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The ancient Balkan lakes harbor a new endemic species of *Diaphanosoma* Fischer, 1850 (Crustacea: Branchiopoda: Cladocera)

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Abstract

Diaphanosoma macedonicum sp. nov. is described from material collected from the ancient Lakes Dojran and Prespa, located in the central part of the Balkan Peninsula. It can be regarded as a member of the “*D. mongolianum*” species group. It is characterized by specific, but not readily visible features, such as the absence of a thorn near the posterior valve margins, as well as setules between setae of the ventral valve inflection, and the presence of more chitinized integument. The discovery of this new species previously identified as “*Diaphanosoma brachyurum* (Liévin)” highlights the necessity of more detailed investigations of the zooplankton of Balkan lakes potentially populated by greater numbers of endemic cladoceran species. A short overview of the ancient lakes in the Central Balkans is provided.

Key words: *Diaphanosoma macedonicum* sp. nov., Crustacea, Cladocera, endemic species, ancient Balkan lakes, Lake Dojran, Lake Prespa

Introduction

Investigations of the freshwater plankton in the Balkan lakes started at the end of the XIXth and the beginning of the XXth century. In particular, Richard (1892) was the first investigator who listed six zooplankton species from Macedonian Lake Dojran, including *Daphnella brachyura* (Livéin, 1848) var. *minor* Sars (= *Diaphanosoma brachyurum* [Liévin, 1848]). Later, Gjorgjevic (Georgevitch) (1906, 1907) recorded *Diaphanosoma brandtianum* Fischer, 1850 (= *D. brachyurum*, see Lilljeborg, 1901 and Korovchinsky 1992, 2004) from Lake Dojran and other lakes, and noted some morphological differences between his specimens and other known forms of the genus *Diaphanosoma*, proposing assignment of the former to a separate unnamed variety. Most of the subsequent authors who studied Lake Dojran and Lake Prespa recorded only *D. brachyurum* (see Parenzan 1931; Popovska-Stankovič 1958, 1990; Guseska *et al.* 2012). More recently, in the 1980s, other species of the genus were found in some other Balkan lakes: *D. lacustris* Kořinek, 1987 (syn. *D. birgei lacustris* Kořinek, 1987); *D. mongolianum* Ueno, 1938, and *D. orghidani* Negrea, 1982 (Kořinek 1981, 1987; Korovchinsky 1987; Zarfdjian *et al.* 1990; Michaloudi *et al.* 1997).

In the majority of the aforementioned publications, taxa of the genus under consideration from the Balkan region were either not described or were characterized with only a limited set of morphological detail, with the exception of the description of diaphanosomas from one Bulgarian reservoir by Korovchinsky (1987). Such a superficial study of the material might have led to incorrect identifications, which makes necessary a more detailed reinvestigation of the species composition of *Diaphanosoma* from Balkan lakes.

An examination of samples collected in the Macedonian parts of Lake Prespa and Lake Dojran has revealed representatives of the new species of *Diaphanosoma*, which is described in the present paper.

Brief description of the Balkan Lakes, Lake Prespa and Lake Dojran. In the central part of the Balkan Peninsula, there is a belt of ancient lakes, consisting of two different principal lake groups (Cvijic 1911). The western group belongs to the South Adriatic-Ionian Sea Basin and consists of three waterbodies, the largest and

region populated by some, sometimes co-occurring congeners (see Michaloudi *et al.* 1997; this paper), should be studied further.

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