</i> Claussen & Torp, 1980
<b>Callicera</b> Panzer, 1809	
N ●	<i> rufa</i> Schummel, 1842
<b>Ceriana</b> Rafinesque, 1815	
N ●	<i> conopsoides</i> (Linnaeus, 1758)
	<i> vespiiformis</i> (Latreille, 1804)
N	<b>Chalcosyrphus</b> Curran, 1925
N ●	<i> nemorum</i> (Fabricius, 1805)
<b>Cheilosia</b> Meigen, 1822	
●	<i> albitarsis</i> (Meigen, 1822)
N ●	<i> fraterna</i> (Meigen, 1822)
N ●	<i> frontalis</i> Loew, 1857
N ●	<i> hypena</i> Becker, 1894
N ● E	<i> iberica</i> Marcos-García & Claussen, 1989
N ●	<i> laticornis</i> (Rondani, 1857)
N ●	<i> latifrons</i> (Zetterstedt, 1843)
N ●	<i> pagana</i> (Meigen, 1822)
N ●	<i> paralobi</i> Malski, 1962
N ●	<i> proxima</i> (Zetterstedt, 1843)
N ●	<i> rodgersi</i> Wainwright, 1911
N ●	<i> scutellata</i> (Fallen, 1817)

<b>ERISTALINAE (cont.)</b>	
	<b>Cheilisia</b> Meigen, 1822 (cont.)
•	<i>soror</i> (Zetterstedt, 1843)
N •	<i>urbana</i> (Meigen, 1822)
N •	<i>variabilis</i> (Panzer, 1798)
N •	<i>vernalis</i> (Fallén, 1817)
	<b>Chrysogaster</b> Meigen, 1803
•	<i>basalis</i> Loew, 1857
N •	<i>solstitialis</i> (Fallén, 1817)
N	<b>Criorhina</b> Meigen, 1822
N •	<i>berberina</i> (Fabricius, 1805)
N •	<i>ranunculi</i> (Panzer, 1805)
	<b>Eristalinus</b> Rondani, 1845
	<i>aeneus</i> (Scopoli, 1763)
•	<i>megacephalus</i> (Rossi, 1794)
	<i>sepulchralis</i> (Linnaeus, 1758)
	<i>taeniops</i> (Wiedemann, 1818)
	<b>Eristalis</b> Latreille, 1804
	<i>arbustorum</i> (Linnaeus, 1758)
N •	<i>horticola</i> (DeGeer, 1776)
N •	<i>memorum</i> (Linnaeus, 1758)
N •	<i>pertinax</i> (Scopoli, 1763)
	<i>similis</i> (Fallén, 1817)
	<i>tenax</i> (Linnaeus, 1758)
	<b>Eumerus</b> Meigen, 1822
	<i>amoenus</i> Loew, 1848
N •	<i>argyropus</i> Loew, 1848
	<i>barbarus</i> (Coquebert, 1804)
•	<i>bayardi</i> Séguy, 1961
	= <i>micans</i> (Fabricius, 1798)
N •	<i>consimilis</i> Simic & Vujić, 1996
•	<i>etnensis</i> Van der Goot, 1964
	= <i>nigrostriatus</i> Lambeck, 1973
	<i>pulchellus</i> Loew, 1848
	<i>pusillus</i> Loew, 1848
N •	<i>sogdianus</i> Stackelberg, 1952
•	<i>strigatus</i> (Fallén, 1817)
N •	<i>subornatus</i> Claussen, 1989
N •	<i>sulcitibius</i> Rondani, 1868
	<b>Ferdinandea</b> Rondani, 1844
•	<i>cuprea</i> (Scopoli, 1763)
•	<i>fumipennis</i> Kassebeer, 1999
	<b>Helophilus</b> Meigen, 1822
N •	<i>pendulus</i> (Linnaeus, 1758)
•	<i>trivittatus</i> (Fabricius, 1805)
N	<b>Lejogaster</b> Rondani, 1857
N •	<i>metallina</i> (Fabricius, 1781)
N •	<i>tarsata</i> (Meigen, 1822)
N	<b>Mallota</b> Meigen, 1822
N •	<i>dusmeti</i> Andréu, 1926
•	<b>Melanogaster</b>
•	<i>hirtella</i> Loew, 1843
	<b>Merodon</b> Meigen, 1803
•	<i>aberrans</i> Egger, 1860
•	<i>albifrons</i> Meigen, 1822
N •	<i>avidus</i> A Milankov <i>et al.</i> , 2001
N •	<i>bicolor</i> Gil Collado, 1930
	= <i>avidus</i> B sensu Milankov <i>et al.</i> , 2001
•	<i>chalybeus</i> Wiedemann, 1822
	= <i>spicatus</i> Becker, 1907
•	<i>clavipes</i> (Fabricius, 1781)
•	E <i>crypticus</i> Marcos-García, Vujić & Mengual, 2007
N •	<i>equestris</i> Fabricius, 1794
N •	E <i>escorialensis</i> Strobl in Czerny & Strobl, 1909
N •	<i>flavus</i> Sack, 1913
N •	<i>funestus</i> (Fabricius, 1794)
•	<i>geniculatus</i> Strobl, 1909
N •	<i>longicornis</i> Sack, 1913
N •	<i>luteihumerus</i> Marcos-García, Vujić & Mengual, 2007
N •	<i>obscuritarsis</i> Strobl in Czerny & Strobl, 1909
•	<i>parietum</i> Wiedemann in Meigen, 1822
N •	<i>pumilus</i> Macquart in Lucas, 1849
•	<i>serrulatus</i> Wiedemann, 1822
	= <i>lusitanicus</i> Hurkmans, 1993
N •	E <i>unguicornis</i> Strobl in Czerny & Strobl, 1909
•	<i>unicolor</i> Strobl in Czerny & Strobl, 1909
	<b>Milesia</b> Latreille, 1804
•	<i>crabroniformis</i> (Fabricius, 1775)
N •	<i>semiluctifera</i> (Villers, 1798)

<b>ERISTALINAE (cont.)</b>	
	<b>Myathropa</b> Rondani, 1845
	<i>florea</i> (Linnaeus, 1758)
	<b>Myolepta</b>
•	<i>difformis</i> (Strobl, 1909)
	<b>Neoascia</b> Williston, 1886
N •	<i>geniculata</i> (Meigen, 1822)
N •	<i>interrupta</i> (Meigen, 1822)
	<i>podagrica</i> (Fabricius, 1775)
N •	<i>tenur</i> (Harris, 1780)
	<b>Parhelophilus</b> Girschner, 1897
•	<i>crococoronatus</i> Reemer, 2000
	<i>versicolor</i> (Fabricius, 1794)
	<b>Pelecocera</b> Meigen, 1822
	<i>lusitanica</i> Mik, 1898
	<i>tricincta</i> Meigen, 1822
	<b>Platynochaetus</b> Wiedemann, 1830
•	<i>setosus</i> (Fabricius, 1794)
	<b>Psilota</b> Meigen, 1822
N •	<i>atra</i> (Fallén, 1817)
•	<i>innupta</i> Rondani, 1857
	= <i>Pipiza</i> ( <i>Heringia</i> ) <i>curvinervis</i> Strobl, 1898
	<b>Riponnensia</b> Maibach, 1994
•	<i>longicornis</i> (Loew, 1843)
	<i>splendens</i> (Meigen, 1822)
N	<b>Sericomyia</b> Meigen, 1803
N •	E <i>hispanica</i> Peris, 1962
N	<b>Sphegina</b> Meigen, 1822
N •	E <i>limbipennis</i> Strobl, 1909
	<b>Spilomyia</b> Meigen, 1803
•	<i>digitata</i> (Rondani, 1865)
•	<i>saltuum</i> (Fabricius, 1794)
	<b>Syritta</b> Lepeletier & Serville, 1828
	<i>flaviventris</i> Macquart, 1842
	<i>pipiens</i> (Linnaeus, 1758)
	<b>Volucella</b> Geoffroy, 1762
N •	<i>bombylans</i> (Linnaeus, 1758)
•	<i>elegans</i> Loew, 1862
N •	<i>inanis</i> (Linnaeus, 1758)
N •	<i>pellucens</i> (Linnaeus, 1758)
•	<i>zonaria</i> (Poda, 1761)
	<b>Xylota</b> Meigen, 1822
	<i>segnis</i> (Linnaeus, 1758)
N •	<i>sylvarum</i> (Linnaeus, 1758)
	<b>SYRPHINAE</b>
	<b>Baccha</b> Fabricius, 1805
	<i>elongata</i> (Fabricius, 1775)
	<b>Chrysotoxum</b> Meigen, 1803
N •	<i>bicinctum</i> (Linnaeus, 1758)
•	<i>elegans</i> Loew, 1841
•	<i>fasciolatum</i> (De Geer, 1776)
	<i>intermedium</i> (Meigen, 1822)
•	<i>latifasciatum</i> Becker, 1921
•	<i>octomaculatum</i> Curtis, 1837
	<i>vernale</i> Loew, 1841
	<b>Dasysyrphus</b> Enderlein, 1937
	<i>albostrigatus</i> (Fallén, 1817)
	<b>Didea</b> Macquart, 1834
	<i>fasciata</i> Macquart, 1834
	<b>Epistrophe</b> Walker, 1852
•	<i>eligans</i> (Harris, 1780)
	<b>Episyrphus</b> Matsumura & Adachi, 1917
	<i>balteatus</i> (De Geer, 1776)
	<b>Eupeodes</b> Osten Sacken, 1877
•	<i>bucculatus</i> (Rondani, 1857)
	<i>corollae</i> (Fabricius, 1794)
•	<i>lapponicus</i> (Zetterstedt, 1838)
	<i>latifasciatus</i> (Macquart, 1829)
N •	<i>lucasi</i> (Marcos-García & Láska, 1983)
•	<i>luniger</i> (Meigen, 1822)
N •	<i>nielsenii</i> Dušek & Láska, 1976
N •	<i>nuba</i> (Wiedemann, 1830)
	<b>Heringia</b> Rondani, 1856
•	<i>heringi</i> (Zetterstedt, 1843)
•	<i>latitarsis</i> (Egger, 1865)
•	<i>vitripennis</i> (Meigen, 1822)
	<b>Melanostoma</b> Schiner, 1860
	<i>mellinum</i> (Linnaeus, 1758)

<b>SYRPHINAE (cont.)</b>	
N	<b>Meligramma</b> Frey, 1946
	<i>scalare</i> (Fabricius, 1794)
N	• <i>cingulata</i> (Egger, 1860)
N	• <i>euchroma</i> (Kowarz, 1885)
	<b>Meliscaeva</b> Frey, 1946
	<i>auricollis</i> (Meigen, 1822)
	<b>Paragus</b> Latreille, 1804
	• <i>albifrons</i> (Fallén, 1817)
	• <i>bicolor</i> (Fabricius, 1794)
N	• <i>bradescui</i> Stanesco, 1981
	• <i>haemorrhous</i> Meigen, 1822
	• <i>pecchiolii</i> Rondani, 1857
	• <i>quadrifasciatus</i> Meigen, 1822
	• <i>strigatus</i> Meigen, 1822
	• <i>tibialis</i> (Fallén, 1817)
	• <i>vandergooti</i> Marcos-García, 1986
	<b>Pipizella</b> Rondani, 1856
	• <i>annulata</i> (Macquart, 1829)
N	• E <i>lynborgi</i> Torp Pedersen, 1971
	• <i>thapsiana</i> Kassebeer, 1995
	<b>Platycheirus</b> Lepeletier & Serville, 1828
N	• <i>albimanus</i> (Fabricius, 1781)
N	• <i>ambiguus</i> (Fallén, 1817)
	• <i>clypeatus</i> (Meigen, 1822)
N	• <i>fulviventris</i> (Macquart, 1829)
N	• <i>rosarum</i> (Fabricius, 1787)
	• <i>scutatus</i> (Meigen, 1822)
	<b>Scaeva</b> Fabricius, 1805
	• <i>albomaculata</i> (Macquart, 1842)
	• <i>dignota</i> (Rondani, 1857)
N	• <i>mecogramma</i> (Bigot, 1860)
	• <i>pyrastris</i> (Linnaeus, 1758)
N	• <i>selenitica</i> (Meigen, 1822)
	<b>Sphaerophoria</b> Lepeletier & Serville, 1828
	• <i>rueppelli</i> (Wiedemann, 1830)
	• <i>scripta</i> (Linnaeus, 1758)
	• <i>taeniata</i> (Meigen, 1822)
	<b>Syrphus</b> Fabricius, 1775
	• <i>ribesii</i> (Linnaeus, 1758)
	• <i>vitripennis</i> Meigen, 1822
N	<b>Triglyphus</b> Loew, 1840
N	• <i>escalerai</i> Gil Collado, 1929
	<b>Xanthandrus</b> Verrall, 1901
	• <i>comtus</i> (Harris, 1780)
	<b>Xanthogramma</b> Schiner, 1860
	• <i>dives</i> (Rondani, 1857)
	• <i>marginale</i> (Loew, 1854)
	• <i>pedissequum</i> (Harris, 1776)

### Remarks to some species

With every new species to the fauna of mainland Portugal, supporting data are given. Also in some other cases, the listed species is supported by supplementary data, e.g. when it concerns rare, doubtful or poorly published species. Or other interesting information. All these species are marked with an asterisk (\*) in the checklist presented here.

UTM coordinates are added to specify locations, also if not present on the labels with the specimen (s). In some cases it was not possible to find the coordinates.

#### • *Anasimyia contracta*

New genus and species to Portugal.

From the northwest region of Portugal there is one recent record, which is listed here.

This is the first citation of this genus from the Iberian Peninsula.

COLLECTED SPECIMENS: 1m, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col.

#### • *Callicera rufa*

New species to Portugal

Corti (1903) listed an unidentified female *Callicera* from the Peneda-Gerês National Park. He writes about this: 'Corrisponde

all'*aenea* Fbr. (...) ma difetta completamente di strie al torace.' (Translation: Similar to *aenea*, but the stripes on the thoracic dorsum completely lacking).

COLLECTED SPECIMENS: 1f, Fátima, 29S528-4385, 7.IX.1956, N. Mendonça leg, MB col.

#### • *Ceriana conopsoides*

New species to Portugal.

The only reference available is from a recent photograph; it has not been collected.

PHOTOGRAPHICAL MATERIAL: 1f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, on *Foeniculum vulgare*, 30.VI.2010, AvE det, JA photo.

#### • *Chalcosyrphus nemorum*

New genus and species to Portugal.

COLLECTED SPECIMENS: 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 28.III.2008, AvE leg & col; 1f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 10-20.IX.2009, Malaise-trap, JA leg & col; 1m, Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010, AvE leg & col; 1m, Abrantes, 29S566-4368, +50m, 16.X.2010, AvE leg & col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 1f, Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010.

#### • *Cheilosia albitarsis*

Published for the first time by Lucas (1996), who mentions one male from Caldas do Gerez, 6-7.V.1967.

Turns out to be a common species in Portugal. In the INIA collection remain two more males, without further data.

COLLECTED SPECIMENS: 3m & 2f, Coimbra, [approx. 1900; AvE], MZC col; 1m, Terras do Bouro, Caldas do Gerês, 6-7.V.1967, Van Ooststroom leg, ZMAN col; 2m, Portalegre, Monte Carvalho, 22.IV.1999, MR leg. & col; 4m & 1f, Aveiro, Veiros, 29T534-4511, +10m, 13.IV.2006, AvE leg & col; 2m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col; 2m, Batalha, Casal do Marra, 29S513-4390, +120m, 24.III.2008, AvE leg & col; 2m, Batalha, Casal da Amieira, 29S513-4389, +120m, 26.III.2008 AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 27.III.2008 AvE leg & col; 1m, Vila Nova de Gaia, Avintes, 29T537-4550, 22.IV.2009, RA leg, AvE col; 1f, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 2m & 1f, Aveiro, Veiros, 29T534-4511, +10m, 13.IV.2006; 15m & 5f, Aveiro, Veiros, 29T534-4511, +10m, 24.III.2008; 5sp., Batalha, Casal do Marra, 29S513-4390, +120m, 24.III.2008; 13sp., Batalha, Casal da Amieira, 29S513-4389, +120m, 26.III.2008.

#### • *Cheilosia fraterna*

New species to Portugal.

COLLECTED SPECIMENS: 1m, Medas, 29T546-4545, +40m, 17.IV.2006, AvE leg, CC col; 1m, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, on *Caltha palustris* L, AvE leg & col; 1m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col.

#### • *Cheilosia frontalis*

New species to Portugal.

COLLECTED SPECIMENS: 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, AvE leg & col; 2m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 26.III.2008, AvE leg & col; 1m & 3f, Porto de Mós, Rio Alcaide, 29S516-438, +150m, on *Salix* L. catkins, 25.II.2009, AvE leg & col; 1m & 3f, Batalha, Casal da Amieira, 29S513-4389, +120m, on *Salix* catkins, 27.II.2009, AvE leg & col.

#### • *Cheilosia hypena*

New species to Portugal.

In Portugal found from sea-level (and actually in the vicinity of the coast) up to almost 1000 meters altitude.

COLLECTED SPECIMENS: 1f, Oliveira de Frades, 29T569-4509, [approx. 1900; AvE], anonymus leg, ZMC col; 1m & 3f, Aveiro,

Veiros, 29T534-4511, +10m, 13.IV.2006, AvE leg & col; 3m & 1f (1m on *Saxifraga granulata* L.), Montalegre, Frades, 29T594-4630, +940m, 23.IV.2006, AvE leg, AvE & CC col; 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 23.IV.2006, AvE leg & col; 1m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col; 1m, Barcelos, Gilmonde, 29T528-4595, 21.III.2008, RA leg, AvE col; 1f, Vila Nova de Gaia, Avintes, 29T537-4550, 22.IV.2009, RA leg, AvE col; 1m, Vila Nova de Gaia, Parque Biológico Vila Nova de Gaia, 29T537-4549, +80m, 2.VII.2009, JGS leg & col; 1f, Viana do Castelo, Carreço, 29T511-4621, 10.VII.2009, RA leg, AvE col; 1m, Estarreja, Salreu, 29T537-4509, 31.V.2010, RA leg, AvE col; 1f, Vila Nova de Gaia, Parque Biológico Vila Nova de Gaia, 29T537-4549, +80m, 21.X.2010, AvE leg & col.

• ***Cheilosia iberica***

New species to Portugal.

So far found merely in the northeastern part of Portugal. Not uncommon there, but maybe only locally. Figure 1.

COLLECTED SPECIMENS: 1m & 1f, Guarda, IV.1887, MZC col; 1m & 1f, Montalegre, Frades, 29T594-4630, +940m, 23.IV.2006, 1m on *Taraxacum officinale* F.H. Wigg., AvE leg & col; 1f, Montalegre, Mourilhe, 29T595-4632, +960m, on *Ranunculus* L. sp., 25.IV.2006, AvE leg & col; 4m & 2f, Guarda, 29T644-4488, +930m, 16.IV.2007, AvE leg, AvE & CC col; 4m & 1f, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg, AvE & CC col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 20m & 20f, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007.

• ***Cheilosia laticornis***

New species to Portugal.

COLLECTED SPECIMENS: 1f, Fundão, Castelo Novo, +900 m, 2.VI.1981, AB leg & col.

• ***Cheilosia latifrons***

New species to Portugal.

This species has been confirmed from two localities in Portugal.

COLLECTED SPECIMENS: 1m, Montargil, 29S571-4325, 25.V.1978, N. Mendonça leg, MB col; 1f, Batalha, Casal da Amieira, 29S613-4390, +120m, 28.III.2008, AvE leg & col.

• ***Cheilosia pagana***

New species to Portugal.

COLLECTED SPECIMENS: 1f, Ponte de Lima, 29T534-4624, +10 m, 14.IV.2006, on *Ranunculus* L. sp, AvE leg & col.

• ***Cheilosia paralobi***

New species to Portugal.

This is a rather common species in Portugal.

COLLECTED SPECIMENS: 3m & 2f, Portalegre, Monte Carvalho, 22.IV.1999, MR leg & col; 2m & 1f, Figueira de Castelo Rodrigo, 29T671-4529, +640 m, 19.IV.2006, AvE leg & col; 2m, Figueira de Castelo Rodrigo, 29T671-4529, +640 m, 20.IV.2006, AvE leg, AvE & GP col; 1f, Vila Nova de Milfontes, 29S519-4174, +10 m, 8.IV.2007, AvE leg & col; 2m & 2f, Porto de Mós, Alvados, 29S519-4377, +260 m, 12.IV.2007, AvE leg & col; 3f, Guarda, Chãos, 29T642-4489, +800 m, 17.IV.2007, AvE leg & col; 3m, Porto de Mós, Rio Alcaide, 29S516-438, +150m, 25.II.2009, AvE leg & col; 2f, Batalha, Casal da Amieira, 29S513-4389, +120 m, 27.II.2009, 1f on *Salix* sp. catkins, AvE leg & col; 1f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 10-20.IX.2009, Malaise-trap, JA leg & col; 1m, Serra da Estrela, Manteigas, 29T622-4474, +1240 m, 19.VII.2010, AvE leg & col; 1m, Coja, Pisão, 29T588-4456, +230 m, 20.VII.2010, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120 m, 27.VII.2010, AvE leg & col; 1m & 1f, Serra de Santo António, 29S521-4375, +500m, 4.VIII.2010, AvE leg & col.

• ***Cheilosia proxima***

New species to Portugal.

COLLECTED SPECIMENS: 1f, Serra da Estrela, Manteigas, 29T622-4474, +1240 m, 19.VII.2010, AvE leg & col.

• ***Cheilosia rodgersi***

New species to Portugal.

Apparently a rare species, of which only very few specimens are known from the Iberian Peninsula. It is an example of a Syrphidae species spreading its north african range to the Iberian Peninsula (Claussen, 1989b, 1993). Identification of this sole female has been verified and confirmed by C. Claussen.

COLLECTED SPECIMENS: 1f, Fátima, 29S528-4385, 22.X.1972, N. Mendonça leg, MB col.

• ***Cheilosia scutellata***

New species to Portugal.

In the INIA-collection remain 9 males and 2 females, without further data.

COLLECTED SPECIMENS: 2m, Oliveira de Frades, 29T569-4509, [approx. 1900; AvE], MZC col; 1f, Serra da Arrábida, Rib. da Comenda, 29S505-426, +12 m, 31.V.2004, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120 m, 8.VII.2008, AvE leg & col; 1f, Serra da Estrela, Manteigas, 29T622-4474, +1240 m, 19.VII.2010, AvE leg & col; 2m & 1f, Abrantes, 29S566-4368, +50 m, 16.X.2010, AvE leg & col; 1m, Abrantes, castelo, on *Hedera* sp. L., 29S569-4368, +170 m, 17.X.2010, AvE leg & col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 10m & 2f, Abrantes, 29S566-4368, +50m, 16.X.2010.

• ***Cheilosia soror***

This species has recently been published for Portugal by Ricarte & Lyszkowski (2010).

In the INIA-collection remain 1 male and 1 female, without further data, but probably from Portugal.

• ***Cheilosia urbana***

New species to Portugal.

COLLECTED SPECIMENS: 1f, Montalegre, Frades, 29T594-4630, +940m, 23.IV.2006, AvE leg & col; 1m & 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, 1f on *Saxifraga granulata* L., AvE leg & col; 1m, Serra da Estrela, Seia, Lagoa Comprida, 29T615-4469, +1600m, 14.IV.2007, AvE leg & col.

• ***Cheilosia variabilis***

New species to Portugal.

In the INIA-collection remain 2 males and 2 females, without further data.

COLLECTED SPECIMENS: 1m, Medas, 29T546-4545, +40m, 17.IV.2006, AvE leg & col; 1m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col; 1m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col; 1m, Batalha, Casal do Marra, 29S513-4390, +120m, 24.III.2008, AvE leg & col; 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 26.III.2008, AvE leg & col; 1f, Vila Nova de Gaia, Oliveira do Douro, Parque Municipal da Lavandeira, 29T5340-45523, 21.IV.2009, RA leg, AvE col; 1f, Vila Nova de Gaia, Avintes, 29T537-4550, 22.IV.2009, RA leg, AvE col.

• ***Cheilosia vernalis***

New species to Portugal.

COLLECTED SPECIMENS: 1f, Batalha, Casal do Marra, 29S513-4390, +120m, 24.III.2008, AvE leg & col; 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 26.III.2008, AvE leg & col; 1m, Barcelos, Gilmonde, 29T528-4595, 10.III.2009, RA leg, AvE col; 1f, Barcelos, Gilmonde, 29T528-4595, 20.III.2009, RA leg, AvE col.

• ***Chrysogaster basalis***

Mentioned for Portugal only by Speight (2008). It is unknown where the specimen is. Through recent catches the presence of this species can be confirmed.

COLLECTED SPECIMENS: 1m, Valongo, Campo, 29T545-4559, 6.V.2010, RA leg, AvE col; 1f, Serra da Estrela, Manteigas, 29T622-4474, +1240m, 19.VII.2010, AvE leg & col.

● ***Chrysogaster solstitialis***

New species to Portugal.

Identification of the specimens listed below using Speight & Sarthou (2010) leads to *C. mediterraneus* Vujić, 1999. However, identifying these specimens with Vujić (1999) confirms that these actually belong to *C. solstitialis*.

Another species, *C. simplex* Loew, 1843 has been listed by Marcos-García *et al.* (2002b) based on a publication by Speight & Lucas (1992), but not mentioned anymore by Speight (2010). Speight (2008) writes about this species: 'the male of this species has never been described. The female is included in the keys provided by Bradescu (1991), but the features he uses to distinguish it from the female of *C. solstitialis* are not convincing'. Speight & Lucas (1992) only mention one female specimen from Portugal. It is not known where this specimen is. For this reason I have decided not to list this *C. simplex* for the Portuguese fauna.

COLLECTED SPECIMENS: 2m & 4f, Pardieiros, Mata da Margarça, 29T591-4452, +590m, 20.VII.2010, AvE leg & col.

● ***Chrysotoxum bicinctum***

New species to Portugal.

Only once found in the north of Portugal, from the Peneda-Gerês National Park.

COLLECTED SPECIMENS: 1f, Dorna (Melgaço), P.N.P.G., 10.VII.1996, JGS leg & col.

● ***Chrysotoxum elegans***

Gomes (1978) cites Nobre & Braga (1942), who find three specimens at the island of Berlenga. They write about *C. elegans* 'Frequente no país' (Frequent in the country; transl. AvE). I have not found these specimens. Two males at the MZC collection proved to be misidentified and belong to *C. octomaculatum* and another one presumably is *C. latifasciatum* (see below). It is possible that old records of *C. elegans* are misidentified and may belong to *C. octomaculatum/latifasciatum* instead.

● ***Chrysotoxum fasciolatum***

Only listed by Corti (1903) by one female from the Peneda-Gerês National Park, without giving further data. Mentioned by Dirickx (1994), who remarks: 'La citation du Portugal est ancienne (Corti, 1903) et n'a pas été confirmée. On notera aussi l'absence de fasciolatum de l'Espagne.' Presence of this species needs to be confirmed in the future.

● ***Chrysotoxum latifasciatum***

Fauna Europaea lists both taxa *latifasciatum* and *octomaculatum*. Gomes (1978) cites Seguy (1961) to present *C. latifasciatum* as a Portuguese mainland species, without giving further data.

There is discussion about the identity of *latifasciatum*, being just a large variety of *octomaculatum* or a separate species (Speight, 2008, 2010). Indeed, in the ZMC collection I found both species (erroneously identified as *C. elegans*) from the same date and location, which gives enough reason for doubt. There is great need of solving this confusing matter.

COLLECTED SPECIMENS: 1m [as *Chrysotoxum elegans*, det. Gobert; AvE], Vella [it is unclear which location this is; There is one "Vela" near Guarda, where it could well have been collected by Paulino de Oliveira in 1885, as he collected beetles in that locality during the same decade; pers. comm. JGS], VI.1885, anonymus leg, MZC col.

● ***Chrysotoxum lineare*** (Zetterstedt, 1819)

Listed by Peck (1988) and subsequently listed by Speight (2008). It is not known to me in which collection it is being kept. Dirickx (1994) does not mention it for Portugal. Also Marcos-García *et al.* (2002b) do not mention it. Though this is a rather distinctive species, it seems to be far out of its European range and it has not been recorded from Spain either.

Therefore I will not list this species for the Portuguese mainland.

● ***Chrysotoxum octomaculatum***

One recent record from Serra da Estrela (Ricarte *et al.*, 2009), depo-

sited in the CEUA collection, confirms the occurrence of this species. In the INIA-collection remain two more specimens, without further data. Found in the MZC collection, misidentified as *Chrysotoxum elegans*. It is not clear where the location 'Vella' is located. COLLECTED SPECIMENS: 2m, Vella, VI.1885, MZC col; 1f (dead in swimming pool), Serra da Estrela, Manteigas, 29T623-4473, 22.VIII.2001, JGS leg & col.

● ***Criorhina berberina***

New genus and species to Portugal.

Reared from one pupa, collected on the 9<sup>th</sup> of January, found together with four pupae of *Cr. ranunculi* (see below). The fly emerged on the 25<sup>th</sup> of that month. The emerged fly clearly shows aberrant coloration of the hairs on thorax and abdomen, compared with Central and Northwest European specimens (Stubbs & Falk, 1983; Van der Goot, 1981).

COLLECTED SPECIMENS: 1f, collected as pupa, Batalha, Casal da Amieira, 29S513-4389, +120m, 9.I.2010, AvE leg & col.

● ***Criorhina ranunculi***

New genus and species to Portugal.

Reared from four pupae, found between leaves and moss in a small *Populus nigra* L./*Fraxinus excelsior* L. coppice, between some trunks, just above a little rothole. Collected on the 9<sup>th</sup> of January, one male fly emerged on the 22<sup>nd</sup>, two females on the 25<sup>th</sup> and one female on February 6. This last specimen has been sent to G. Rotheray, to compare the pupae with those known from Central European origin. He has not been able to find differences that could point to the possibility that we would be dealing with an undescribed species here (pers. comm. G. Rotheray).

Gil Collado (1930) describes the variety *hispanica* from a female specimen from Spain. Study of the holotype at the MNCN - which is severely damaged - confirms his description. Nevertheless it would be interesting to compare this specimen with Central European specimens of the variety *ruficauda* (Meigen).

The Portuguese specimens seem a little different from the Spanish (I have only seen Gil Collado's specimen) and Central European ones, but comparison is tricky because these are all freshly emerged specimens. Differences are mainly seen in the hairs on the tergites and slight differences in the shape of the surstylus. More study is needed when specimens are caught in the field.

COLLECTED SPECIMENS: 1m & 3f, collected as pupae, Batalha, Casal da Amieira, 29S513-4389, +120m, 9.I.2010, AvE leg, AvE & GR col.

● ***Epistrophe eligans***

Never published before for Portugal, until very recently by Ricarte & Lyszkowski (2010).

But it turns out to be a common and greatly overlooked and incorrectly identified species. Until now I have only collected specimens of the variety *trifasciata* (Strobl), males as well as females. In the INIA-collection are also a few 'typical' specimens. Two specimens from this collection identified as *E. ochrostoma*, prove to be *E. eligans* var. *trifasciata* (Gomes (1978) lists one of these, a male, as *Epistrophe sp.* from Oeiras).

It has become clear that in the past there has been much confusion because of this variety. This is the reason why *E. flava* Doczkal & Schmid, 1994 has been reported for the Portuguese fauna by Marcos-García *et al.* (2002). Leclercq (1964) lists *Syrphus ochrostoma* (= *Epistrophe ochrostoma* auct. nec Zetterstedt, 1849), which is a junior synonym of *E. flava*. The male specimen was collected near Santana in 1963, very late in its flying period. After re-examination of this specimen at the FSAGx, where his collection is deposited, the specimen proved to be *E. eligans* var. *trifasciata*.

One old male specimen at the MZC, from Bragança, identified as *Epistrophe ochrostoma*, proved to be *Epistrophe eligans* var. *trifasciata* too.

Three females from april 1969 identified in 1996 as *E. cryptica* Doczkal & Schmid, 1994 resting at the BMNH, and one of which previously has been identified as *E. ochrostoma*, all proved to be *E. eligans* instead.



**Fig. 1.** *Cheilosia iberica* foraging on *Euphorbia* sp. near Chãos. **Fig. 2.** Infested bulbs of *Urginea maritima* from Batalha 11.I.2010. **Fig. 3.** *Pipizella lyneborghi* foraging on *Euphorbia* sp. **Fig. 4.** *Sericomyia hispanica* male. **Fig. 5.** *Sphegina limbipennis* female. (Photos: A. van Eck).

Seemingly all old records of '*E. ochrostoma*' are in fact *E. eligans* var. *trifasciata*.

Kassebeer (1998c) makes a similar remark about records of *E. ochrostoma* from Morocco, which to his opinion probably concerns this variety of *E. eligans*.

At least for Portugal I have not been able to prove the existence of *E. flava*, on the contrary. Therefore I withdraw that species from the checklist and I will add *E. eligans*. Also *E. cryptica* cannot be added to the checklist.

COLLECTED SPECIMENS: 1m var. *trifasciata*, Bragança, [approx. 1900; AvE], MZC col; 1f var. *trifasciata*, Miradouro, 29S516-4311, 1946, P. Mendonça leg, MB col; 1m var. *trifasciata*, Serra da Boa Viagem, Bandeira, 30.IV.1963, MZC col; 1m var. *trifasciata*, Santana (Beira Litoral), 7.VII.1963, FSAGx col; 1m (as *ochrostoma*), Cascais, 29S463-4283, 25.III.1972, A. Gomes leg., INIA col; 1f var. *trifasciata* (as *cryptica*), Parede, 29S469-4282, 23.IV.1969, E.A. Fonseca leg, BMNH col; 1f var. *trifasciata* (as *cryptica*), Parede, 29S469-4282, 24.IV.1969, E.A. Fonseca leg, BMNH col; 1f var. *trifasciata* (as *cryptica*), Parede, 29S469-4282, 28.IV.1969, E.A. Fonseca leg, BMNH col; 1f var. *trifasciata* (as *cryptica* resp. *ochrostoma*), Oeiras, 29S473-4283, 10.III.1977, A. Gomes leg, INIA col; 1m, Oeiras, 29S473-4283, 9.III.1979, A. Gomes & A. Lourenço leg, INIA col; 1m, Oeiras, 29S473-4283, 17.IV.1979, A. Gomes leg, INIA col; 1w, Azambuja, Aveiras de Baixo, 29S551-4329, 21.IV.1979, J. Pinto leg, INIA col; 1m & 2f, Carrazeda de Ansiães, 29T641-4567, 4.V.1979, F.A. Ilharco & J. Pinto leg, INIA col; 1m, Mirandela, Romeu, 29T661-4599, 16.III.1983, anonymus leg, INIA col; 1f var. *trifasciata*, Algarve, Ferragudo, +50m, 8.IV.1983, AB leg & col; 1m var. *trifasciata*, Lisboa, 29S48-428, 3.V.1984, M. Mendonça leg, MB col; 1m var. *trifasciata*, Algarve, Ferragudo, +100m, 4.IV.1986, AB leg & col; 1m & 2f, Portalegre, 21.IV.1999, MR leg & col; 2f, Portalegre, Monte Carvalho, 22.IV.1999, MR leg & col; 1m var. *trifasciata*, Lisboa, Parque Mayer, 29S487-4285, +20m, 17.V.2004, AvE leg & col; 1m, Serra da Arrábida, Rib. da Comenda, 29S505-426, +12m, 31.V.2004, AvE leg & col; 1m var. *trifasciata*, Aveiro, Veiros, 29T534-4511, +10m, 13.IV.2006, AvE leg & col; 1f var. *trifasciata*, Barca d'Alva, 29T669-4545, +145m, 18.IV.2006, AvE leg & col; 1f var. *trifasciata*, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 19.IV.2006, AvE leg & col; 1m var. *trifasciata*, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 20.IV.2006, AvE leg & col; 1f var. *trifasciata*, Porto de Mós, Alvados, 29S519-4377, +260m, 12.IV.2007, AvE leg & col; 1f var. *trifasciata*, Batalha, Casal da Amieira, 29S513-4389, +120m, 28.III.2008, AvE leg & col; 1m var. *trifasciata*, Batalha, Casal da Amieira, 29S513-4389, +120m, 27.II.2009, AvE leg & col; 1f var. *trifasciata*, Vila Nova de Gaia, Arcozelo, 29T5296-4544, 19.V.2009, RA leg, AvE col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 1m, Lisboa, Parque Mayer, 29S487-4285, +20m, 17.V.2004; 1f, Ponte de Lima, 29T534-4624, +10m, 14.IV.2006; 3m var. *trifasciata*, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 20.IV.2006.

PHOTOGRAPHICAL MATERIAL: 1f var. *trifasciata*, Porto, 4.III.2008, AvE det, RA photo; 1m, Algarve, april 2009, AvE det, JV photo.

#### • *Epistrophella euchroma*

New genus and species to Portugal.

COLLECTED SPECIMENS: 1m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col.

#### • *Eristalinus megacephalus*

This species has hardly been collected in Portugal, and it was not present in any studied collection.

COLLECTED SPECIMENS: 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 21.VII.2010, AvE leg & col; 1m, Batalha, Casal do Jorge, 29S515-4389, +130m, 22.VII.2010, AvE leg & col.

#### • *Eristalis horticola*

New species to Portugal.

COLLECTED SPECIMENS: 1m & 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, AvE leg & col.

#### • *Eristalis nemorum*

New species to Portugal.

COLLECTED SPECIMENS: 1m, Montalegre, Frades, 29T594-4630, +940m, 23.IV.2006, AvE leg & col; 1m, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, AvE leg & col.

#### • *Eristalis pertinax*

New species to Portugal.

COLLECTED SPECIMENS: 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, AvE leg & col; 1m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col.

#### • *Eumerus argyropus*

New species to Portugal.

COLLECTED SPECIMENS: 1m, Fátima, 29S528-4385, 24.VIII.1954, A. Mendonça leg, MB col.

#### • *Eumerus bayardi*

Only Séguy (1961) mentions Portugal (at his description of *E. micans*), without giving detailed locations (Dirickx, 1994). Later authors quote Séguy. Speight *et al.* (1998) explain the synonymy of both taxa. Presence of this species needs to be confirmed in the future.

#### • *Eumerus consimilis*

New species to Portugal.

The species is very similar to *E. sogdianus* Stackelberg, 1952. It is recommended to check Iberian specimens of *E. sogdianus* with the description of *E. consimilis* by Šimić & Vujčić (1996) and Vujčić and Šimić (1999). With the male specimen caught on 21.X.2010 also a female *Eumerus* was collected at exactly the same spot, several seconds after each other. Careful study of the female specimen, like by the shape of the protruding mouthedge, suggests this could be the undescribed female of *E. consimilis*. Neither *E. sogdianus* nor *E. strigatus* have been found in this park yet, though *E. sogdianus* has been found just north of Porto (see below), and *E. strigatus* was mentioned from two locations near Porto (see below). This is the first citation of this species from the Iberian Peninsula, as the species has been confirmed before only from Croatia and France (Speight, 2010).

COLLECTED SPECIMENS: 1m, Aveiro, Veiros, 29T534-4511, +10m, 13.IV.2006, AvE leg & col; 1m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col; 1m, Estarreja, Canelas, 29T537-4507, 4.VIII.2010, RA leg, AvE col; 1m, Vila Nova de Gaia, Parque Biológico Vila Nova de Gaia, 29T537-4549, +80m, 21.X.2010, AvE leg & col.

#### • *Eumerus etnensis*

Most recently published record of this species is a male from the Algarve in april 1998, published by Smit *et al.* (2004). Lucas (1996) reported this species for the first time for Portugal (as *nigrovstriatus* Lambeck), also from the Algarve.

In Abrantes found near the cactus *Opuntia sp.*, as well as sunning on stones and walls of the castle's ruins.

COLLECTED SPECIMENS: 4m, Abrantes, castelo, 29S569-4368, +170m, 17.X.2010, AvE leg & col.

#### • *Eumerus sogdianus*

New species to Portugal.

COLLECTED SPECIMENS: 1m + 1f, Aveiro, Costa Nova do Prado, 29T521-4496, 15/16.VIII.1984, P. v. Ooijen leg, ZMAN col; 1m, Mindelo, 29T523-4573, 29.IV.2007, RCF leg, AvE col.

#### • *Eumerus strigatus*

The occurrence of this species in Portugal seems plausible. Nevertheless I have not found even one specimen. It has solely been listed in a publication by Nobre & Braga (1942). They mention it from the Berlenga Islands as being 'pouco frequente' (not very frequent; AvE), as well as from Leça da Palmeira (near Porto) and Penafiel. Since the identification of genitalia played no role whatsoever in those days, the species may have been confused with one of the sibling species that do have been found with certainty in Portugal.



● ***Eumerus subornatus***

New species to Portugal.

This species is described from Morocco by Claussen (1989a). Ricarte Sabater (2008) published the occurrence of *E. subornatus* in Europe for the first time, by a large number of collected specimens in Spain. Previously unidentified specimens from Portugal, published by Carles-Tolrá & Rosado (2009), appeared to contain the first specimens for Portugal. The emergence-trap near Évora was situated above the water of a little stream, with some space between the watersurface and the trap (pers.comm. JR). So insects could have been able to fly inside the trap.

COLLECTED SPECIMENS: 2f, Évora, Pardiela stream, 29S612-4278, 13.IX.2005, emergence-trap, MCT & JR leg, MCT col; 1f, Évora, Pardiela stream, 29S612-4278, 13.IX.2005, emergence-trap, MCT & JR leg, AvE col.

● ***Eumerus sulcitiobius***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Barca d'Alva, 29T669-4545, +145m, 18.IV.2006, AvE leg & col; 3m, Porto de Mós, Alvalados, 29S519-4377, +260m, 12.IV.2007, AvE leg & col; 1m, Serra de Santo António, 29S521-4375, +500m, 4.VIII.2010, AvE leg & col.

● ***Eupeodes bucculatus***

Only mentioned by Gomes (1978), 1 female 21.VII.1976, Oeiras (Estremadura). I have not been able to trace this specimen.

● ***Eupeodes lapponicus***

Only listed by Gomes (1981), one female specimen reared from a larva. This is also recorded in the administration of INIA, but the specimen itself is not present in the collection.

● ***Eupeodes lucasi***

New species to Portugal.

Listed only by Speight (2008, 2010) without giving references and, subsequently, Fauna Europaea.

COLLECTED SPECIMENS: 1m & 1f, Serra da Estrela, Cântaros, 29T618-4465, +1500m, 18.VIII.1981, AB leg & col; 1f, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 20.IV.2006, AvE leg & col.

● ***Eupeodes luniger***

All specimens at the MZC collection labeled *E. luniger*, were misidentified. They all belong to *E. corollae*. I have not seen the specimens published by Gomes (1978). Nevertheless this species remains listed, because there is another confirming record.

COLLECTED SPECIMENS: 1m, Mata Nacional do Buçaco, near Luso, 22.VIII.2001, MR leg & col.

● ***Eupeodes nielsenii***

New species to Portugal.

This is the first citation for the Iberian Peninsula.

The dust spots on the frons are a bit smaller than seen on specimens from the Netherlands, Northern and Central Europe. Also the black spots on the sternites are large, but slightly rounded laterally. There is one female specimen from the Spanish Pyrenees deposited in the ZMAN collection with similar features.

COLLECTED SPECIMENS: 1f, Barcelos, Gilmonde, 29T528-4595, 21.III.2008, RA leg, AvE col.

● ***Eupeodes nuba***

New species to Portugal.

According to the Syrph the Net species accounts (Speight, 2010), the species is found widespread around the Mediterranean basin, in Europe as well as in Africa.

COLLECTED SPECIMENS: 1f, Oeiras, Carnaxide, 29S478-4286, 6.V.1997, BS leg & col.

● ***Ferdinandea cuprea***

Recently, *F. fumipennis* has been recorded from the Iberian Peninsula for the first time, a species very similar to *F. cuprea* (Ricarte & Marcos-García, 2007). Old published records can therefore be no longer certain, unless the specimens get re-examined. Ricarte *et al.*

(2010) nevertheless list *F. cuprea* 'from the former province of Minho' published by Corti (1903), without having seen the specimen. Corti (1903) gives the village Visella as the collecting location of one female specimen. This may be in the province of Minho, but in the collection of the MZC there is only one female present, labeled 'Coimbra'. The specimen referred to by Ricarte *et al.* (2010) most probably is the specimen listed here from Coimbra, so the identification indeed could be correct. According to Ricarte *et al.* (2010) *F. cuprea* seems to be restricted to the northern part of the Iberian Peninsula.

COLLECTED SPECIMENS: 1f, Coimbra, XI.1903, MZC col; 1m, Medas, 29T546-4545, +40m, 17.IV.2006, AvE leg & col.

● ***Ferdinandea fumipennis***

Reported for the first time from Portugal by Ricarte & Lyszowski (2010). That female specimen has been collected in february 2000 by means of a pit fall, in the Serra de São Mamede Natural Park. The specimen listed here has been collected and checked by me as well as by AR, but unfortunately got lost in the mail after examination. COLLECTED SPECIMENS: 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 27.II.2009, AvE leg.

● ***Helophilus pendulus***

New species to Portugal.

This species may have been overlooked in the past. Collecting activities took place in roughly the southern half of the country, where it may be rare or not occurring.

COLLECTED SPECIMENS: 1f, Mata Nacional do Buçaco, near Luso, 22.VIII.2001, MR leg & col; 1f, Vila Nova de Gaia, Avintes, 29T537-4550, 1.IV.2009, RA leg, AvE col; 9m & 3f, Vila Nova de Gaia, Avintes, 29T537-4550, 22.IV.2009, RA leg, AvE col; 1m, Parque Biológico de Gaia, Vila Nova de Gaia, 29T537-4549, 12.VII.2009, JGS leg, CIBIO/UP col; 2f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 8-10.IX.2009, Malaise-trap, JA leg & col; 1f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 10-20.IX.2009, Malaise-trap, JA leg & col; 1m, Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010, AvE leg & col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 2 sp., Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010.

PHOTOGRAPHICAL MATERIAL: 1m, Porto, Parque Biológico de Gaia, 28.V.2005, AvE det, RCF photo; 1m, Barcelos, 22.VIII.2006, AvE det, RA photo.

● ***Helophilus trivittatus***

This species has been published recently by Carles-Tolrá & Rosado (2009).

COLLECTED SPECIMENS: 3f, Bussaco [Serra do Buçaco; AvE], V.1884, MZC col; 1f, Porto Alto, 29S510-4308, 30.V.1971, P.Mendoça leg, MB col; 1m & 3f, Évora, Valverde, 29S585-4265, 25.IX.1978, R. Pontes leg, INIA col; 1f, Monsaraz, 29S642-425, +330m, 28.V.2004, AvE leg & col; 2f, Vila Nova de Milfontes, 29S519-4174, +10m, 8.IV.2007, AvE leg & col; 1f, Aldeia Nova de São Bento, 29S635-419, 230m, 23.III.2008, AvE leg & col; 1f, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col.

PHOTOGRAPHICAL MATERIAL: 1m, Faro, Gambelas, 29S5909-4099, 25.X.2008, AvE det, VJ photo; 1m, Faro, 24.VII.2009, AvE det, VJ photo.

● ***Heringia heringi***

In Lucas (1996) listed as *H. senilis* Sack. Claussen *et al.* (1994) were not able to find satisfactory and consistent differences to separate *H. senilis* from *heringi*. I therefore follow Speight (2008, 2010) and consider *H. senilis* as a junior synonym of *heringi*.

Gomes (1978) lists this species, a record from 1947 from Loures, Sacavém. This female specimen remains in the collection of INIA and the identification could be confirmed. Gomes (1978) also lists *Heringia aff. curvinervis* (Strobl, 1898), a male and a female from Oeiras in 1975. These specimens were not found in the INIA collection. Lucas (1996) suggests about these specimens that they 'may belong to this species' (*H. senilis*; AvE).

● ***Heringia latitarsis***

Gomes (1992) mentions this species as one of the aphidophage Syrphidae known from Portugal, without referring to further data. That specimen (s) could not be found, but the occurrence of this species in Portugal could be confirmed after all.

These are the only known citations for the Iberian Peninsula.

COLLECTED SPECIMENS: 1m, Serra da Estrela, Manteigas, 29T622-4474, +1240m, 19.VII.2010, AvE leg & col.

● ***Heringia vitripennis***

Carles-Tolrá (2009) published the first record for Portugal, a male from Serra da Estrela.

● ***Lejogaster metallina***

New species to Portugal.

The collection of MZLU contains one male specimen, of which the genitalia definitely confirm the identity. Also the BMNH has a series of males and females, belonging to this species. Study of the genitalia is recommended for this genus, when collected on the Iberian Peninsula.

COLLECTED SPECIMENS: 1m, Carcavelos, 29S470-4282, 14.VII.1961, E.A. Fonseca leg, BMNH col; 2m, Porto, Leça da Palmeira, 29T525-4560, 10.VIII.1962, J. Abraham & L. Horaczek leg, BMNH col; 2m, Porto, 29T532-4555, 12.VIII.1962, J. Abraham & L. Horaczek leg, BMNH col; 1 m + 2f, Porto, Foz do Douro, 29T527-4555, 12.VIII.1962, J. Abraham & L. Horaczek leg, BMNH col; 1m, Figueira (Coimbra district), 29.VII.1983, on or near *Juncus* (L), P. Ardö leg, MZLU col.

● ***Lejogaster tarsata***

New species to Portugal.

My Portuguese specimens show aberrant coloration compared with northern European specimens. The legs lack the yellowish parts and have similar colors like *L. metallina*. Spanish specimens of this species at the ZMAN show the same aberration. Study of the male terminalia clearly confirm the identity of *tarsata*.

COLLECTED SPECIMENS: 1m, Praia de Mira (Coimbra district), lagune, 1.VIII.1983, P. Ardö leg, MZLU col; 1f, Figueira, 29.VII.1983, on or near *Juncus*, anonymus leg (but assumably P. Ardö; AvE), MZLU col; 4m & 1f, Évora, 29S593-426, +280m, 25.V.2004, AvE leg & col; 1m & 1f, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col.

● ***Mallota dusmeti***

New species to Portugal.

Besides the male specimen listed here, a female is present in the collection of INIA, but without further information on its origin.

COLLECTED SPECIMENS: 1m, Carrazeda de Ansiães, 29T641-4567, 4.V.1979, F.A. Ilharco & J. Pinto leg., INIA col.

● ***Melanogaster hirtella***

In the checklist (Marcos-García *et al.*, 2002b) erroneously listed under the genus *Lejogaster*. Lucas (1996) mentions two females as being a little aberrant, but I could not find any unusual characters on these specimens that are deposited at the ZMAN.

Gomes (1981) publishes a male *Melanogaster aerosa* (Loew, 1843) (as *Chrysogaster macquarti* (Loew, 1843)) from Ribatejo e Sado (sic) on *Halimium commutatum* Pau. I have seen this specimen in the INIA-collection, and it has been misidentified. It actually is *M. hirtella*. This means that *M. aerosa* has to be eliminated for the Portuguese fauna.

● ***Meligramma cingulata***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 20.IV.2006, AvE leg & col.

● ***Merodon albifrons***

Marcos-García *et al.* (2007) mention its occurrence in Portugal. However they did not see the specimen (s) published from Portugal, and neither did I.

● ***Merodon avidus* A**

New species to Portugal.

Milankov *et al.* (2009) assume that there are several sibling species hiding under this taxon. Marcos-García *et al.* (2007) do not mention it for Portugal, but they do so for Spain.

The male specimen at the MZC listed here has been verified by me, and according to the curator it must be of Portuguese origin.

COLLECTED SPECIMENS: 1m, [Portugal; AvE], [approx. 1900; AvE], anonymus leg, MZC col.

● ***Merodon bicolor***

Previously listed as *M. avidus* (Rossi, 1790) by Marcos-García *et al.* (2002b). Milankov *et al.* (2009) reinstate *M. bicolor* as a valid species, after Gil-Collado (1930) described this taxon as a variety of *M. spinipes* (Fabr., 1794).

Marcos-García *et al.* (2007) already mentioned Portugal (in that paper under the distributional records of *M. avidus* B).

The male specimen at the MZC listed here has been verified by me, and according to the curator it must be of Portuguese origin.

COLLECTED SPECIMENS: 1m [Portugal; AvE], [approx. 1900; AvE], anonymus leg, MZC col.

● ***Merodon chalybeus***

By Lucas (1996) listed as *M. spicatus* Becker, being new to the Portuguese fauna. But Marcos-García *et al.* (2007) show that *M. spicatus* is a junior synonym of *M. chalybeus*, the latter has actually been described from a single female specimen from Portugal (Czerny & Strobl, 1909). In museums and private collections additional specimens were recognized, and those are listed here. The first male specimen at the MZC listed here has been verified by me, and according to the curator it must be of Portuguese origin.

COLLECTED SPECIMENS: 1m, [Portugal; AvE], [approx. 1900; AvE], anonymus leg, MZC col; 1m, Coimbra, 29T548-4451, [approx. 1900; AvE], anonymus leg, MZC col; 1m (as *Merodon funestus* Rond.), Bussaco [Serra de Buçaco; AvE], 29T555-4466, [approx. 1900; AvE], anonymus leg, ZMC col; 1m, Fátima, 29S528-4385, 15.IX.1956, P. Mendoça leg, MB col; 1m, Sesimbra, 29S491-4255, 2.V.1971, N. Mendoça leg, MB col; 1f, Fátima, 29S528-4385, 13.IX.1976, P. Mendoça leg, MB col; 1m & 1f, Mértola, 15 km southeast of, Ribeira do Vascão, 28.IV.2004, B. Brugge leg & col.

● ***Merodon clavipes***

Lucas (1996) is the first to publish this species for the Portuguese fauna. Marcos-García *et al.* (2007) mention the occurrence in Portugal, but haven't seen Portuguese specimens. Ricarte & Lyszkowski (2010) confirm the presence of this species by a series of males caught early april 2009.

COLLECTED SPECIMENS: 1f, Faro, [date 'old' according to Lucas; AvE], Korb leg, 'Museum of Munich' col (Lucas, 1996); 1f, Carrazeda de Ansiães, 29T641-4567, 4.V.1979, F.A. Ilharco & J. Pinto leg., INIA col; 1sp., Loulé, east of Quarteira, 22-29.IV.1985, JL leg, ZMAN col (Lucas, 1996).

● ***Merodon crypticus***

One recent record from Serra da Estrela of this Iberian endemic species has already been published by Ricarte *et al.* (2009). It was collected on the flowers of *Merendera montana* Lange. Also the other records are from the Serra da Estrela. This species has on two occasions been collected at the same day and location with *M. escoalensis*, both times in the Serra da Estrela.

COLLECTED SPECIMENS: 1m, Serra da Estrela, Cântaros, 29T618-4465, +1500m, 18.VIII.1981, AB leg & col; 1m & 2f, Serra da Estrela, Nave de Santo António, 29T621-4463, +1600m, VII.2009, JA leg, AvE col.

● ***Merodon equestris***

New species to Portugal.

Most specimens I have collected or seen, belong to the variety *flavicans* (Fabricius, 1794).

COLLECTED SPECIMENS: 1f, Carcavelos, 29S471-4281, 17.IV.1955,

N. de Andrade leg, MZC col; 1m *type*, Aveiro, São Jacinto, 29T523-4502, +0m, 13.IV.2006, AvE leg & col; 2m var. *flavicans*, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 19.IV.2006, AvE leg & col; 1f var. *flavicans*, Mindelo, 29T523-4573, 29.IV.2007, R.C. Ferreira leg, AvE col; 1m var. *flavicans*, Porto, 29T53-455, 23.IV.2008, RA leg, AvE col; 1m var. *flavicans*, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 1m & 1sp. var. *flavicans*, Aveiro, São Jacinto, 29T523-4502, +0m, 13.IV.2006; 1m, Aveiro, Veiros, 29T534-4511, +10m, 13.IV.2006.

● ***Merodon escorialensis***

New species to Portugal.

Marcos-García *et al.* (2007) re-describe this species to separate it from two other cryptic species. This species has on two occasions been collected at the same day and location with *M. crypticus*, both times in the Serra da Estrela.

COLLECTED SPECIMENS: 1m, Vouzela, 29T574-4508 [approx. 1900; AvE], anonymus leg, MZC col; 1f, Serra da Estrela, Cântaros, 29T618-4465, +1500m, 18.VIII.1981, AB leg & col; 1m, Serra da Estrela, Cântaros, 29T618-4465, +1500m, 18.VIII.1981, AB leg & col; 1m, Serra da Estrela, Nave de Santo António, 29T621-4463, +1600m, VII.2009, JA leg, AvE col; 1f, Barcelos, Gilmonde, 29T528-4595, 26.IV.2010, RA leg, AvE col.

● ***Merodon flavus***

New species to Portugal.

COLLECTED SPECIMENS: 1f, Portalegre, Monte Carvalho, 22.IV.1999, MR leg & col.

● ***Merodon funestus***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Valongo, Campo, 29T545-4559, 17.V.2010, RA leg, AvE col.

● ***Merodon geniculatus***

Lucas (1996) is the first to publish this species for the Portuguese fauna, by one male from the Algarve in 1985. Marcos-García *et al.* (2007) refer to the same publication.

COLLECTED SPECIMENS: 1f, Lamego, 29T599-4550, +900m, 8.VII.1984, AB leg & col; 1m, Porto de Mós, Alvados, 29S519-4377, +260m, 13.VIII.2007, AvE leg & col.

● ***Merodon longicornis***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Mértola, west of town, 29S617-4166, +260m, 21.V.2004, AvE leg, FMNH col; 1m, Serra de Santo António, 29S521-4375, +500m, 4.VIII.2010, AvE leg & col.

● ***Merodon luteihumerus***

New species to Portugal.

Reared from three bulbs of *Urginea maritima* (L.) Baker. Two bulbs were taken on January 11th 2010 (Figure 2), and one on July 22nd 2010. All three collected bulbs have contained larvae and no other bulbs have been taken home.

Three males from the January bulbs emerged on the following dates: 19 and 22 august and on September 6, 2010.

One male from the July bulb, left the bulb on august 9, to pupate on august 10, and it emerged on September 12, 2010.

Two of these males did not fully develop, meaning that wings, chitine of especially the abdomen and genitalia have developed quite poorly. This concerns the ones that emerged on september 6 and 12 respectively. It is not clear why this happened; maybe lower room temperatures in a critical phase has played a role. Ricarte *et al.* (2008) do not mention this phenomenon; they reared under controlled laboratory conditions.

Hitherto *M. luteihumerus* has only been reared from these bulbs (see also Ricarte *et al.*, 2008).

COLLECTED SPECIMENS: 1m, Fátima, 29S528-4385, 4.IX.1952, P. Mendocça leg, MB col; 1m & 1f, Fátima, 29S528-4385, 9.IX.1952, P. Mendocça leg, MB col; 1f, Fátima, 29S528-4385, 19.IX.1952, N.

Mendocça leg, MB col; 3m, collected as larvae, Batalha, Casal do Jorge, 29S515-4389, +130m, 11.I.2010, AvE leg & col; 1m, collected as larvae, Batalha, Casal do Jorge, 29S515-4389, +130m, 11.I.2010, AvE leg & col.

● ***Merodon obscuritarsis***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Fátima, 29S528-4385, 21.VIII.1954, J. Mendocça leg, MB col; 1m, Lamego, 29T599-4550, +900m, 18.VI.1981, AB leg & col; 2f, Lamego, 29T599-4550, +900m, 8.VII.1984, AB leg & col; 1m, Mértola, north and east of town, 29S618-4166, +260m, 22.V.2004, AvE leg & col.

● ***Merodon parietum***

Another *Merodon* described from a Portuguese specimen (Marcos-García *et al.*, 2007).

COLLECTED SPECIMENS: 1m, Serra da Boa Viagem, 29T511-4448, 30IV.1963, anonymus leg, MZC col; 2m, Algarve, Monchique, 29S539-4130, +400m, 7.IV.1983, AB leg & col; 1m, Alpiarça, 19.IV.1999, MR leg & col; 2m & 2f, Batalha, Casal do Marra, 29S513-4390, +120m, 24.III.2008, AvE leg & col.

● ***Merodon pumilus***

New species to Portugal.

This is a species of the Mediterranean Bassin with only a few Iberian specimens collected so far (Marcos-García *et al.*, 2007).

COLLECTED SPECIMENS: 1f, Évora, 29S594-4269, 18.IV.1981, P. Mendocça leg, MB col; 1f, Corval (Alentejo), 34 km north of Moura, 1.V.2004, B. Brugge leg & col.

● ***Merodon serrulatus***

Marcos-García *et al.* (2002b) published this species as *M. lusitanicus* Hurkmans, 1993. Marcos-García *et al.* (2007) reinstall the name *M. serrulatus*, which has been described by Wiedemann upon a female specimen from Portugal.

Two specimens identified by A. Vujić stay in the ZMAN collection: 1f, Algarve, Vilamoura, 27.IV.1985, JL leg; 1f, Algarve, Quarteira, 27.IV.1985, JL leg.

● ***Merodon unguicornis***

New species to Portugal.

Marcos-García *et al.* (2007) confirm the status of this species and clear some matters of nomenclature. They do not mention the occurrence in Portugal of this species.

COLLECTED SPECIMENS: 1f, Porto Alto, 29S510-4308, 16.IV.1972, J. Mendocça leg, MB col; 4m, Alcanena, Serra de Santo António, 29S523-4372, +300m, 12.IV.2007, AvE leg & col.

● ***Merodon unicolor***

Marcos-García *et al.* (2007) show that *M. aeneus* (Meigen, 1822) itself does not occur on the Iberian Peninsula. The previous Spanish records mostly now being referred to *M. unicolor* (see below), though other taxa are also involved (see Marcos-García *et al.*, 2007 and Speight, 2008).

Though no Portuguese specimens were examined by Marcos-García *et al.* (2007), they proved that *M. aeneus* is not an Iberian species. For these reasons the taxon *M. aeneus* is removed from the checklist. The two oldest male specimens at the MZC listed here have been verified by me, and according to the curator they must be of Portuguese origin.

COLLECTED SPECIMENS: 2m, [Portugal; AvE], [approx. 1900; AvE], anonymus leg, MZC col; 1m, Gerez, V.1910, Tavares leg, MZC col; 1f, Fátima, 29S528-4385, 19.V.1974, P. Mendocça leg, MB col; 1f, Lamego, 29T599-4550, +900m, 8.VII.1984, AB leg & col; 1f, Mértola, west of town, 29S617-4166, +260m, 21.V.2004, AvE leg, FMNH col; 1m, Barcelos, Gilmonde, 29T528-4595, 8.V.2009, RA leg, AvE col.

● ***Microdon analis***

Carles-Tolrá (2004) published the rearing from a pupa to a female fly, collected in a pine tree near Serra de Valongo (Douro-Litoral) in february 1974. He does not mention whether the pupa came from the ant genus *Lasius* or *Formica* (Hymenoptera, Formicidae). Re-

examination of the pupa will have to show if we are really dealing with *M. analis*, or with the cryptic species *M. major* (see also Speight, 2010). The specimens from Fátima, listed below, were without pupa.

COLLECTED SPECIMENS: 1f, Fátima, 29S528-4385, 27.II.1971, P. Mendonça leg, MB col; 1m & 1f, Fátima, 29S528-4385, 19.V.1974, P. Mendonça leg, MB col; 1m & 1f, Fátima, 29S528-4385, 22.V.1985, P. Mendonça leg, MB col.

• ***Milesia crabroniformis***

It is listed for Portugal by Fauna Europaea, prior to the first publication by Ricarte *et al.* (2009), without references.

The species has been found on the flowers of *Hedera* sp. L., *Foeniculum vulgare* Miller, *Ferula communis* L. and *Thapsia* sp. L.

COLLECTED SPECIMENS: 2m & 1f, Vouzela, 29T574-4508, [approx. 1900; AvE], anonymous leg, MZC col; 2m & 2f, Oliveira de Frades, 29T569-4509, [approx. 1900; AvE], anonymous leg, MZC col; 2m, Oliveira de Frades, 29T569-4509, [approx. 1900; AvE], anonymous leg, MNCN col; 1f, Fátima, 29S528-4385, 6.IX.1952, P. Mendonça leg, MB col; 1f, Fátima, 29S528-4385, 5.VIII.1954, N. Mendonça leg, MB col; 1f, Fátima, 29S528-4385, 4.IX.1956, P. Mendonça leg, MB col; 1f, Fátima, 29S528-4385, 7.IX.1956, P. Mendonça leg, MB col; 1f, Fátima, 29S528-4385, 20.VII.1971, P. Mendonça leg, MB col; 2m & 1f, Fátima, 29S528-4385, 3.X.1971, N.N. Mendonça leg, MB col; 2f, Paços da Serra, 29T614-4479, 29.VII.1985, P. Mendonça leg, MB col; 1m, Fátima, 29S528-4385, 11.X.1985, P. Mendonça leg, MB col; 1f, Algarve, 11-23.IX.1990, F. Moussault leg, NNKN col; 1m & 1f, Serra da Estrela, Manteigas, 29T623-4473, 22.VIII.2001, JGS leg & col; 1m, Mata Nacional do Buçaco, near Luso, 22.VIII.2001, MR leg & col; 1m & 1f, Mortágua, Almacinha, 29T569-4466, 15.VIII.2007, AvE leg & col; 1f, Serra da Estrela, Manteigas, 29T623-4471, 19.VII.2007, M. Corley leg, CIBIO/UP col; 1m, Serra da Estrela, Manteigas, 29T623-4471, 15.VIII.2007, JGS leg, CIBIO/UP col; 1m, Serra da Estrela, VIII.2007, J. Conde leg, BS col; 1f, Serra da Estrela, Manteigas, 29T622-4474, +1240m, 19.VII.2010, AvE leg & col; 1f, Abrantes, castelo, on *Hedera* sp. L., 29S569-4368, +170m, 17.X.2010, AvE leg & col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 3sp., Mortágua, Almacinha, 29T569-4466, +140m, 15.VIII.2007; 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 8.VII.2008; 1m, Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010; 1f, Abrantes, castelo, on *Hedera* sp. L., 29S569-4368, +170m, 17.X.2010.

• ***Milesia semiluctifera***

New species to Portugal.

This splendid species has been collected only once in Portugal, but quite recently.

COLLECTED SPECIMENS: 1m, Fátima, 29S528-4385, 19.VII.1974, P. Mendonça leg, MB col.

• ***Myolepta difformis***

Published for the first time for Portugal by Reemer *et al.* (2004), collected mid april 1999 on the flowers of *Cistus* L. sp. The collections of MZC and INIA contain additional specimens, even very old ones. Next to the specimen from the INIA collection listed below, were one male specimen failing additional data, and a record in the administration only of a female collected on 19.VI.1979 near Ferreira do Alentejo, Odivelas by A. Gomes & J. Pinto.

COLLECTED SPECIMENS: 1m, Lisboa, Alfeite, 29S487-4279, V.1878, anonymus leg, MZC col; 1f, Santiago do Cacém, Ermidas, 29S551-4206, 22.IV.1978, J. Pinto leg, INIA col.

• ***Neoacia geniculata***

New species to Portugal.

This is the first citation for the Iberian Peninsula.

COLLECTED SPECIMENS: 1m, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col.

• ***Neoacia interrupta***

New species to Portugal.

This is the first citation for the Iberian Peninsula.

COLLECTED SPECIMENS: 1m & 1f, Estarreja, Canelas, 29T537-4507, 9.III.2010, RA leg, AvE col; 2m, Estarreja, Salreu, 29T537-4509, 31.V.2010, RA leg, AvE col; 2f, Estarreja, Salreu, 29T537-4509, 17.VI.2010, RA leg, AvE col; 4f, Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010, AvE leg & col; 1m, Estarreja, Canelas, 29T537-4507, 4.VIII.2010, RA leg, AvE col.

• ***Neoascia tenur***

New species to Portugal.

This is the first citation for the Iberian Peninsula.

In all present keys, the specimens from Portugal key out to *N. tenur*. Some characters though differ clearly from the latter. Terminalia fit to the drawing by Stackelberg (in: Barkemeyer & Claussen, 1986). Comparison with one Dutch male specimen shows no differences in the terminalia. Comparison with Spanish specimens at the ZMAN leads to the conclusion that many Iberian specimens share the same aberrant characters, which are listed below.

1. third antennal segment 2-2,5 times as long as wide, especially in the female
2. hairs on thoracic dorsum shorter and more adpressed, especially anterior to the suture
3. anterior anepisternum with less extensive dusting; the anterior upper corner and the posterior half only thinly dusted to shiny (in most cases with rather clear boundary)
4. tergite 2 in males and females black
5. tergite 3 in females black (found one exception at the ZMAN, with one small spot (so not paired))

COLLECTED SPECIMENS: 1m, Montalegre, Frades, 29T594-4630, +940m, 23.IV.2006, AvE leg & col; 2m, Montalegre, Mourilhe, 29T595-4632, +960m, 23.IV.2006, AvE leg & col; 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 24.IV.2006, AvE leg & col.

• ***Paragus albifrons***

Listed by Leclercq, who collected a male near Cantanhede (Beira Litoral) in 1963. But examination of this specimen showed this is actually *P. pecchiolii*. No other references for this species could be found in studied literature.

COLLECTED SPECIMENS: 1f, Estarreja, Salreu, 29T537-4509, 19.IV.2009, RA leg, AvE col; 1m & 2f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 10-20.IX.2009, Malaise-trap, JA leg & col.

• ***Paragus bradescui***

New species to Portugal.

COLLECTED SPECIMENS: 2m, Lisboa, Parque Florestal de Monsanto, 29S482-4286, 25.VII.1962, J. Abraham & L. Horaczek leg, BMNH col; 1m, Lisboa, Parque Florestal de Monsanto, 29S482-4286, 27.VII.1962, J. Abraham & L. Horaczek leg, BMNH col.

• ***Paragus pecchiolii***

This species has been published in recent literature under the name *P. majoranae* Rondani, 1857. Sommaggio (2002) proves that the name *majoranae* Rondani has been incorrectly applied to and that the correct name for *majoranae* of authors is *pecchiolii* Rondani. All my '*majoranae*' turned out to be this species. The male *P. majoranae* published by Carles-Tolrá & Rosado (2009) proved to be *pecchiolii* after re-examination (Carles-Tolrá, 2010). I consider all previously published specimens of *P. majoranae* from the Portuguese mainland, as belonging to *P. pecchiolii* instead. So far I haven't seen confident identifications of *P. majoranae* from Portugal. Fauna Europaea also treats this species as absent in Portugal. Adding up I found enough reason to remove *P. majoranae* from the checklist.

COLLECTED SPECIMENS: 1m, Coimbra, 29T548-4451, [approx. 1900; AvE], anonymus leg, MZC col; 1m, Carcavelos, 29S470-4282, 14.VII.1961, E.A. Fonseca leg, BMNH col; 1m, Cantanhede (Beira Litoral), 17.VII.1963, FSAGx col; 1m, Beja, 20km north of, Rib. Malk Abraao, 29.IV.2004, B. Brugge leg & col; 1m, Barca d'Alva, 29T669-4545, +145m, 18.IV.2006, AvE leg & col; 1m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col; 3m, Porto de Mós, Alcaria, 29S519-4379, +285m, 13.VIII.2007, AvE leg &

col; 1m, Batalha, 29S513-4390, +120m, 17.VIII.2007, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 10.VII.2008, AvE leg & col; 1m, Barcelos, Gilmonde, 29T528-4595, 19.III.2009, RA leg, AvE col; 2m & 4f, Pardieiros, Mata da Margaraça, 29T591-4452, +590m, 20.VII.2010, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 27.VII.2010, AvE leg & col.

● ***Paragus strigatus***

Though this species is already known from Portugal, there are only few references to specimens.

COLLECTED SPECIMENS: 1f, Esposende, Apúlia, 29T519-4592, 6.V.2009, RA leg, AvE col; 1m, Vila Nova de Gaia, Canidelo, 29T529-4553, 30.VI.2009, RA leg, AvE col; 1f, Vila Nova de Gaia, Canidelo, 29T529-4553, 11.IX.2009, RA leg, AvE col; 1f, São Pedro de Muel, 29S498-4402, 29.VII.2010, AvE leg & col.

● ***Paragus vandergooti***

This species has been published new for Portugal by Lucas (1996). He collected a male specimen near Loulé (Algarve).

COLLECTED SPECIMENS: 1m, Sendim, 29T714-4585, +720m, 1.VIII.2010, AvE leg & col.

● ***Parhelophilus crococroronatus***

Reemer (2000) described the new species *crococroronatus*, also based on Portuguese specimens originally identified as *P. frutetorum* (by Lucas, 1996). For this reason I regard the mentioning of the occurrence of *P. frutetorum* in Portugal by Speight (2008) as superseded. As a result, *P. frutetorum* disappears from the checklist. One female caught by me resembles *P. frutetorum* a lot (pers.comm. MR). But because the variability within *P. crococroronatus* is understood insufficiently, it will be necessary to wait with possible reinstatement until a male *P. frutetorum* has been found.

● ***Pipizella annulata***

Just one series of captures published so far: 2 males and 14 females caught by J.A.W. Lucas in the Algarve (Lucas, 1996).

● ***Pipizella lyneborgi***

New species to Portugal.

The flies were found foraging on *Euphorbia* L. sp. Pérez-Bañón *et al.* (1996) mention four other flowers of which the pollen has been found inside *P. lyneborgi*, but not *Euphorbia*. Figure 3.

COLLECTED SPECIMENS: 6m & 2f (incl. 1 copula), Figueira de Castelo Rodrigo, 29T671-4529, +640m, 20.IV.2006, AvE leg & col; 3m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col.

● ***Pipizella thapsiana***

All previously recorded Portuguese specimens of *P. siciliana* Nielsen & Torp, 1973, caught and published by Lucas (1996), actually belong to this species (Van Steenis, in press). This means that *P. siciliana* has been removed from the checklist. This is another example of a hoverfly species spreading its North African range to the Iberian Peninsula.

COLLECTED SPECIMENS: 1m, Algarve, Paderne, 29S570-4114, 11.IV.1966, M.A. Diniz leg, MZC col; 1m, Portalegre 22.IV.1999, MR leg & col. (Van Steenis, in press); 2m, Alcanena, Serra de Santo António, 29S523-4372, +300m, 12.IV.2007, AvE leg & col; 1m, Porto de Mós, Alvados, 29S519-4377, +260m, 12.IV.2007, AvE leg & col.

● ***Platycheirus albimanus***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Serra de Mamede, Portalegre, +950m, 30.V.1981, AB leg & col; 1m & 1f, Montalegre, Frades, 29T594-4630, +940m, 23-IV-2006, AvE leg & col; 1f, Montalegre, Mourilhe, 29T595-4632, +960m, 23-IV-2006, AvE leg & col; 2m, Montalegre, Mourilhe, 29T595-4632, +960m, 24-IV-2006, AvE leg & col; 2f, Guarda, 29T644-4488, +930m, 16-IV-2007, AvE leg & col; 1m, Serra da Estrela, Manteigas, 29T622-4474, +1240m, 19.VII.2010, AvE leg & col; 1m, Serra da Estrela, Nave de Santo António, 29T621-4463, +1600m, 19.VII.2010, AvE leg & col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 3f, Batalha, Casal do Marra, 29S513-4390, +120m, 24.III.2008.

● ***Platycheirus ambiguus***

New species to Portugal.

The collection of INIA holds one single female, which was previously unidentified.

COLLECTED SPECIMENS: 1f, Felgar [Bragança; AvE], 29T671-4563, 17.III.1983, J. Pinto leg, INIA col.

● ***Platycheirus fulviventris***

New species to Portugal.

The reference by Leclercq (1964) of a male *Platycheirus immarginatus* (Zetterstedt, 1949) proved to be a misidentification. After checking the specimen it appeared to be *P. fulviventris*. Gomes (1992) quotes from Leclercq (1964). *P. immarginatus* therefore has been removed from the checklist.

COLLECTED SPECIMENS: 1m, Carcavelos, 29S470-4282, 14.VII.1961, E.A. Fonseca leg, BMNH col; 2w, [Lisboa; AvE], Lagoa Azul, 15.VII.1961, E.A. Fonseca leg, BMNH col; 1m, [Torres-Vedras; AvE], Coutada (Estremadura), 10.VII.1963, anonymus leg, FSAGx col; 1m, Carcavelos, 29S470-4282, 10.X.1967, E.A. Fonseca leg, BMNH col; 1w, Algarve, Albufeira, 28.II.1988, 29S566-4105, A.E. Stubbs leg, BMNH col; 1m, Mértola, north of town, 29S618-4166, +55m, 23.V.2004, AvE leg & col.

● ***Platycheirus rosarum***

New species to Portugal.

COLLECTED SPECIMENS: 1m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col.

● ***Platynochaetus setosus***

For the first time reported for the fauna of Portugal by Gomes (1980), Lucas (1996) writes that he has two specimens collected by Korb in 1884 from Faro (now ZMAN col). In the INIA-collection remain two specimens without further data.

COLLECTED SPECIMENS: 1f, Lisboa, 29S48-428, 18.IV.1946, E.L. de Carvalho leg, IICT col; 1m, São João do Estoril, 29S465-4284, 3.IV.1947, N.F. de Andrade leg, IICT col; 1m, São João do Estoril, 29S465-4284, 13.IV.1947, N.F. de Andrade leg, IICT col; 1f, Algarve, Ferragudo, +50m, 3.IV.1983, AB leg & col; 2f, Algarve, Ferragudo, +50m, 4.IV.1983, AB leg & col; 1m & 1f, Algarve, Ferragudo, +100m, 5.IV.1983, AB leg & col; 1m & 1f, Algarve, Ferragudo, +50m, 8.IV.1983, AB leg & col; 1m & 1f, Algarve, Ferragudo, +100m, 4.IV.1986, AB leg & col; 1m & 1f, Vila Nova de Milfontes, 29S519-4174, +10m, 8.IV.2007, AvE leg & col; 2m, Alcanena, Serra de Santo António, 29S523-4372, +300m, 12.IV.2007, AvE leg & col; 1m & 1f, Porto de Mós, Alvados, 29S519-4377, +260m, 12.IV.2007, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 28.III.2008, AvE leg & col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 27.II.2009, AvE leg & col.

ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 27.II.2009

● ***Psilota atra***

New species to Portugal.

COLLECTED SPECIMENS: 2m, Guarda, Chãos, 29T642-4489, +800m, 17.IV.2007, AvE leg & col.

● ***Psilota innupta***

Gomes (1978) mentions the capture of a male and a female of *Heringia curvinervis* in the Estremadura. Dirickx (1994) adds the remark 'Cette (...) citation était toutefois faite avec des réserves.' Marcos-García *et al.* (2002b) add the remark that they haven't seen the specimen (as *Heringia curvinervis*) either. Smit & Vujić (2007) place *Heringia curvinervis* as a junior subjective synonym (syn.nov.) of *Psilota innupta*. They did not see the Portuguese specimens, nor did I. The identity of Gomes' specimens needs to be re-examined. Until then it remains on the checklist, but under the senior synonym.

● ***Riponnensia longicornis***

In Lucas (1996) listed as *Orthonevra longicornis*. He collected one specimen near Loulé, Algarve, in April 1985. No other references were found.

● ***Scaeva mecogramma***

New species to Portugal.

The only specimens found to be collected in Portugal were without information about date and collector. The state of the specimens and labels suggest that these specimens are more recent than most other specimens at the MZC.

COLLECTED SPECIMENS: 1m, Montemor, 29S482-4296, anonymous leg, MZC col; 1m, Marinha grande, 29S505-4400, anonymous leg, MZC col.

● ***Scaeva selenitica***

New species to Portugal.

The specimen published by Carles-Tolrà (2009) rests on a misidentification. I have seen the specimen and it actually belongs to *S. pyrastris*. Nevertheless *S. selenitica* can be added to the Portuguese checklist, as it is collected near Barcelos in the north and Fátima in the Midwest.

COLLECTED SPECIMENS: 1m, Fátima, 29S528-4385, 16.IX.1956, N.N. Mendonça leg, MB col; 1m, Serra de Mamede, Portalegre, +950m, 30.V.1981, AB leg & col; 1m, Barcelos, Gilmonde, 29T528-4595, 29.IV.2009, RA leg, AvE col.

● ***Sericomyia hispanica***

New genus and species to Portugal.

COLLECTED SPECIMENS: 1m, Montalegre, Frades, 29T594-4630, +940m, 23.IV.2006, AvE leg & col. Figure 4.

● ***Sphegina limbipennis***

New genus and species to Portugal. Figure 5.

COLLECTED SPECIMENS: 1f, Medas, 29T546-4545, +40m, 17.IV.2006, AvE leg & col.

PHOTOGRAPHICAL MATERIAL: 1f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 30.VI.2010, AvE det, JA photo.

● ***Spilomyia digitata***

This species has been published for Portugal by Gomes (1980) and Carles-Tolrà & Rosado (2009). In the collection of INIA are two specimens, a male and a female, without reference to dates and locations.

COLLECTED SPECIMENS: 1f, Lisboa, Paiã, 29S48-428, 9.IX.1946, E.L. de Carvalho leg, ICT col; 1m, Fátima, 29S528-4385, 23.VIII.1954, P. Mendonça leg, MB col; 1m, Fátima, 29S528-4385, 7.IX.1956, P. Mendonça leg, MB col; 1m, Fátima, 29S528-4385, 14.IX.1956, J. Mendonça leg, MB col.

● ***Spilomyia saltuum***

This species has recently been published for Portugal by Carles-Tolrà & Rosado (2009). Furthermore there is an old publication by Corte (1903).

● ***Triglyphus escaleraei***

New genus and species to Portugal.

Carles-Tolrà (2006) added *Triglyphus primus* Loew, 1840 as a new genus and species for the Iberian Peninsula. Those three females were collected at Santa Coloma in Andorra.

This male specimen shares most characters described by Vujić (1994a), and the genitalia are identical with it. It has been collected near Porto in a suburban area: 'a city park of about 11 hectares that was created for recreational purposes. There you can find big areas set to lawn, a small stream that crosses the park and on which margins there are many plants like *Salix atrocinerea*, *Quercus robur*, *Sambucus nigra*, *Laurus nobilis*, *Rubus sp.* and various ornamental species. The park is surrounded by buildings and roads'. (pers. comm. RA)

This is the first citation of this species from the Iberian Peninsula, as the species has been recorded before only from Croatia, Montenegro and Morocco (Speight 2010).

COLLECTED SPECIMENS: 1m, Vila Nova de Gaia, Oliveira do Douro, Parque Municipal da Lavandeira, 29T5340-45523, 8.IX.2009, RA leg, AvE col.

● ***Volucella bombylans***

New species to Portugal.

The only reference available is from a recent photograph; it has not been collected.

PHOTOGRAPHICAL MATERIAL: 1f, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, on *Daucus carota* L., 13.VI.2007, AvE det, JA photo.

● ***Volucella elegans***

Gomes (1978) is the first to publish this species (1 female, July 1942, Gerês, DEEAN col.) without mentioning it as new to the Portuguese fauna. Lucas (1996) reports that Korb has collected specimens at Faro and Monchique in 1884.

● ***Volucella inanis***

New species to Portugal.

Several old specimens were found in the MZC collection.

COLLECTED SPECIMENS: 1m, Oliveira de Frades, 29T569-4509, [approx. 1900; AvE], MZC col; 3m & 2f, Vouzela, 29T574-4508, [approx. 1900; AvE], MZC col; 1m, Coja, Pisão, 29T588-4456, +230m, 20.VII.2010, AvE leg & col.

● ***Volucella pellucens***

Carles-Tolrà (2004) publishes this species as new to the Portuguese fauna, caught in Parque Nacional da Peneda-Gerês.

COLLECTED SPECIMENS: 1f, Bragança, Grandais, 5.VIII.2007, leg & col JA.

● ***Volucella zonaria***

Gomes (1978) claims the first recording of this species (1f, 28.X.1977, Tavira (Algarve) F.A. Illarco leg). But it was Nobre (1900) who mentions this species for the first time from two localities (Barca d'Alva and Vallongo).

● ***Xanthogramma dives***

*X. dives* is a valid species, though there is much confusion to separate it from *X. stackelbergi* Virolvitsh, 1975 (See also discussion in Van Eck, 2010).

I agree with Speight (2008) who writes "There are no clear differences between the concept of *X. dives* as applied here and *X. stackelbergi*, to judge from the rather inadequate information available about *X. stackelbergi* in existing literature. But, for now, the name *dives* is used here to draw attention to the existence of this taxon and to enable its separation from *X. pedissequum*." Speight & Sarthou (2010) provide some additional information regarding the status of this taxon. A provisional key to European *Xanthogramma* species is provided by Speight & Sarthou (2010).

Corti (1903) lists this species from the Gerês National Park by two female specimens, without giving further data. Maybe Corti has seen the specimens in the MZC. Listed by Leclercq as *X. ornatum*, who collected a male near Cantanhede (Beira Litoral) in 1963. After examination of this specimen, this appeared to be *X. dives*. Marcos-García *et al.* (2002b) do not list this species at all.

All *X. 'pedissequum'* that I collected so far in Portugal, turned out to be *X. dives*, and all but one specimen in the collections that I have studied are *X. dives*.

To my opinion it can be defended to reinstate this species for the Portuguese mainland. At this moment it cannot be excluded that some specimens from Portugal, now identified as *X. dives*, may belong to *X. stackelbergi* or a still undescribed species.

COLLECTED SPECIMENS: 2f, S. Gerez, VI.1899, MZC col; 6m & 3f, Coimbra, [approx. 1900; AvE], MZC col; 3m, Lorvão, [approx. 1900; AvE], MZC col; 1f, Coimbra, Maio [may, approx. 1900; AvE], MZC col; 1m, Oliveira de Frades, 29T569-4509, [approx. 1900; AvE], MZC col; 1m, Bussaco [Serra de Buçaco; AvE], 29T555-4466, [approx. 1900; AvE], MZC col; 1, Viseu, [approx. 1900; AvE], MZC col; 1f, Lisboa, Chelas, 29S48-428, 13.IV.1947, N.F. de Andrade leg, ICT col.; 1m, Fátima, 29S528-4385,

15.IX.1952, N. Mendonça leg, MB col; 1m, Cantanhede (Beira Litoral), 17.VII.1963, FSAGx col; 1m, Santarém, 29S527-4343, 30.IV.1972, P. Mendonça leg, MB col; 1f, Santarém, 29S527-4343, 12.V.1972, J. Mendonça leg, MB col; 1m, Vila Nova de Milfontes, 29S518-4175, 11.VII.1972, N.N. Mendonça leg, MB col; 2m, Oeiras, 29S473-4283, 9.III.1977, J. Pinto leg, INIA col; 1f, Santarém, 29S527-4343, 13.III.1977, P. Mendonça leg, MB col; 1m & 1f, Santarém, 29S527-4343, 5.IV.1977, N. Mendonça leg, MB col; 1m, Santarém, 29S527-4343, 6.IV.1977, P. Mendonça leg, MB col; 1m, Salvaterra de Magos, Muge, 29S524-4327, 4.V.1977, F.A. Ilharco leg, INIA col; 1m, Coruche, 29S540-4312, 22.IX.1977, J. Pinto leg, INIA col; 1f, Coruche, 29S540-4312, 5.V.1978, J. Pinto leg, INIA col; 1m, Oeiras, 29S473-4283, 6.IV.1979, A. Gomes leg, INIA col; 2m, Oeiras, 29S473-4283, 7.IV.1979, A. Gomes leg, INIA col; 1f, Algarve, Monchique, +400m, 7.IV.1983, AB leg & col; 1f, Serra de Peneda, +1000m, 19.VI.1983, AB leg & col; 1m, Manteigas, 29T623-4473, dead in pool, 22.VIII.2001, JGS leg & col; 1f, Aveiro, Veiros, 29T534-4511, +10m, 13.IV.2006, AvE leg, DD col; 1m, Medas, 29T546-4545, +40m, 17.IV.2006, AvE leg, DD col; 1m, Figueira de Castelo Rodrigo, 29T671-4529, +640m, 20.IV.2006, AvE leg & col; 1m, Aveiro, Veiros, 29T534-4511, +10m, 15.IV.2007, AvE leg & col; 1f, Porto de Mós, Alcaria, 29S519-4379, +285m, 13.VIII.2007, AvE leg & col; 1m, Barcelos, Gilmonde, 29T528-4595, 21.III.2008, RA leg, AvE col; 1m, Batalha, Casal da Amieira, 29S513-4389, +120m, 26.III.2008, AvE leg & col; 1m, Viseu, Silgueiros, Póvoa Dão, 29T589-4489, 8-10.IX.2009, Malaise-trap, JA leg & col; 2m, Paúl de Arzila, 29T538-4448, +20m, 17.VII.2010, AvE leg & col; 2m, Batalha, Casal do Jorge, 29S515-4389, +130m, 22.VII.2010, AvE leg & col. ADDITIONAL RECORDS OF SPECIMENS NOT COLLECTED, AvE leg: 1m, Batalha, Casal do Jorge, 29S515-4389, +130m, 22.VII.2010.

● *Xanthogramma pedissequum*

Only one specimen has been found that reliably belongs to this taxon. It was captured in the northwest of Portugal. COLLECTED SPECIMENS: 1f, Barcelos, Vilar de Frades, 29T536-4598, 22.VII.1978, J. Pinto leg, INIA col.

● *Xylota sylvarum*

New species to Portugal. COLLECTED SPECIMENS: 1f, Batalha, Casal da Amieira, 29S513-4389, +120m, 11.VII.2008, AvE leg & col.

**Conclusions**

The Iberian checklist by Marcos-García *et al.* (2002b) list 86 species known from the Portuguese mainland. This present checklist adds new species (N in the list), resulting in a total of 167 species known from the Portuguese mainland. Nine genera and 71 species are new to Portugal. Eight taxa have been removed from the original checklist by Marcos-García *et al.* (2002b).

Of the 86 species originally listed for Portugal (Marcos-García *et al.*, 2002b), most species have been found either in existing collections or by recent collecting. Species that could not be verified and confirmed this way are: *Chrysogaster simplex*, *Chrysotoxum elegans* and *C. fasciolatum*, *Epistrophe flava* Doczkal & Schmid, 1994, *Eumerus micans* and *E. strigatus*, *Eupeodes bucculatus* and *E. lapponicus*, *Merodon albifrons*, *Psilota innupta*, *Riponnensia longicornis* and *Sphaerophoria taeniata*.

Some changes are the result of new insights (eg. *Paragus pecchiolii*: Sommaggio, 2002) or revisions (eg. *Merodon*

spp: a revision of Iberian *Merodon* (Marcos-García *et al.*, 2007) resulted in this adapted series of species now confirmed for Portugal). Certain genera, or parts of it, are still in need of revision (eg. *Eumerus*, *Xanthogramma*, *Chrysotoxum*, *Paragus* aff. *bicolor*).

Due to the lack of sufficient data, no reliable conclusions can be made upon the history of hoverfly species in Portugal. Though the landscape, in particular many forests, have changed dramatic over the last fifty years in favor of tree species like *Eucalyptus* sp. (paper industry) and pine. Likewise, barages have flooded important habitats along Portuguese rivers. Cork oak plantations are losing their economic value and in many cases they are replaced by other sorts of trees or crop with better economic prospect.

More regular and consistent collecting is urgently needed, to be able to come to more reliable conclusions on the Portuguese hoverfly fauna.

**Biodiversity**

The countries on the Iberian Peninsula share a common responsibility, for one reason because of the relatively high level of endemism. This endemism also occurs within the Syrphidae, especially in those genera of which the larvae live inside bulbs, roots or other parts of plants. This means that many of these species rely extremely on a limited number of plants, sometimes even on one plant species only.

Thus far, there has not been found an endemic hoverfly species solely found within the borders of mainland Portugal. On the other hand, more endemic species so far only found in Spain, are to be expected to occur in Portugal as well.

For those endemic hoverflies the peninsula serves almost like an island, since it is the Pyrenees and the seas and the oceans that prevent species from migrating onwards.

Landscapes in Portugal are changing, sometimes rapidly. Under the pressure of European progress major changes in agricultural land use, forestry, infrastructure, water and energy supply occurred in the past decades and continue to change a lot in Portugal. Unfortunately most changes don't benefit nature.

A growing awareness and knowledge of the rich and unique nature, flora and fauna on the Iberian Peninsula is needed to conserve and preserve it. In the long end, everybody will benefit.

**Acknowledgements**

Many people have contributed in one way or another to help me accomplish this document on the Syrphidae of the Portuguese mainland. It is only fair to mention them all. But I will not do so. To all of you, friends and colleagues, who helped me survey literature, visit collections, receive loans, explore the land, identify flies and plants, give me advise when asked for and when not, sent me pictures as well as collected hoverflies, shared with me their bread and wine, the fado and their warm hearts; to all these people I just want to say two important words: thank you!

I will just make one exception, and this is for Alzira Antunes: love you always.

And to the country of Portugal I can only say: I will be back.

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