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Baltic Sea Gastrotricha—one new species and one new record of Chaetonotida from Poland

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Abstract

Gastrotricha is a cosmopolitan phylum of aquatic and semi-aquatic invertebrates that comprise about 820 described species, which are divided into two orders: Chaetonotida Remane, 1925 [Rao & Clausen, 1970] and Macrodasyida Remane, 1925 [Rao & Clausen, 1970]. They inhabit natural as well as artificial habitats in diverse marine, freshwater, and semi-aquatic ecosystems (*e.g.* peatbogs, alder woods, riparian forests). Until now, 29 species of gastrotrichs from the Polish Baltic Sea region (including three freshwater species which were found in estuaries) were known. Sixteen species belong to Chaetonotida and thirteen to Macrodasyida. During this study we found two species, *Heterolepidoderma sinus* **spec. nov.**, and *Aspidiophorus lamellophorus* Balsamo, Hummon, Todaro *et* Tongiorgi, 1997 which is new to the Baltic Sea fauna. *H. sinus* **spec. nov.** has distinct cuticular reinforcements in the anterior dilatation of the pharynx. Moreover, it is characterized by two kinds of lamellae: one type is represented by small triangular lamellae which aris from lateral scales, the second type is large and clearly visible and arises from ventral scales. None of the *Heterolepidoderma* species known so far has two types of lamellae. *A. lamellophorus* was previously known only from the Mediterranean Sea. The finding of two new gastrotrich species in the Baltic Sea shows that the knowledge of these small invertebrates in the area is still far from complete.

Key words: *Aspidiophorus lamellophorus*, gastrotrichs, *Heterolepidoderma sinus* **spec. nov.**, Baltic Sea, new species, new record, Puck Bay, taxonomy

Introduction

Gastrotricha constitute a phylum of microscopic aquatic invertebrates measuring between 50 to 3500 μm (Kisielewski 1997; Balsamo *et al*. 2014; Kieneke *et* Schmidt-Rhaesa 2015). Gastrotrichs inhabit a variety of aquatic and semi-aquatic habitats such as estuaries, continental shelves, deep sea, mud sedges, alder woods, peat bogs and rainforests (Kisielewski 1991, 1997). They are an extremely common and widespread group that can form abundant populations and plays an important role in meiofaunal communities, *e.g.* being an intermediary between the microbiological loops and larger, unicellular or invertebrate predators (Todaro *et* Hummon 2008). Thanks to their ability to inhabit a great variety of water habitats (including periodic rivers and artificial lakes), a rapid developmental cycle, and the production of opsiblastic (resting, dormant) eggs in Chaetonotida, Gastrotricha can be found in any aquatic and semi-aquatic environment in large number (Balsamo *et al.* 2014; Kieneke *et* Schmidt-Rhaesa 2015). Freshwater Gastrotricha occur both in standing waters and, albeit less frequently, in flowing waters. In inland lentic waters Gastrotricha can be found predominantly in the bottom sediments especially if rich in organic matter, epiphytically and, less commonly, interstitially (Balsamo *et* Kisielewski 1986; Kisielewski 1987a, 1997; Balsamo *et* Todaro 2002). Species of several genera are adapted to a planktonic or semi-planktonic life (Schwank 1990; Kisielewski 1991, 1997; Kieneke *et* Ostmann 2012; Balsamo *et al.* 2014; Kånneby *et* Todaro 2015). In turn, Gastrotricha in lotic waters (rivers, streams and springs) prefer interstitial habitats (Balsamo *et al.* 2014). In marine environments, the majority of gastrotrich species are interstitial

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