



The ‘true’ genus *Alona* Baird, 1843 (Crustacea: Cladocera: Anomopoda): position of the *A. quadrangularis*-group and description of a new species from the Democratic Republic of Congo

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Abstract

We describe *Alona kolwezii* n. sp. from the Afrotropics and provide a morphological comparison with the type species of the genus *A. quadrangularis*. Past classification problems of *Alona* indicate a potential complexity of evolution and radiation in these smaller Aloninae. We present a historical overview of systematic approaches to the genus *Alona* aiming towards an increased understanding of Aloninae phylogeny. A proposed delineation of “true” *Alona* Baird, 1843 is presented as the *quadrangularis*-group, comprising *A. quadrangularis*, *A. kolwezii* and *A. boliviana*. We discuss the phylogenetic position of the *quadrangularis*-group with a redescription of its limbs, interspecific variability and morphological adaptations to an epi-benthic mode of life.

Key words: *Alona quadrangularis* group, history, taxonomy, limb morphology, *Alona kolwezii* n.sp.

Introduction

Recent developments and improved resolution in morphological descriptions have lead to a better delineation of a significant number of anomopod taxa (Kotov 2007; Dumont & Silva-Briano 1999; Sinev *et al.* 2004; Van Damme *et al.* 2003, 2005; Sinev 2005). A major challenge in the Chydoridae, the majority of which inhabit littoral freshwater environments, is taxonomy of the genus *Alona* Baird, 1843. The taxon *Alona* is the result of over a century of superficial and faulty species descriptions. Only some of the most conspicuous of the current alonine genera (e.g., *Euryalona*, *Leydigiopsis*) have never been part of *Alona* at least once in their taxonomic history. Most Aloninae seem superficially similar, but a closer look to characters, such as the structure of the thoracic limbs, reveals deep subdivisions as well as shared affinities between taxa (e.g., Sinev *et al.* 2004). There is a common consensus that *Alona* sensu lato is an artificial grouping, but attempts to revise it have hitherto been unsuccessful, and will remain so until all major groups within this taxon have been redefined. Because any step towards such a revision requires an understanding of what *Alona* sensu stricto is, a pivotal step in the revision of *Alona* is to define the “true” *Alona*, i.e. the type species and taxa directly related to it, as to permit future comparison with other species groups. *Alona* situates itself around the type species of the genus and subfamily Aloninae, namely *Alona quadrangularis* (O.F. Müller, 1776). Based on morphology we discuss the *A. quadrangularis*-group, consisting of a redescribed *A. quadrangularis*, the closely related *A. boliviana* Sinev & Coronel 2006 and a new species, *Alona kolwezii* from the Afrotropics. The existence of an *A. quadrangularis* species complex was suggested by Sinev & Coronel (2006); drawings of *A. quadrangularis* limbs were published earlier in Smirnov (1966; 1971) and Sinev & Coronel (2006) but no full redescription up to current standards exists. We discuss the phylogenetic position of the *A. quadrangularis*-group in