

Notes on the distribution and biology of the Hairy Hawker – *Brachytron pratense* (Müller, 1764) – in Portugal (Odonata: Aeshnidae)

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Abstract: *Brachytron pratense* (Müller, 1764) is a small aeshnid well distributed and common over much of Europe, but extremely rare in the Iberian Peninsula, where it has a scattered distribution and is seldom seen. During the years 2008 to 2010 the authors carried out research on the distribution of the species in several coastal districts of western Portugal, and found new populations in areas never reported previously. Our observations allow us to make a first approach on the biology and conservation of the species in continental Portugal.

Key words: Odonata, Aeshnidae, *Brachytron pratense*, chorology, biology, conservation, Portugal.

Notas sobre la distribución y biología de *Brachytron pratense* (Müller, 1764) en Portugal (Odonata: Aeshnidae)

Resumen: *Brachytron pratense* (Müller, 1764) es un aésnido de pequeña talla que se encuentra bien distribuido por Europa, donde resulta ser una especie común. En la Península Ibérica es uno de los odonatos más raros, con poblaciones muy escasas y que ha sido visto en contadas ocasiones. Durante los años 2008 a 2010 los autores desarrollaron trabajos de campo para localizar la especie en regiones costeras del oeste de Portugal, logrando localizar algunas poblaciones en zonas desconocidas hasta entonces. Los datos recogidos han proporcionado material para un primer apunte sobre la biología y conservación de la especie en Portugal continental.

Palabras clave: Odonata, Aeshnidae, *Brachytron pratense*, corología, biología, conservación, Portugal.

Introduction

Brachytron pratense (Müller, 1764) is a small but conspicuous aeshnid whose coloured and hairy body and moderate wingspan help in its identification. There are some aeshnids with similar coloration and size, flying in continental Portugal (e.g. *Aeshna affinis* Vander Linden, 1820 and *Aeshna mixta* Latreille, 1805), but they fly in the summer, when there are no adults of *Brachytron pratense* (Müller, 1764) on the wing (see next chapter).

The species is widespread over much of Europe and is common and abundant throughout much of its range (Kalkman 2010). In the Mediterranean it is quite rare and in the Iberian Peninsula is one of the native dragonflies with the least number of records (cf. Boudot et al., 2009).

The scarcity of the species in Portugal is evident from the lack of new data over several decades: after its discovery near Coimbra (Seabra, 1937) the species has been reported only once, from two locations to the north of the first finding (Ferreira & Grosso-Silva, 2003). In the present work several new populations are given, most of them located between the first locality found in the 1st half of XXth century and the records of the last decade. In the other hand, we have filled a gap of cf. 170 km between the northernmost Portuguese population (Barrinha de Esmoriz) and the southerly of Galicia (Bodeira pond, O Grove). Presently, the species is known from eight UTM (10x10 km) dots (see fig. 1) and we admit that a small number of new locations are to be found, as suitable habitats in central Portugal are to be checked in the near future.

We believe that the early spring flight period, is the main reason for the low number of findings. The species is probably overlooked by many naturalists who are more active during the summer.

Biology

The adults are fond of still or slow flowing waters, where the larvae develop under dead vegetation floating in canals, large ditches, dykes and ponds (Askew, 1988). Sunny places in forested areas, sometimes in acidic environments, are preferred and the altitudinal range is from sea level to 1100m (Aguilar & Dommanget, 1998). In Spain the species has been found in ponds near the coast (Azpilicueta Amorín et al., 2007) and in inland ponds at low altitudes (Ocharan et al., 2007).

In Portugal the species has been found in lentic ecosystems, namely in ponds, in brooks with a very slow flow, and a small number in brackish waters. Narrow waterlines with abundant vegetation were preferred and mating has been observed by the middle of the day, among or in the vicinity of dense vegetation (*Phragmites* spp.). We have found this species always in coastal districts, the records having a linear distance from the sea that goes from 0.55 to 17.55 km (with a mean of 6.69 km). Most of the observations have been made in lowlands located at only 10m a.s.l. Two populations are placed a bit higher, at 20 and 60 m.

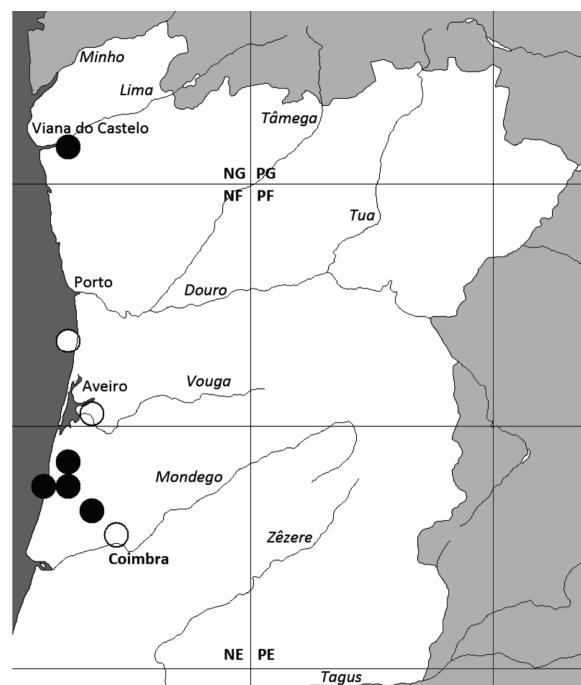


Fig. 1. Distribution of *Brachytron pratense* (Müller, 1764) in Portugal (UTMs 10x10 km). Open circles: bibliographical records. Closed circles: new records. Main cities and rivers (italic) are shown. // Distribución de *Brachytron pratense* (Müller, 1764) en Portugal (UTMs 10x10 km). Círculos abiertos: citas bibliográficas. Círculos cerrados: nuevas citas. Se muestran las ciudades principales y los ríos (en cursiva).

According to the observations made by Ferreira & Grosso-Silva (2003), the flight season can start in early March (first record from March 9th). The flight period extends over a couple of months and the last date we have recorded is May 22nd when mature and some worn adults were still in flight. The relative low number of observations is insufficient to determine the flight peak that appears to occur from middle April to middle May, even if there is a gap in our observations in one week of this month (see fig. 2), due to insufficient sampling effort. Research conducted during the months of June of the years

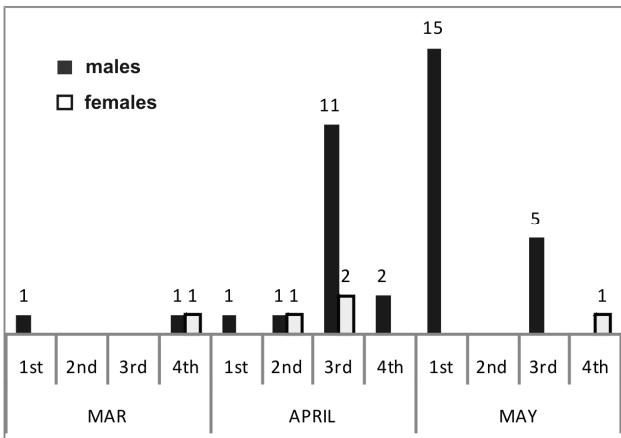


Fig. 2. Weekly records (n=42) of *Brachytron pratense* (Müller, 1764) in Portugal. Data from personal observations and from Ferreira & Grossó-Silva (2003). // Distribución de las citas por semanas (n=42) de *Brachytron pratense* (Müller, 1764) en Portugal.

2009 and 2010 was unsuccessful in finding the species in its strongholds and appears that the flight ends by the last week of May. Ocharan *et al.* (2007) have found adults on the wing by the middle of July at 190 m asl in Asturias region (northern Spain) and Dijkstra (2007) refers the flight period even at the beginning of August. The reason for the clear advance in the Portuguese populations' flight compared with Asturian and Central European ones is not clear, but seems to be related with the warmer conditions of western Portugal, where populations are established within the 14 °C mean annual temperature range (cf. IGEO temperatures map).

Conservation

This species is well distributed over Europe and reaches the Caucasus and the Caspian Sea in the east (Askew, 1988). Kalkman (2009) quotes the species as common and abundant throughout most of its range, but several authors refer a different statement for some regions: in England and Wales is one of the rarest dragonflies (Nicolet *et al.*, 2007; Keeble *et al.*, 2009), in Belgium and Luxemburg it is scarce (Grand & Boudot, 2007) and in Serbia is considered a rare species (Jovic *et al.*, 2009) just to give a couple of examples.

Ocharan *et al.* (2009) gave the present distribution of the species in Spain, which is reduced to one population in Asturias (in the north), and three populations in the northwest (Galicia); recently a new population in Basque country has been found (Maguregi Arenaza, 2009). According to the same authors, the old records of Longinos Navás from Catalonia and Zaragoza (in the northeast) have never been confirmed and the Huelva population (in the south) has been lost, and the same occurred with some Asturian populations, whose habitats have been destroyed. This means that the species is threatened with extinction in the Iberian Peninsula, where only a few populations remain. Our findings in the Mira area, where the species is well distributed and locally common, suggest that this population has the potential to survive in the long term, if some precautions will be taken with habitat changes, limiting noxious activities like water pollution, improved agriculture and urbanisation near waterlines.

Several European papers refer the species as *threatened* or *declining* in some areas (cf. Olsvik & Dolmen, 1992; Painter, 1999; Sahlén & Ekestubbe, 2001; De Kniif *et al.*, 2003; Grand & Boudot, 2007, Riservato *et al.*, 2008), but Kalkman (2009) gave a general figure for the range, referring an apparent recover of the decline that occurred in the 1970s and 1980s in western Europe.

Our observations suggest that the species might inhabit other locations in Portugal, especially in the coastal districts from the river Minho (on the north-western border) to an area south of the Mondego river near Coimbra. Nevertheless, extensive research was made in suitable areas inside that range during the known flight period, but we were unable to find the species.

We strongly believe that more field studies are needed to assess the situation of the species in continental Portugal. We think that the major conservation problems in the country are the lack of public awareness, the absence of legal protection, the location of the populations (outside protected areas), its restricted distribution and changes in the habitats (pollution, drainage and potentially climate changes). These threats surely merit an action plan to survey and protect the

standing populations as is stated in the IUCN Red List (cf. Kalkman, 2009).

Appendix

Observations made during the present study (by county):

Cantanhede: Febres (Lagoas), brook at 60 m (29TNE3271), 3-IV-2008 (1 male, Maravalhas).

Espinho: brook near Esmoriz at 10 m (29TNF2935), 20-V-2009 (4 males, Albano Soares & Maravalhas).

Estarreja: Esteiro de Salreu at 10 m (29TNF3409), 22-V-2009 (1 female, Júlio Machado Neto), 27-IV-2010 (1 male, Júlio Machado Neto).

Mira: Corrente dos Foros at 10 m (29TNE2280), 5-V-2010 (2 males, Albano Soares & Maravalhas); Casal de São Tomé (Vala dos Moinhos, Azenhas do Faim) at 20 m (29TNE2173), 15-IV-2010 (1 male, Albano Soares & Maravalhas); Praia de Mira (Videira do Sul) pond and adjacent brook at 10 m (29TNE1777), 11-IV-2010 (1 male and 1 female, Albano Soares & Maravalhas), 15-IV-2010 (9 males and 2 pairs mating, Albano Soares & Maravalhas), 26-IV-2010 (1 male, Albano Soares & Maravalhas), 5-V-2010 (6 males, Albano Soares & Maravalhas).

Viana do Castelo: Vila Franca, São Simão brook at 10 m (29TNG2015), 4-V-2010 (1 male, Albano Soares & Maravalhas), open pond by the São Simão brook at 10 m (29TNG2115), 4-V-2010 (6 males, Albano Soares & Maravalhas).

A pair has been collected from Mira (Maravalhas coll.), the other specimens remained in the wild.

Acknowledgements

We thank Dr. Júlio Machado Neto for the authorization to publish his records, Sónia Ferreira for additional bibliography and Martin Corley for the revision of the manuscript.

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Primera cita de *Pseudolucanus barbarossa* Fabricius, 1801 (Coleoptera, Lucanidae) para la provincia de Sevilla (España)

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Resumen: Se aporta la primera cita de *Pseudolucanus barbarossa* Fabricius, 1801 para la provincia de Sevilla (España) tras la captura de un ejemplar en el término municipal de Cazalla de la Sierra.

Palabras clave: Coleoptera, Lucanidae, *Pseudolucanus barbarossa*, primera cita, España, Andalucía, Sevilla.

First record of *Pseudolucanus barbarossa* Fabricius, 1801 (Coleoptera, Lucanidae) for the province of Seville (Spain)

Abstract: The capture of a specimen of *Pseudolucanus barbarossa* Fabricius, 1801 in Cazalla de la Sierra provides the first record of this species from Seville province (Spain).

Key words: Coleoptera, Lucanidae, *Pseudolucanus barbarossa*, first record, Spain, Andalusia, Seville.

Hasta hace pocos años la distribución conocida de *Pseudolucanus barbarossa* Fabricius, 1801 en Andalucía abarcaba todas las provincias excepto Sevilla (GTLI, 2003; Martínez García, 2007; López-Pérez, 2007). Con esta nueva cita se amplía la distribución de esta especie a toda la comunidad andaluza.

El único ejemplar capturado es un individuo ♂ que fue encontrado en el denominado “Camino del Obispo”, en el término municipal de Cazalla de la Sierra (UTM 30STH50), el 13-VIII-2010 (Arturo Iglesias leg.). El individuo fue interceptado por las luces de un vehículo cuando atravesaba el camino volando. La zona de captura se encuentra a 550 msnm y está constituida por un alcornocal parcialmente adehesado, con presencia eventual de quejigos (*Quercus faginea* Lam.) y encinas (*Quercus ilex ballota* (Desf.) Samp.) y con un sotobosque arbustivo poco denso, compuesto fundamentalmente por cistáceas como *Cistus salvifolius* L. y *Cistus*

crispus L. El ejemplar se encuentra actualmente depositado en la colección del primer autor.

Bibliografía: GRUPO DE TRABAJO SOBRE LUCÁNIDOS IBÉRICOS (GTLI) 2003. Distribución de *Pseudolucanus barbarossa* (Fabricius, 1801) (Coleoptera, Lucanidae) en la Península Ibérica. *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*, **32**: 257-266. • LÓPEZ-PÉREZ, J. J. 2007. Confirmación de la presencia de *Pseudolucanus barbarossa* (Fabricius, 1801) en Huelva (suroeste peninsular, Andalucía) (Coleoptera, Lucanidae). *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*, **41**: 470. • MARTÍNEZ GARCÍA, A. 2007. *Pseudolucanus barbarossa* (Fabricius, 1801) (Coleoptera, Lucanidae) en la provincia de Málaga. *Boletín de la Sociedad Entomológica Aragonesa (S.E.A.)*, **40**: 545-547.