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New species of the genus *Parotoplana* Meixner, 1938 (Proseriata, Otoplanidae) from southern Apulia (Italy)

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Abstract

A survey of the genus *Parotoplana* Meixner, 1938 in southern Apulia (Italy) resulted in the finding of six species, four of which are new, and are formally described here. *P. pythagorae* **sp. n.** is distinguished by the presence of sharply triangular apices of companion spines of the stylet. *P. spathifera* **sp. n.** has the lowest number of spines (eight) known in the genus, arranged in four pairs of different morphology. *P. terpsichore* **sp. n.** differs from *P. multispinosa* Ax, 1956 by the number and shape of spines. *P. jondelii* **sp. n.** has unique broad spines and is equipped with bursal spines. The karyotypes of *P. pythagorae* **sp. n.** (n=6), *P. spathifera* **sp. n.** (n=9) and *P. jondelii* **sp. n.** (n=6) are described. The remaining two species belong to the species-group of *P. renatae* Ax, 1956 / *P. macrostyla* Lanfranchi, 1978, and their identification on the basis of the limited sample available is problematical. The finding of numerous new species in an area as comparatively well studied as the central Mediterranean bears witness to our poor knowledge of the biodiversity of marine interstitial flatworms.

Key words: taxonomy, marine biodiversity, meiofauna, Mediterranean, *Parotoplana*, new species

Introduction

The Proseriata is a diverse and species-rich taxon of neoophoran Platyhelminthes. They are particularly common in marine, coarse sediments; one family in particular, the Otoplanidae, is the dominant taxon in the surf zone of high-energy beaches (the '*Otoplana*- zone' of Remane, 1933) (Reise, 1988; Curini-Galletti, 2001). However, the overall complexity of the study of interstitial Platyhelminthes (which includes observations of living organisms as well as of sections to appreciate the fine details of their complex reproductive system) has so far jeopardized a detailed knowledge of their ecological role and contribution to marine biodiversity. Furthermore, as is the case for many interstitial flatworms, most species are only known from their type locality. Present data do not allow to decide whether this may indeed point to the existence of narrow distributional ranges, or rather only reflect an inadequacy of samplings.

Recently, under the framework of the project 'BIOIMPA' ('Biodiversity of Inconspicuous Organisms in Italian Marine Protected Areas'), a series of sampling campaigns has been undertaken, aimed to gather data on species composition and distribution of selected meiofauna taxa along the coasts of Italy. Not unexpectedly, samples yielded a vast number of new species of interstitial Platyhelminthes, which are currently in the course of description. Members of the genus *Parotoplana* Meixner, 1938 (Proseriata: Otoplanidae) were particularly well represented in the samples. The genus is characterized by the presence of a collar-shaped pharynx in the middle of the body, a serial arrangement of gonads (two rows of testes in front of the prepharyngeal ovaries; two rows of vitellaria behind the ovaries), and a female apparatus with a bursa opening independently into the common genital atrium, between the openings of the male system and the common oviduct, which arises from the post-pharyngeal fusion of the germovitelloducts (Ax, 1956).

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