



The West Mediterranean *Alona azorica* Frenzel & Alonso, 1988 (Cladocera: Anomopoda: Chydoridae) is composed of two species

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Abstract

A study of several populations of the West Palaearctic endemic *Alona azorica* Frenzel & Alonso, 1988 reveals the existence of a sibling-species. *Alona azorica* s. str. is confined to the Azores and the Atlantic part of West Iberia; *Alona anastasia* sp. nov. inhabits temporary ponds in Mediterranean Iberia and other West Mediterranean regions. It differs by size, by the morphology of the head shield and head pores, and by the shape of the male postabdomen. Both species belong to the *pulchella*-group of *Alona* s. lato. *Alona anastasia* sp. nov. population dynamics and seasonal variation in body size in the province of Valencia (Spain) are also studied.

Key words: Cladocera, *Alona azorica*, *Alona anastasia* sp. nov., Mediterranean region, systematics, morphology, biogeography

Introduction

Recent studies of Chydoridae have revealed groups of sibling-species presumed to be single taxa (Belyaeva & Taylor 2008; Van Damme & Dumont 2008; Smirnov *et al.* 2006; Kotov & Sheveleva 2008; Sinev 2009a; Sinev *et al.* 2009, Sinev & Elmoor-Loureiro 2010; Van Damme *et al.* 2011b, and others). Commonly, such sibling-species are separated geographically, but in some cases, closely related species coexist in close proximity, but are well-separated ecologically (Sinev 2009a; Sinev *et al.* 2009). *Alona azorica* Frenzel & Alonso, 1988 is a West Mediterranean species of limited distribution, so far recorded from the Azores (Frenzel & Alonso 1988), Iberian peninsula (Alonso 1985a, 1996), Menorca (Pretus 1990, 1991), Italy (Margaritora & Onorati 1995, as *Alona intermedia*), Algeria (Samraoui 2002), and Tunisia (Gauthier 1928, as *Alona rectangula*). This species is easily recognized by the unique morphology of its main head pores, with two anterior pores connected, and the posterior pore unconnected with the middle one and located at some distance, close to the posterior margin of the head shield. There is significant age variability of major head pore morphology within the species; the distance between medium and posterior head pores increases with the age of the individual.

According to Alonso (1985a), *Alona azorica* is a complex of two species, different both morphologically and ecologically. *Alona azorica* s. str. is confined to the temperate humid area of the Azores and West Iberia. Dry regions of West Mediterranean are inhabited by a species which differs from *Alona azorica* s. str. by greater size and different morphology of head shield and head pores. Alonso (1985a) used the name *Alona esteparica* for this species in his PhD thesis, but it was never formally published. Only authors familiar with Alonso's work (Ramdani 1988; Pretus 1991, Chergui *et al.* 1999) used the name *Alona esteparica*, so it should be treated as *nomen nudum* (Van Damme *et al.* 2010).

The aim of this paper is to properly describe this sibling-species of *Alona azorica*, its ecology and life history, and to discuss its taxonomic position within the Aloninae.