

A 1966 Iberian record of *Orthetrum trinacria*

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SUMMARY

Whilst working on the collections of P-A. Robert, one of the authors (CB) discovered a larval specimen that proved to be *Orthetrum trinacria* (Selys, 1841). This specimen was originally collected in 1966 and pre-dates the rediscovery of this species in Europe from Sardinia by six years. The paper also discusses the early records from Iberia and speculates on the possible reasons of its range expansion.

RESUMEN

Mientras examinaba la colección de P-A. Robert, uno de los autores (CB) descubrió una larva que ha resultado ser *Orthetrum trinacria* (Selys, 1841). Este espécimen fue recolectado originalmente en 1966, avanzando la fecha del redescubrimiento de la especie en Europa de seis años. El artículo incluye una discusión sobre las primeras citas de la especie en Iberia y las posibles razones de la expansión de su rango de distribución.

INTRODUCTION

Orthetrum trinacria (Selys, 1841), the Long Skimer, is a Libellulid which distribution is primarily African, although the type locality of the species is Sicily. Indeed the specific name τρινακρία (Trinakria) refers to the Greek word for triangle and describes the shape of this territory, currently appearing as a three bent running legs depicted on the island's flag.

Following its description in 1841, *O. trinacria* was not recorded again in Europe until 1972 when it was found in Sardinia (Bucciarelli, 1977). Subsequent surveys have confirmed the continuing presence of *O. trinacria* in Sardinia where it seems to prefer coastal water bodies (Hardersen & Leo, 2011).

In the early 1980s, the species was discovered for the first time in mainland Europe in Iberia and on a number of occasions. Although the first records dated from 1980-1981 (Hartung, 1985), the first published findings were made in June 1983 only (Belle 1984). Subsequent observations were communicated from Spain by Hartung

BUCCIARELLI, I. (1977) Dati preliminari sul popolamento odonatologico di Calabria, Sicilia e Sardegna. *Annali del Museo civico di Storia naturale Giacomo Doria*, Genova, **81**: 374-386.

HARDERSEN, S., & LEO, P. (2011) Dragonflies of Ilesiente (SW Sardinia) and additional records of rare or poorly known species from Sardinia (Odonata). *Conservazione Habitat Invertebrati*, **5**: 243-253.

HARTUNG, M. (1985) *Orthetrum trinacria* (Sel.) as a part of the dragonfly fauna in southern Spain. *Notul. Odonat.*, **2**(6): 89-108.

BELLE, J. (1984) *Orthetrum trinacria* new to the fauna of Spain, with records of three other Afrotropical Anisoptera. *Entomol. Bericht.*: **44**: 79-80.

CONESA-GARCÍA, M. Á. (1985) A new record of *Orthetrum trinacria* in the Iberian Peninsula. *Notul. Odonat.*, **2**(5): 83-84.

GARCÍA PARRÓN, M. & BENÍTEZ-DONOSO, A. (1988) A record of the exuviae of *Orthetrum trinacria* from northern Extremadura, Spain. *Notul. Odonat.*, **3**: 33-34.

BENÍTEZ-DONOSO, A., & GARCÍA-PARRÓN, M. J. (1989) Datos sobre la biología de algunos Anisópteros en la Península Ibérica. *Bol. AeE*, **13**: 195-200.



Figure 1: Map showing records of *Orthetrum trinacria* in Iberia -up to and including 1991- taken from Table 1. Red Star: new record in Mine de São Domingos (Portugal).

Map	Reference	Province	Date	Locality	Observation
Red Star	New Record	Alentejo (PT)	4-2-1966	Mine de São Domingos	1 larve collected by Robert
1	Hartung (1985)	Huelva (SP)	Sept. 1980	Laguna de la Madre	1 male.
2	Hartung (1985)	Cáceres (SP)	July 1981	A stream close to Río Burdalillo	1 male [this locality was noted as belonging to Badajoz].
3	Belle (1984)	Huelva (SP)	June 1983	Embalse de San Bartolome de la Torre	2 mature males and 1 immature female collected; few more males observed in the field.
4	Hartung (1985)	Huelva (SP)	Sept. 1984	Doñana, Acebuche	1 female
5	Conesa-García (1985)	Almería (SP)	Year 1985	Albufera Menor de Adra	A large number of specimens are collected (n= 43) from June up to October. Buttler (1992) found exuviae at this site.
6	Donoso & García Parrón (1989)	Cáceres (SP)	Summers 1986-1987	The species is noted at 3 localities	A large population is noted at a Reservoir near Malpartida de Plasencia, where an exuvia was found (García-Parrón & Benítez-Donoso, 1988).
7	Blanco & Castro (1995)	Cáceres (SP)	Summers 1986-1987	The species is noted at 9 localities	Widespread distribution in Cáceres.
8	Jahn (1996)	Alentejo (PT)	June 1991	reservoir 3 km NE of Pulo do Lobo (Portugal)	Species noted at medium density; with evidence of reproduction reported

Table 1: Early records of *Orthetrum trinacria* in Iberia up to and including 1991.

(1985), Conesa-García (1985), García Parrón & Donoso (1988), Donoso & García Parrón (1989), Benítez-Donoso (1990), Blanco & de Castro (1995) and from Portugal by Jahn (1996). A summary of the first records in the Iberian Peninsula is represented in Table 1 and Figure 1.

BENÍTEZ-DONOSO, A. (1990) *Los Odonatos de Extremadura* (Tesis de Licenciatura). Universidad de Oviedo, Oviedo.

BLANCO CLEMENTE, I., & CASTRO GARCÍA, J. (1995) *Los Odonatos de la provincia de Cáceres. Aegyptius*, **13**:1-61.

JAHN, P. (1996) *Libellen im Einzugsgebiet des Guadiana in Südostportugal. Adv. in Odonat.*, **Suppl. 1**:65-76.

NEWLY DISCOVERED RECORD

On a recent visit to the Musée d'histoire naturelle de Neuchâtel (Switzerland) to examine the dragonfly (exuviae and larvae) collection of Paul-André Robert,

one of the authors (CB) discovered a specimen with a question-mark on its label ("Orthetr[u]m nitidinerve?"). The following additional information was hand written [English translation].

"Larve trouvée le 4 II 66 à l'étang des Mines près de Mertola & morte au Juras à cause du froid (6 °C dans l'atelier) le 20 III 66, puis conservée dans l'alcool" [Larva found on 04-02-1966 at the mines pond near Mertola and found dead in the Jura on 20-03-1966 due to the low temperatures (6 °C in the workroom), later preserved in alcohol]

The locality has been interpreted as one of the three reservoirs surrounding Mine de São Domingos, about 14 km East from Mertóla (Portugal, Alentejo), and 40 kilometers North of the coast. The geographical coordinates of the locality are 37°40'25"N 7°29'53"W, 150 m.a.s.l.

CB was able to identify the specimen as *Orthetrum trinacria* (Figure 2). Not only does this record represent the first record for Iberia but, in addition, this is the first record for Europe since the insect's original description.

DISCUSSION

Since 1991 the species has apparently increased its range and established itself predominantly in the south and west of the peninsula and along the Mediterranean coast as far as the northern border of the Comunidad Valenciana (Boudot & Kalkman, 2015). Presently, the species is not uncommon in Algarve (Loureiro, 2012), Andalusia (Prunier et al., 2013), Extremadura (Sánchez et al., 2009) and Valencia (Baixeras, 2006). It has only recently been recorded from Madrid, Toledo and Murcia (Cano-Villegas & Carpintero, 2015). The majority of recent records are post 2000; whether this is a result of changes in the behaviour of the insect or improved recording is a matter for some speculation. By way of example Jodicke (1996) produced a considerable number of new records for Iberia but not one for *O. trinacria*. However, the species was already

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LOUREIRO, N. de S. (2012) New data on the distribution of *Orthetrum trinacria* in the Algarve, southern Portugal (Odonata: Libellulidae). *Libellula*, **31**(1–2): 77–87.

PRUNIER, F., RIPOLL, J., & CHELMICK, D. (2013) Segundo Atlas de odonatos en Andalucía: incorporando 25 años de investigación. *Bol. ROLA*, **3**: 5–42.

SÁNCHEZ, Á., PÉREZ, J., JIMÉNEZ, E., & TOVAR, C. (2009) *Los Odonatos de Extremadura*. Mérida: Consejería de Industria, Energía y Medio Ambiente.

BAIXERAS, J. (2006) *Les libèl·lules de la Comunitat Valenciana*. Valencia: Conselleria de Territori i Habitatge, Generalitat Valenciana.

CANO-VILLEGAS, F. J., & CARPINTERO, S. (2015) Libelulas africanas en la Península Ibérica. *Quercus*, **344**: 34–44.

JÖDICKE, R. (1996) Studies on iberian dragonflies. *Adv. in Odonat.*, **Suppl. 1**: 190 pp.



Figure 2: The dry mounted specimen of the *Orthetrum trinacria* larva (Christophe Brochard det.), kept at the Musée d'histoire naturelle de Neuchâtel, and collected by P.-A. Robert at Mine de São Domingos (Portugal) in 1966.

well established in Extremadura in the 1980s (Benítez-Donoso, 1990; Blanco & de Castro 1995), possibly taking advantage of the numerous ponds and lagoons in that region.

The current Spanish distribution has recently been updated by Prunier et al. (2015). In summary the species appears to have consolidated its distribution since the first records from southern Portugal, southern Spain and Extremadura. The most remarkable change has been the colonization of the Mediterranean coast up to Valencia, especially the province of Alicante. Despite intensive surveys, the species has not yet been detected as far north as Catalonia (Martin et al., 2016).

In nearby territories, the species has successfully colonized Sardinia and has been recorded from various small Mediterranean islands (Riservato et al., 2014) as well as the Canaries (Boudot et al., 2009). *O. trinacria* is scarce and localised in mainland Italy with only one record (Riservato et al., 2014). The full account of the species expansion within the Mediterranean Basin is available in Boudot & Kalkman (2015).

The newly discovered record advances the first

PRUNIER, F., BROTONS PADILLA, M., CABANA, M., ... & ZALDIVAR LÓPEZ, R. (2015). Actualización del inventario provincial de Odonatos de España peninsular e Islas Baleares. *Bol. ROLA*, 6, 59–84.

MARTIN, R., MAYNOU, X., LOCKWOOD, M., & LUQUE, P. (2016). *Les libèl·lules de Catalunya*. Barcelona: Brau.

BOUDOT J.-P., KALKMAN V.J., AZPILICUETA AMORÍN M., ... & SCHNEIDER W., (2009). Atlas of the Odonata of the Mediterranean and North Africa. *Libellula Supplement*, 9: 1-256.

RISERVATO E., FESTI A., FABBRI R., ... & UTZERI C., 2014. *Odonata Atlante delle libellule italiane Preliminare*. Società Italiana per lo Studio e la Conservazione delle Libellule, Edizione Belvedere, Latina.

occurrence of the species in Iberia by 14 years (Hartung, 1985). In addition the record is the first for Europe since the species original description and pre-dates the Sardinian record of 1972 by 6 years (Bucciarelli, 1977). Moreover, it confirms the reproduction (intent -if not the success) of *O. trinacria* in Iberia and in Europe as early as the 1960s. Successful reproduction in Iberia was first documented from Extremadura, at Embalse de El Robledo (García & Benítez-Donoso, 1988) and in Andalusia, at Albufera de Adra (Butler, 1992).

Today the increased interest in dragonflies by naturalists and photographers has greatly increased our knowledge of all Iberian dragonflies and, in particular, recent colonists (e.g. the genus *Trithemis*). However this recent increase in observers should remind us that the dates of colonization by African species in past decades are only approximate. As far as *Orthetrum trinacria* is concerned, it is interesting to note that the Doñana region, where there is an apparent abundance of potential habitat, was regularly visited by odonatologists and even locally well studied (Díaz-Paniagua et al. 2014). However, the species was not detected there until 1984 (Hartung, 1985).

The newly discovered record should also remind odonatologists that there are probably many interesting European historical records undiscovered in museum collections which should be accessed. The discovery should also bring a note of caution when ascribing the range of expansion by African species to climate change, it may simply be that the species has been overlooked historically.

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Una cita Ibérica de *Orthetrum trinacria* datada del 1966

Palabras Claves: Iberia, Portugal, *Orthetrum trinacria* (Selys, 1841).

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