*Zootaxa*1960: 1–44 (2008)
www.mapress.com/zootaxa/

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Further division of *Alona* Baird, 1843: separation and position of *Coronatella* Dybowski & Grochowski and *Ovalona* gen.n. (Crustacea: Cladocera)

KAY VAN DAMME[1] & HENRI J. DUMONT

Department of Biology, Ghent University, K.L. Ledeganckstraat 35, B–9000 Belgium.
[1]Corresponding author. E-mail: kay.vandamme@ugent.be

Table of contents

Accepted byK. Meland: 23 Oct. 2008; published: 10 Dec. 2008

Abstract

We investigate morphology and taxonomic rank of several *Alona* species related to *A. rectangula* Sars, 1861. Despite high morphological intraspecific variability, a number of synapomorphies shows that taxa related to *A. rectangula* are sufficiently different in external and internal morphology from "true" *Alona* Baird, 1843. These are removed from *Alona* into separate genera. The rare West-African *A. holdeni* Green 1962 is redescribed and we describe a new species from North Africa, Arabia and islands in the Western Indian Ocean. We reinstate the name *Coronatella* Dybowski & Grochowski to receive *A. rectangula*, *A. holdeni*, and a new species, *C. anemae*. Sharing several synapomorphies, the subantarctic species *A. weinecki* Studer appears related to *A. meridionalis* Sinev, 2006. We assign them to *Ovalona* **gen.n.**, similar in morphology to *Coronatella*, but with less limb reductions. At a higher level, we discuss morphology and distribution of both genera and of the similar *A. elegans*-group. To situate *Coronatella* within the subfamily, we introduce a "*Coronatella*-branch", a group of medium-sized Aloninae with limb reductions, comprising *Coronatella, Leberis*, *Celsinotum, A. dentifera, A. monacantha* and possibly *Karualona* and *A. verrucosa*-group, in comparison with a "*Hexalona*-branch" and *Alona* s.str. Adaptations to life in temporary pools and salinity tolerance may have played an important role in separation and radiation of a *Coronatella*-branch.

Key words: *Alona rectangula* group, *Coronatella holdeni, Coronatella anemae* **n. sp.**, *Alona weinecki*, *Ovalona* gen.n., Chydoridae, taxonomy, limb morphology, distribution

Introduction

Alona Baird, 1843 is considered an artificial, polyphyletic taxon (Van Damme & Dumont *in press*), and recent taxonomic work aims towards a better classification by assignment of its species and an increased resolution in morphological descriptions (e.g., Dumont & Silva-Briano 2000; Sinev 2004b; Sinev *et al*. 2004; Sinev *et al*. 2005). Redescription of poorly known and marginal species of *Alona* Baird, 1843, allows a better understanding of the composition of the taxon and evolution in the Aloninae. *Alona* Baird, 1843 contains several species groups of which the centre is *A. quadrangularis* (Sinev 2006; Van Damme & Dumont *in press*), which compared to other species groups seems relatively conserved in morphology. Species related to *Alona pulchella, A. rectangula* and *A. verrucosa* are variable and create taxonomical tangles. Delineation of each of these groups, an estimate of their variability, distribution, ecology, and higher classification, are missing. As with earlier allocations of the *Alona diaphana/davidi*-group to *Leberis*, the *Alona karua*-group to *Karualona*, or *Alona eximia*-group to *Nicsmirnovius* (Sinev *et al*. 2005; Dumont & Silva-Briano 2000; Van Damme *et al*. 2003), the *A. rectangula*-complex is a group in need of revision. A tricky exercise, because several small *rectangula*-like *Alona* species are poorly described. The *A. rectangula*-complex has a general external morphology of smaller Aloninae and the lumping of such taxa with similar body shape in *Alona* has added to our current problems in classification. External morphology can be very similar, whereas limb morphology, a powerful phylogenetic tool for these micro-crustaceans, may differ strongly. *A. rectangula* is a particularly complex case. Frey (1988) revised and discussed complexity of this taxon and Sinev (2001b) noted that *A. rectangula* sensu lato is only surpassed in number of records and synonyms within the Chydoridae by *Chydorus sphaericus*. In this paper, we (re)describe several species assumed closely related to *A. rectangula*: *A. weinecki* Studer, *A. holdeni* Green, and a new species from Northern Africa/Arabia (earlier described as *A. bukobensis*, see Ekman, 1904; as *Lynceus*), in comparison to European *A. rectangula* Sars. Morphology of limbs of these taxa is documented for the first time. We examined material of *Alona weinecki* from Marion and Heard Islands, eastern subantarctic. Sars (1909), Paggi (1987) and Frey (1988) provided previous taxonomical comments on *Alona weinecki*, but limb morphology was not previously compared in detail. A description of limbs of *Alona holdeni*, a rare and poorly known species from West Africa (Green 1962), is made from topotypical material. We discuss their morphology in comparison with *Alona rectangula* and note on intraspecific (of the new species) and interspecific variation. We give comments on distribution patterns