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Psammon rotifers in Central Vietnam, with the descriptions of three new species (Rotifera: Monogononta)

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Abstract

In order to address the dearth of information on Rotifera in Vietnam, and especially on rotifers inhabiting freshwater psammon in Southeast Asia, we collected and examined twenty-five hygropsammon samples from Bau Thiem Lake, Thua Thien Hue Province, central Vietnam. A total of eighty-nine species-level rotifer taxa were identified, belonging to 21 genera and 13 families. Of these, 48 taxa (54%) are new to Vietnam, including three species, *Lecane climacois* Harring & Myers, 1926, *Notommata cerberus* (Gosse, 1886) and *Trichocerca intermedia* (Stenroos, 1898) that are new to the Oriental region, and three species, *Lecane phapi* n. sp., *Lecane dorysimilis* n. sp. and *Trichocerca bauthiemensis* n. sp. that are new to science. These, and some additional rare species are commented upon and illustrated. We estimated that the α -diversity of psammon rotifers in Bau Thiem Lake may be as high as 99 (SD=8.4; Chao2) or 115 (Jackknife2) taxa. These results indicate a high potential of rotifer diversity in the hygropsammon at Bau Thiem Lake, central Vietnam.

Key words: biodiversity, freshwater, micrometazoa, Southeast Asia

Introduction

Psammon rotifers belong to the community of organisms inhabiting the interstices between grains of sand in aquatic ecosystems, a habitat considered transitional between aquatic and soil habitats. Wiszniewski (1934a, 1934b, 1937), who conducted extensive studies on such habitats, subdivided the psammon area into three categories: 1) the hydropsammon of submerged sand along the edge of a water body, 2) the hygropsammon or the zone above and adjacent to the water level and completely saturated by capillary action and wave action, and 3) the eupsammon or the outer boundary of the latter, partially saturated and submerged only during periods of high water. Accordingly, he characterised the organisms inhabiting the psammon as psammobiontic, those organisms that live exclusively, except fortuitously, in the psammon; psammophile, those that show a clear preference for the psammon, but which may also be found in the littoral; and psammoxene, those that avoid the psammon (Wiszniewski, 1937). Notwithstanding that there is a substantial body of recent literature on psammon and interstitial habitats in lotic (Schmid-Araya, 1995, 1998; Turner, 1996) as well as in lentic freshwater environments (Wiszniewski, 1934a, 1934b; Myers, 1936; Pennak, 1939; Bielańska-Grajner, 2001, 2005; Radwan & Bielańska-Grajner, 2001; Ejsmont-Karabin, 2004), there are particularly few studies on these habitats in (sub)tropical regions. Recently, Segers and Chittapun (2001) reported on a limited collection of interstitial rotifers from a peat swamp on Phuket Island, Thailand, and described three new rotifer species, viz. *Colurella psammophila*, *Encentrum porsnilpi* and *Lepadella desmeti*, which indicates that the biodiversity of the micrometazoans inhabiting these peculiar habitats is in general poorly documented.

A recent paper on the Vietnamese rotifer fauna (Trinh Dang *et al.* 2013) concluded that a total of 174 taxa is known from the country, including 52 that were added by that study. This is much lower than the record for Thailand, from which nearly 400 such taxa are reported (Sa-ardrit *et al.*, 2013). To date, however, no interstitial