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Remarks on the taxonomic status of *Jaera danubica* Brtek, 2003 (Crustacea: Isopoda: Janiridae)

PÉTER BORZA[1,2]

[1]*Danube Research Institute, Hungarian Academy of Sciences, 14 Jávorka Sándor utca, Göd, H-2131, Hungary*
[2]*Department of Systematic Zoology and Ecology, Faculty of Science, Eötvös Loránd University, 1/C Pázmány Péter sétány, Budapest, H-1117, Hungary. E-mail: borzap@gmail.com*

The representative of the genus *Jaera* Leach inhabiting continental waters throughout Europe has a rather complex taxonomic history. After discovering it in the River Tisza, Hungary, Dudich (1930) identified it as *Jaera nordmanni* (Rathke). This emerged to be a mistake, as the species was found to be identical with the subsequently described *Jaera sarsi* Valkanov (Kesselyák 1938). On the contrary, Veuille (1979) argued that the freshwater form is different from the brackish water species *J. sarsi*, and described it as a new species, *J. istri* Veuille, 1979. The new terminology has become widely used; however, recently the concept received criticism, implying that the characteristics distinguishing *J. istri* from *J. sarsi* fall within the confines of intraspecific variability (Tobias *et al.* 2005). Here I tentatively accept the latter point of view, and will refer to the species as *J. sarsi* in the following, but I also wish to point out that this matter could be settled using molecular methods.

In spite of the debates revolving around its identity, all of the above mentioned authors agreed that the freshwater form belonged to a single species. However, recently Brtek (2003) described a new *Jaera* species in the Slovakian section of the River Danube, *J. danubica* Brtek, 2003. The main attribute distinguishing it from *J. sarsi* is the shape of its body; in contrast to the oval contour of *J. sarsi*, the body of *J. danubica* is asymmetric, the posterior half being broader than the anterior one. The new species did not differ notably from *J. sarsi* in the most important identification feature of the genus, the male praeoperculum.

The majority of isopod crustaceans have a special, biphasic molting mechanism, during which the cuticle of posterior half of the body is shed first, followed by the anterior part after a while (e.g. George 1972). Since this mechanism can be assumed to have implications on the body contour of the animals, I deemed a reassessment of the validity of *J. danubica* necessary.

To address the question, I studied the material of the Danube Research Institute of the Hungarian Academy of Sciences comprising of 387 isopod samples collected between 1994 and 2008 from 198 stations of the Hungarian Danube section and connected waters (Nosek 2007). Altogether 22 of the 2029 *Jaera* specimens examined could be identified as *J. danubica*, of which 7 (3 ♂ and 4 ♀) have been deposited in the Collection of Crustacea and Other Aquatic Invertebrates of the Hungarian Natural History Museum. Unfortunately, I did not have the opportunity to study the type material, but in my opinion the detailed figures and descriptions of Brtek (2003) along with the rich material I examined, and the evidence I present here allow the unequivocal judgment of the question.

One of the specimens in the collection was fortunately preserved during the molting of the anterior half of the body (Fig. 1A). Its posterior body half was broader, denoting that molting might be in connection with the body shape of the animals. To obtain evidence, living *Jaera* specimens were collected from the River Danube at Göd (river km 1668) on 19 October 2010. Among about 200–300 animals a single individual showing the characteristic body contour was found (Fig. 1B). It was placed into a Petri dish with Danube water and a piece of a decaying leaf as food source. 21 hours later, when checked again, the difference in width between the anterior and posterior body regions vanished (Fig. 1C). The change in shape was effected by the lateral (and the concurrent longitudinal) growth of the anterior half of the body, providing evidence for the assumption that the peculiar body contour of *J. danubica* is merely a product of the time lag between the molting of the different body regions.

In summary, *J. danubica* can be regarded as an interim morphological stage of *J. sarsi*, and being so, should be treated as a junior synonym of it.

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