

First record of *Dolomedes plantarius* (Clerck, 1758) (Araneae: Pisauridae) from the Iberian Peninsula

Adrià Bellvert^{1,2}, Alba Casals^{1,3}, Alexandre Fonollosa¹,
Gerard Dalmau¹ & Carles Tobella¹.

¹ Associació El Blauet, 17190 Salt, Girona, Catalonia, Spain.

² theadribib@hotmail.com; ³ assocgirona@gmail.com

Abstract: First record of *Dolomedes plantarius*, from a permanent pond in Catalonia, in north-eastern Spain.

Key words: Araneae, Pisauridae, *Dolomedes plantarius*, Iberian Peninsula, Catalonia, Girona.

Primera cita de *Dolomedes plantarius* (Clerck, 1758) (Araneae: Pisauridae) en la Península Ibérica.

Resumen: Primera cita de *Dolomedes plantarius*, encontrada en una charca permanente de Cataluña, noreste de España.

Palabras clave: Araneae. Pisauridae. *Dolomedes plantarius*. península Ibérica. Cataluña. Girona. Salt

Introduction

In Europe there are only two species representing the genus *Dolomedes* Latreille, 1804: *Dolomedes fimbriatus* (Clerck, 1758) and *Dolomedes plantarius* (Clerck, 1758) (Helsdingen, 1993; Duffey, 1995).

The presence of *Dolomedes fimbriatus* in Spain was rediscovered in 1996 (Melic *et al.*, 1996) after 70 years without evidence of this species (Melero & Burrial, 2008), with the latest reliable record from Banyoles Lagoon (Reimoser, 1926), from where it later disappeared (Barrientos, 1978). Since then, there have been several reports from different Spanish localities, always within the north of the peninsula (Maguregi & Zabala, 2000; Melero & Torralba Burrial, 2008). However, *Dolomedes plantarius* has repeatedly been detected outside the Iberian Peninsula (Helsdingen, 1993; Duffey, 1995), reaching southern France (Duffey, 1995).

The only safe distinctive features between *D. fimbriatus* and *D. plantarius* are in the genitalia of the species, which are easy to identify, although Bonnet (1930) found that the two species could also be differentiated by the ratio between the width and length of the carapace. This diagnostic character is not in common use nowadays because of the lack of accuracy due to excessive overlap (Renner, 1987). The main distinction between the two species is in the tibial apophysis of the pedipalps, forked in *D. plantarius* but without bifurcation in *D. fimbriatus*. Besides this difference, the palps of the two species are clearly distinct, with no possible confusion between them.

D. plantarius is a large spider reaching the 22 millimetres in adult females (males slightly smaller). Their colour ranges from dark brown to light brown, and there are distinct longitudinal bands as a general pattern. However, the bands can also be absent, a fact that has never been observed in *D. fimbriatus*, which shows little variation in its pattern (Helsdingen, 1993).

The habitat of the two species is associated with damp places such as swamps or ponds. While *D. plantarius* spends all its cycle on the surface of these ponds, *D. fimbriatus* only needs this environment during the breeding season and for the rest of the year can live nearby or in places with less moisture (Helsdingen, 1993).

New Captures

On 12-II-2013 four individuals were detected at a permanent pond in Deveses de Salt, Catalonia, in the northeast of the Iberian Peninsula (UTM31N-ED50; alt., 70); they were initially determined as *D. fimbriatus*, due to the lack of *D. plantarius* records (Helsdingen, 1993). The spiders were found while retrieving samples of amphibian larvae for the Study of Amphibians of Deveses de Salt project and *Dolomedes* could be observed all through the months during

which the sampling of amphibians took place. On 18-VI-2013 the finding of an entirely brown individual with no clear bands aroused suspicions that this might be a *D. plantarius* (Figure 1). On 3-VII-2013, also during the sampling of amphibians, a dead adult male was found due to unknown causes and taken to the laboratory. The same day six adult females were observed under the study, four of them carrying the cocoon (Figure 2).

Discussion

The classification of the adult male by the palps, observed under magnification increases, confirmed that the species was *Dolomedes plantarius*, never cited earlier in the Iberian Peninsula. The palp (Figure 3) showed the typical bifurcated tibial apophysis of *D. plantarius* in comparison with a pedipalp draw (Nentwig *et al.* 1998). No more individuals have been identified in this population because of the requirement that the spider is dead in order to confirm the species to which it belongs. However, Helsdingen (1993) showed that the two species of European *Dolomedes* were not found together in the same pond, so it can be assumed that the entire population can be considered as *D. plantarius*.

The pond where the *D. plantarius* specimens were found a permanent one, attached to the Ter river. Although the area has a large number of ponds -including very heterogeneous ones in terms of size, vegetation, eutrophication and vegetation; some of which are habitable- *Dolomedes* species have apparently only been detected in one of them.

This pond presents a considerable amount of vegetation covering, not a lot of eutrophication and great diversity of macroinvertebrates species. The vegetation consists of willows (*Salix* sp. Linnaeus), black alders (*Alnus glutinosa*, (L.) Gaertn. 1790), sedges (*Carex* sp. Linnaeus, 1753.), elmleaf blackberries (*Rubus ulmifolius*, Schott, 1818), stinging nettles (*Urtica dioica*, Linnaeus) and common duckweeds (*Lemna minor*, Linnaeus, 1753) with filamentous algae (*Cladophora* sp., Kütz, 1843) as aquatic plants (Figure 4). As potential species that may interact with *D. plantarius* we found potential preys and potential predators. As predators we found Iberian water frogs (*Pelophylax perezi*, Seoane, 1885), Mediterranean tree frogs (*Hyla meridionalis* Boettger, 1874), common midwife toads (*Alytes obstetricans*, Laurenti, 1768), Mediterranean painted frog (*Discoglossus pictus*, Oth, 1837), common toad (*Bufo bufo*, Linnaeus, 1758), spotted salamander (*Salamandra salamandra*, Linnaeus, 1758,) and water birds as common kingfisher (*Alcedo atthis*, Linnaeus, 1758). As potential preys we found water scorpions (*Nepa cinerea*, Linnaeus, 1758), backswimmers (*Notonecta maculata*, Fabricius, 1794), larvae of Odonata like *Pyrrhosoma nym-*

phula (Sulzer, 1776), *Lestes viridis* (Vander Linden, 1825), *Gomphus simillimus* (Selys, 1840) or *Calopteryx haemorrhoidalis* (Vander Linden, 1825) and larvae of the amphibians mentioned above.

Dolomedes plantarius is listed as vulnerable on the IUCN Red List, although in the UK, for example, where there are three populations of this species, it is treated as an endangered species and is the subject of long-term monitoring (Smith, 2000).

We believe it would be of significant importance for this species to be added to the Atlas and Red Data Book of Threatened Invertebrates in Spain.

Acknowledgments

Special thanks to Montserrat Fabregat and Marc Montenegro, who organised the sampling of amphibians, to Iago Pérez, Daniel Castro and Paco Martínez for their help with the sampling, to Núria Roura and the GR-PECAT group of the Department of Environmental Sciences UDG (University of Girona) for the material and logistical support, to Enric Planes, of Barcelona University, for material support, to Dani Boix and Pere Pons, of Girona University, for their support and encouragement, and to Isabel Martínez and Pol Bantí for reviewing the translation.

References

- BARRIENTOS, J. A. 1978. *Dolomedes* et *Pisaura* dans la région catalane (Araneae, Pisauridae) *Revue Arachnologique*, **2**(1): 17-21.
- BONNET, P. 1930. La mue, l'autotomie et la régénération chez les araignées, avec une étude de *Dolomèdes* d'Europe. *Bulletin de la Société d'histoire naturelle de Toulouse*, **59**: 237-700.
- DUFFEY, E. 1995. The Distribution, status and habitats of *Dolomedes fimbriatus* (Clerck) and *D. plantarius* Clerck in Europe. *Proceedings of the 15th European Colloquium of Arachnology*. Růžička, V. (ed.) Institute of Entomology, České Budějovice: 54-65.
- HELSDINGEN, P.J. VAN. 1993. Ecology and distribution of *Dolomedes* in Europe (Araneida: Dolomedidae). *Boll. Acc. Gioenia Sci. Nat.*, **26** (345): 181-187.
- MAGUREGI, J. & A. ZABALA 2000. Presencia de *Dolomedes fimbriatus* (Clerck, 1758) (Araneae, Pisauridae) en las provincias de Alava y Bizkaia (España). *Revista Ibérica de Aracnología*, **1**: 37-38.
- MELERO, V. X. & A. TORRALBA BURRIAL 2008. Nueva población de *Dolomedes fimbriatus* (Clerck, 1758) (Araneae: Pisauridae) en la Península Ibérica. *Boletín Sociedad Entomológica Aragonesa*, **42**: 443-444.
- MELIC, A., M. MÉNDEZ & H. MORTERA 1996. Redescubrimiento de *Dolomedes fimbriatus* (Clerck, 1757) en la Península Ibérica (Araneae: Pisauridae). *Revista aragonesa de Entomología*, **6**: 147-150.
- NENTWIG, W., T. BLICK, D. GLOOR, A. HÄNGGI, & C. KROPF, (eds.). 1998. *Araneae Spiders of Europe, version 10.2013 .12-VII-2013*. <http://www.araneae.unibe.ch/>.
- REIMOSER, E. 1926. Arachniden aus dem nördlichen und östlichen Spanien. *Senckenbergiana*, **8**: 132-136.
- RENNER, F. 1987. *Revision der europäischen Dolomedes-Arten (Araneida: Pisauridae)*. Stuttgarter Beiträge zur Naturkunde (A) **406**: 1-15.
- SMITH, H. 2000. The status and conservation of the fen raft spider (*Dolomedes plantarius*) at Redgrave and Lopham Fen National Nature Reserve, England. *Biological Conservation*, **95**: 153-164.

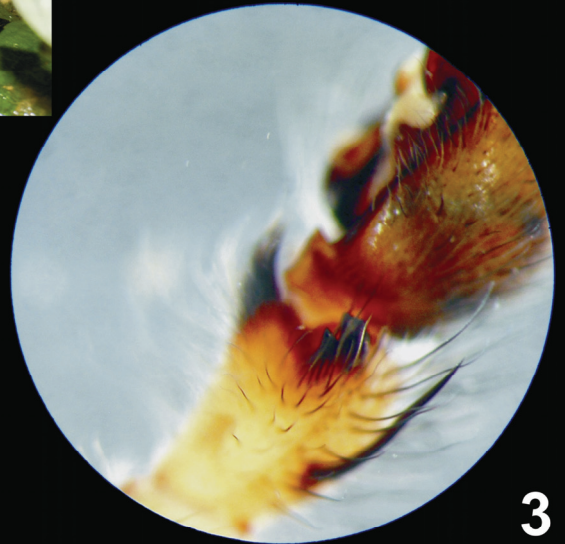


Fig. 1-3. *Dolomedes plantarius*. 1-2. Habitus. 3. Male palp. 4. Deveses de Salt, Girona, Catalonia, NE Iberian Peninsula.