



<http://dx.doi.org/10.11646/zootaxa.3693.3.3>

<http://zoobank.org/urn:lsid:zoobank.org:pub:8109D59B-1D87-4F66-B096-14DDD013DB5C>

## Cladocerans of *Alona affinis* group (Cladocera: Anomopoda: Chydoridae) from North America

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### Abstract

Cladocera of *Alona affinis* group from North America preserved in the collection of Professor D. G. Frey were investigated. A new subspecies of *Alona ossiani* Sinev, 1998 is described. *Alona ossiani herricki* **ssp. nov.** differs from the nominate subspecies in presence of 2–3 marginal denticles on postanal angle of male postabdomen, no differences between subspecies were revealed in the female morphology. An obscure taxon *Alona lepida* Birge, 1892 was shown to be a valid species of *affinis*-group and is redescribed. *A. lepida* shares characteristic features of the group, but differs from all other species in the body shape, by postabdominal claw with basal spine almost parallel to the claw itself, and by IDL seta 1 being not claw-like. Morphology, relationships and distribution of studied taxa are discussed.

**Key words:** cladocera, Chydoridae, morphology, systematics, new species, North America

### Introduction

Cladocerans of the subfamily Aloninae (Cladocera: Anomopoda: Chydoridae) have been intensively investigated during the last decades; as a result the number of species and even of genera have been increasing rapidly. One of most intensively investigated group is the lump genus *Alona*, presently consisting of several not closely related species-groups (see Van Damme *et al.* 2010). Some of these groups were already recognized as separate genera (Dumont & Silva-Briano 2000; Sinev 2004; Van Damme & Dumont 2008a; Van Damme *et al.* 2009, 2011; Van Damme & Sinev 2011). Recent studies of local faunas of main groups of *Alona s. lato* frequently reveals new species (Sinev 2008, 2009, 2012; Sinev & Elmoor-Loureiro 2010; Kotov *et al.* 2010; Van Damme & Dumont 2008ab; Van Damme & Eggermont 2011; Van Damme *et al.* 2011; Sinev & Silva-Briano 2012) or, sometimes, lead to resurrection of old taxa presumed to be synonyms by the researchers of the 20th century (Sinev 2001).

One of distinctive species-group within *Alona s. lato* is *Alona affinis* group. Members of the group (see Sinev 2009) are characterized by the combination of the following features: (1) large size: length of adult 0.8–1.15 mm; (2) head shield with distal part forming elongated angle; (3) two connected head pores; (4) strong, hook-like seta 1 on inner distal lobe of limb I; (5) seven setae on exopodite of limb III; (6) bilobed exopodite of limb V; (7) filter plate of limb V consisting of three setae; (8) presence of well-developed thorachic limb VI.

According to Sinev (2009), *Alona affinis* (Leydig 1860) *s. str.* is distributed in the Palaearctic and in South Africa; both South and North America is inhabited by *Alona ossiani* Sinev 1998, and Australia by *Alona kendallensis* Henry 1919. The group also contains two local endemics of similar morphology: *Alona martensi* Sinev 2009 restricted to Drakensberg mountains of South Africa, and *A. elliptica* Sinev 1997 known from Mount Kosiushko in Australia; both species never were recorded from lowlands. Van Damme & Eggermont (2011) reported that populations of *Alona cf. affinis* from Rwenzori Mountains in Central Africa also differ from *A. affinis s. str.* and can belong to a separate species, different from *A. martensi* as well. One more taxon, possibly belonging to *Alona affinis*-group, *Alona lepida* Birge 1892 was described from Wisconsin, USA (Birge 1892). This taxon was never reported after the initial description. Van Damme *et al.* (2010) believed that *Alona lepida* is a member of *Alona quadrangularis*-group, but distinction between *affinis* and *quadrangularis* groups cannot be based on the body and postabdomen morphology only, without study of head pores and appendages.