

## Dragonfly (Insecta, Odonata) records from three northern Portugal localities

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**Abstract:** The known distribution of 21 dragonfly and damselfly species is increased in continental Portugal. Nine species are recorded for the first time from the Natura 2000 site "Valongo", including a new population of *Oxygastra curtisii* (Dale, 1834). The known distribution of *Anax parthenope* (Selys, 1839) is significantly increased towards the north-west of Iberia.

**Keywords:** Odonata, faunistics, new records, Portugal, Valongo.

### Citas de libélulas (Insecta, Odonata) de tres localidades del norte de Portugal

**Resumen:** Se presentan citas de 21 especies de Odonata, ampliando los conocimientos sobre su distribución en Portugal continental. Nueve de las especies son novedades para la fauna del Sitio Natura 2000 "Valongo" incluyendo una nueva población de *Oxygastra curtisii* (Dale, 1834). La distribución de *Anax parthenope* (Selys, 1839) es ampliada significativamente hacia el noroeste de la Península Ibérica.

**Palabras clave:** Odonata, faunística, nuevos registros, Portugal, Valongo.

### Introduction

Knowledge about the Odonata of Portugal has significantly improved in recent years, with the publication of an annotated bibliography (Ferreira & Weihrach, 2005) and a critical checklist (Ferreira *et al.*, 2006). In terms of the species' distributions and the general geographic knowledge, a summary of the available data was presented in the 4<sup>th</sup> World Dragonfly Association International Symposium of Odonatology (Ferreira *et al.*, 2005b), the main highlights of which were the facts that there was no information for 55% of the 10 km UTM squares ("information deserts") and that, regarding the already surveyed areas, the sampling effort was considerably asymmetrical. Although several contributions have since been published, large gaps still remain in the known distribution of most species.

In this paper we present records of 21 dragonflies from three localities in the area of Porto, in the north-west of Portugal: Vale de Couce (Valongo, 29TNF45), Espírito Santo stream in Miramar (Vila Nova de Gaia, 29TNF24) and one of the municipal parks (Parque da Cidade) in the city of Porto (Porto, 29TNF25). The first site is of special interest because it is part of the Natura 2000 site "Valongo" (PTCON0024), which is located east of Porto.

Specimens listed below were photographed by Albano Soares between July and December 2007 unless otherwise stated. The identification of the specimens was based on Askew (1988) and Dijkstra & Lewington (2006).

### Species list

#### Calopterygidae Buchecker, 1876

*Calopteryx haemorrhoidalis* (Vander Linden, 1825)  
MATERIAL EXAMINED: Vale de Couce, 08-07-2007 (1 ♂ and 1 ♀), 15-08-2007 (1 ♂), 19-08-2007 (1 ♂).

#### Lestidae Selys, 1840

*Lestes barbarus* (Fabricius, 1798)  
MATERIAL EXAMINED: Parque da Cidade, 28-09-2007 (1 ♂).

*Lestes virens* (Charpentier, 1825)  
MATERIAL EXAMINED: Parque da Cidade, 28-10-2007 (1 ♂, 1 ♂ and 1 ♀ mating, 1 ♂ and 1 ♀ in tandem).

*Lestes viridis* (Vander Linden, 1825)  
MATERIAL EXAMINED: Parque da Cidade, 14-10-2007 (1 ♂); Vale de Couce, 15-08-2007 (1 ♂); Miramar, 05-08-2007 (1 ♀).

#### Coenagrionidae Kirby, 1890

*Ceragrion tenellum* (Villers, 1789)  
MATERIAL EXAMINED: Parque da Cidade, 18-08-2007 (1 ♂ and 1 ♀ in tandem); Vale de Couce, 08-07-2007 (1 ♂, 1 ♂ and 1 ♀ in tandem), 26-08-2007 (1 ♂ and 1 ♀ mating).

*Enallagma cyathigerum* (Charpentier, 1840)  
MATERIAL EXAMINED: Parque da Cidade, 04-08-2007 (1 ♂), 12-08-2007 (1 ♂), 18-08-2007 (1 ♂), 01-09-2007 (1 ♂ and 1 ♀).

#### *Ischnura graellsii* (Rambur, 1842)

MATERIAL EXAMINED: Parque da Cidade, 14-07-2007 (1 ♂, 1 ♂ and 1 ♀ mating), 11-08-2007 (1 ♂), 18-08-2007 (1 ♂ and 1 ♀ mating), 01-09-2007 (1 ♂); Vale de Couce, 02-09-2007 (1 ♀).

#### *Pyrhosoma nymphula* (Sulzer, 1776)

MATERIAL EXAMINED: Miramar, 15-04-2007 (1 ♂), 29-04-2007 (1 ♂).

#### Platycnemididae Tillyard, 1938

##### *Platycnemis latipes* Rambur, 1842

MATERIAL EXAMINED: Vale de Couce, 22-07-2007 (1 ♂), 15-08-2007 (1 ♂), 15-08-2007 (1 ♀).

##### *Platycnemis acutipennis* Selys, 1841

MATERIAL EXAMINED: Vale de Couce, 26-05-2007 (1 ♀), 03-06-2007 (1 ♂).

#### Aeshnidae Selys, 1850

##### *Aeshna cyanea* (Müller, 1764)

MATERIAL EXAMINED: Vale de Couce, 26-08-2007 (1 ♂).

##### *Anax imperator* Leach, 1815

MATERIAL EXAMINED: Parque da Cidade, 14-07-2007 (1 ♂), 21-07-2007 (1 ♂), 12-08-2007 (1 ♂), 08-09-2007 (1 ♂), 09-09-2007 (1 ♂), 20-09-2007 (1 ♂); Miramar, 05-08-2007 (1 ♀ ovipositing).

##### *Anax parthenope* (Selys, 1839)

MATERIAL EXAMINED: Parque da Cidade, 06-09-2007 (1 ♂ and 1 ♀ mating, photo by Hugo Amador), 23-09-2007 (1 ♂).  
Comments: The specimen was photographed when eating one *Sympetrum striolatum*.

#### Gomphidae Selys, 1850

##### *Onychogomphus forcipatus* (Linnaeus, 1758) ssp. *unguiculatus* Vander Linden, 1823

MATERIAL EXAMINED: Vale de Couce, 29-07-2007 (1 ♂), 19-08-2007 (1 ♂), 26-08-2007 (1 ♀).

##### *Onychogomphus uncatus* (Charpentier, 1840)

MATERIAL EXAMINED: Vale de Couce, 22-07-2007 (1 ♂).

#### Corduliidae Tillyard, 1926

##### *Oxygastra curtisii* (Dale, 1834)

MATERIAL EXAMINED: Vale de Couce, 08-07-2007 (1 ♂, 1 ♂ and 1 ♀ mating), 02-09-2007 (1 ♀).

#### Libellulidae Selys, 1850

##### *Crocothemis erythraea* (Brullé, 1832)

MATERIAL EXAMINED: Parque da Cidade, 04-08-2007 (1 ♂), 11-08-2007 (1 ♂), 12-08-2007 (1 ♂), 25-08-2007 (1 ♂), 15-09-2007 (1 ♂), (1 ♀).

##### *Orthetrum cancellatum* (Linnaeus, 1758)

MATERIAL EXAMINED: Parque da Cidade, 14-07-2007 (1 ♂), 28-07-2007 (1 ♂), 04-08-2007 (1 ♂, 1 ♂ and 1 ♀ mating), 01-11-2007 (1 ♂).

*Orthetrum coerulescens* (Fabricius, 1798)

MATERIAL EXAMINED: Vale de Couce, 22-07-2007 (1 ♂), 19-08-2007 (1 ♂).

*Sympetrum fonscolombii* (Selys, 1840)

MATERIAL EXAMINED: Parque da Cidade, 14-07-2007 (1 ♂), 20-07-2007 (1 ♂), 28-07-2007 (1 ♂ and 1 ♀ mating, 1 ♂ and 1 ♀ in tandem), 01-09-2007 (1 ♀), 16-09-2007 (1 ♂ and 1 ♀), 20-09-2007 (1 ♂ and 1 ♀ mating), 28-10-2007 (1 ♂).

*Sympetrum striolatum* (Charpentier, 1840)

MATERIAL EXAMINED: Parque da Cidade, 02-09-2007 (1 ♀), 23-09-2007 (1, prey of *A. parthenope*), 28-10-2007 (1 ♂), 01-11-2007 (1 ♂), 04-11-2007 (1 ♂), 11-11-2007 (1 ♂), 18-11-2007 (1 ♂), 16-12-2007 (1 ♂ and 1 ♀ mating).

*Trithemis annulata* (Palisot de Beauvois, 1807)

MATERIAL EXAMINED: Parque da Cidade, 12-08-2007 (1 ♂), 09-09-2007 (1 ♀), 16-09-2007 (1 ♂), 28-09-2007 (2♂ and 1 ♀); Vale de Couce, 26-08-2007 (1 ♂).

## Discussion

The known distribution of *Anax parthenope* is significantly increased towards the north-west of Iberia. Previous records from Portugal (fig. 1) where made by Owen (1958), Gardiner (1993) Gardiner & Sturgess (1994), Hartung (1996), Jahn (1996), Jödicke (1996), Röhn (1996), Malkmus (1998, 2002), Kappes & Kappes (1999) and Figueiredo & Gouveia (2001), and also in two unpublished reports by Gardiner and Geschke. It is worth mentioning that a pre-1985 record from Coimbra mapped by Malkmus (2002) derives from an unpublished catalogue of the collections of the Museu Zoológico da Universidade de Coimbra (MZCP) produced by T. Williams in 1990. The absence of previous records of the species from Coimbra is especially significant if we consider that it was one of the better studied areas of the country in the first half of the twentieth century and that a set of dubious "Coimbra" labelled specimens exists in the MZCP collection (see Ferreira *et al.*, 2006), which calls into question the reliability of the record.

Furthermore, data of eleven species of Odonata is presented from the Natura 2000 site "Valongo", nine of which are recorded for the first time (previous records in Ferreira *et al.*, 2005a), the data presented here thus being the current Odonata inventory of the site. The most remarkable record presented is that of the legally protected Orange-spotted emerald, *Oxygastra curtisii*, which, besides being included in the Fauna-Flora-Habitat directive of the European Union (Sahlén *et al.*, 2004), is considered "Near threatened" by the IUCN (Boudot *et al.*, 2006).

The Orange-spotted emerald's presence adds to the already recognized natural values of the site "Valongo", namely eight natural and semi-natural habitats listed in the Fauna-Flora-Habitat directive of the European Union, and a number of species included therein, such as the narrow endemic daffodil *Narcissus cyclamineus* DC., the fern *Culcita macrocarpa* C. Presl, the Greater Horseshoe Bat *Rhinolophus ferrumequinum* (Schreber, 1774) and the Schreiber's Green Lizard *Lacerta schreiberi* Bedriaga, 1878. It is also home to the largest known breeding site of the northwestern Iberian endemic Golden-striped salamander *Chioglossa lusitanica* Bocage, 1864. Therefore, the detection of the Orange-spotted emerald in the area not only increases and highlights the importance of this Natura 2000 site but also strengthens the need for a more detailed and careful study regarding this area's invertebrates, of which it constitutes the only protected species hitherto recorded.

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**References:** ASKEW, R. R. 1988. *The dragonflies of Europe*. Harley Books, Colchester. • BOUDOT, J.-P., E. RISERVATO & S. HARDERSEN 2006. *Oxygastra curtisii*. In: IUCN 2007. *2007 IUCN Red List of Threatened Species*. <www.iucnredlist.org>. Downloaded on 20 February 2008. • DIJKSTRA, K.D.B. & R. LEWINGTON 2006. *Field Guide to the Dragonflies of Britain and Europe*. British Wildlife Publishing, Dorset. • FERREIRA, S. & F. WEIHRAUCH 2005. Annotated bibliography of odonatological literature from continental Portugal, Madeira, and the Azores (Odonata). *Libellula*, 24: 109-128. • FERREIRA, S., J.M. GROSSO-SILVA & P. SOARES-VIEIRA 2005a. Miscellaneous records of dragonflies and damselflies (Insecta, Odonata) for Continental Portugal. *Boln. S. E. A.*, 36: 275-



**Fig. 1.** Known distribution of *Anax parthenope* (Selys, 1839) in continental Portugal. Bibliographic records are classified as pre-1985 ("○") and 1985 onwards ("●"). The new record from Parque da Cidade (Porto) is marked with "\*" and the two other localities with material examined are marked with squares ("□").

277. • FERREIRA, S., J.M. GROSSO-SILVA, P. SOARES-VIEIRA & P. SOUSA 2005b. *Odonata of continental Portugal: mapping the knowledge and identifying geographical gaps*. Poster presented at the 4<sup>th</sup> World Dragonfly Association International Symposium of Odonatology (Pontevedra - Spain, July 2005). • FERREIRA S., J.M. GROSSO-SILVA, M. LOHR, F. WEIHRAUCH & R. JÖDICKE 2006. A critical checklist of the Odonata of Portugal. *International Journal of Odonatology*, 9 (2): 133-150. • FIGUEIREDO, D. & A. GOUBEIA 2001 (1999). Inventarição da taxocenose Odonata na Bacia do Rio Guadiana. *Actas VIII Congr. Ibérico Entomologia, Boln. Soc. port. Ent.*, Suplemento 6: 287-292. • GARDINER, A.J. 1993. The dragonflies of Quinta da Rocha: September to December 1992. *A Rocha Observatory Report for the Year 1992* [Associação A Rocha, Portimão]: 89-91. • GARDINER, A.[J.] & P. STURGESS 1994. Dragonflies on Quinta da Rocha in 1993. *A Rocha Observatory Report for the Year 1993* [Associação A Rocha, Portimão]: 80-84. • HARTUNG, M. 1996. Odonata from the Iberian Peninsula with a description of *Calopteryx haemorrhoidalis almogravensis* ssp. n. from Portugal. *Advances in Odonatology*, Supplement 1: 53-59. • JAHN, P. 1996. Libellen im Einzugsgebiet des Guadiana in Südostportugal. *Advances in Odonatology*, Supplement 1: 65-76. • JÖDICKE, R. [ed.] 1996. Faunistic data of dragonflies from Portugal. *Advances in Odonatology*, Supplement 1: 149-153. • KAPPES, E. & W. KAPPES 1999. Südliche iberische Halbinsel – Naturkundliche Reisenotizen. *Algarve/Portugal 22. bis 29. März 1997; Andalusien/Spanien 3. bis 17. April 1998; 11. bis 27. September 1998; Route; Artenlisten: Säugetiere, Vögel, Libellen, Tagfalter, Amphibien/Reptilien, Farbfotos. Naturkundliche Reiseberichte*, 13: 1-112. • MALKMUS, R. 1998. Frühjahrsbeobachtungen von Libellen in Portugal. *Libellula*, 17: 91-96. • MALKMUS, R. 2002. Die Verbreitung der Libellen Portugals, Madeiras und der Azoren. *Nachrichten des Naturwissenschaftlichen Museums der Stadt Aschaffenburg*, 106: 117-143. • OWEN, D.F. 1958. Dragonfly migration in south-west Portugal, autumn 1957. *The Entomologist*, 91: 91-95. • RÖHN, C. 1996. Frühjahrsbeobachtungen von Libellen im zentralen und südlichen Teil der Iberischen Halbinsel. *Advances in Odonatology*, Supplement 1: 129-137. • SAHLÉN, G., R. BERNARD, A. CORDERO, R. KETELAAR & F. SUHLING 2004. Critical species of Odonata in Europe. In: Clausnitzer, V. & R. Jödicke (Eds.) "Guardians of the watershed. Global status of dragonflies: critical species, threat and conservation". *International Journal of Odonatology*, 7 (2): 385-398.