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A new species of *Polyarthra* Ehrenberg, 1834 belonging to the *vulgaris*-group (Rotifera: Monogononta: Synchaetidae) from Argentina, with a key to the identification of species in the Neotropical Region

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Abstract

A new species of planktonic genus *Polyarthra* Ehrenberg, 1834 was found in water bodies of north-eastern Argentina along the Paraná River and Uruguay River systems. This species, which belongs to the group that has a pair of ventral additional paddles, shares several features with other species of the genus particularly with *P. dolychoptera* Idelson, 1925, *P. luminosa* Kutikova, 1962, and *P. indica* Segers and Babu, 1999. *Polyarthra platensis* **sp. nov.** can be distinguished from other species of the genus by at least two autapomorphic traits, 1) the structure of dorsal integument and 2) the unusual heterogeneity in the composition of paddle bundles. Moreover, this species exhibits a specific combination of diagnostic features including the structure of the trophi having bare manubria, unci with a single tooth and absence of teeth before and after the strong major tooth on the rami. The discovery of this new species indicates that a revision of the genus in the Neotropical Region is pressingly needed. This study provides an updated species identification key for this genus in the Neotropical Region.

Key words: morphology, systematics, La Plata basin, South America

Introduction

Over the last century, the taxonomy of the planktonic genus *Polyarthra* has been addressed with different approaches, including extreme "splitter" and "lumper" positions (Carlin 1943; Sudzuki 1964). The comprehensive work by Koste (1978) divides the genus into three "Formenkreise" using six features as diagnostic characters among which those related to trophi morphology, at that time practically unknown for most of the species, were not included.

In the following decades knowledge about the morphology and taxonomy of *Polyarthra* increased significantly, with detailed descriptions of new species and other well-known but incompletely described ones, all of which paid close attention to the details of the trophi (Koste & Poltz 1984; De Smet *et al*. 1988; Koste & Tobias 1989; Shiel & Koste 1993; Segers & Babu 1999; Hollowday 2002; Schabetsberger *et al*. 2004). Furthermore, Segers and Babu (1999) specifically discussed the importance of considering the trophi morphology for the comprehensive understanding of the taxonomy of the genus *Polyarthra*.

In fact, Hollowday (2002), in his revision of *Polyarthra*¸ did take trophi morphology into account. Within his revision, a list of 21 nominal species was included, of which ten were considered as valid species. The remaining species are invalid, or of doubtful validity, for several reasons, in part for being insufficiently described.

Despite these improvements in the knowledge about the genus *Polyarthra* across the world, the *Polyarthra* species of the Neotropical Region remain relatively poorly known. For example, while Koste and José de Paggi (1982) listed four species, and Segers (2007) seven species, not more than two descriptions and/or illustrations of these specimens have been published. Concerning the well-documented records, Koste (1988) and Segers and

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