



## A review of the marine and brackish-water species of *Testudinella* (Rotifera: Monogononta, Testudinellidae), with the description of two new species

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### Abstract

Two new morphospecies of the rotifer genus *Testudinella* (Rotifera, Monogononta, Testudinellidae), *T. bicorniculata* **sp. nov.** and *T. elongata* **sp. nov.**, are described from marine psammon collected in the Mediterranean. *T. bicorniculata* **sp. nov.** is characterized by two antero-lateral lorica projections; dorsal and ventral anterior margins undulate with shallow median sinus; foot opening sub-terminal, inverted U-shaped; distal foot pseudosegment short; fulcrum with proximal opening. *T. elongata* **sp. nov.** is characterized by its strongly elongate and striate lorica; dorsal anterior margin tri-lobed; ventral margin projecting, almost straight; foot opening sub-terminal, inverted U-shaped; distal foot pseudosegment long; fulcrum with proximal opening. The new species are related to *T. obscura* Althaus, 1957, which is redescribed. Brief descriptions of the external morphology and trophi, as well as biogeographical information are provided for the other *Testudinella* species reported from marine and brackish environments. *T. pseudoclypeata* Bērziņš, 1943 is synonymized with *T. elliptica* (Ehrenberg, 1834).

**Key words:** Rotifera, Flosculariaceae, *Testudinella*, new species, marine, Mediterranean

### Introduction

Rotifers inhabiting marine environments have been little studied taxonomically and ecologically, and are usually recognized as an inconspicuous taxon, although it is becoming obvious that rotifer diversity is much more relevant than generally accepted (e.g. Ricci & Fontaneto 2003; Fontaneto *et al.* 2006, 2008). Why such a cosmopolitan constituent of marine fauna received little attention is connected with difficulties in collecting sufficient material, the time-consuming and laborious techniques to extract them from sediment and vegetation, and to prepare them for study. Moreover, inaccurate and incomplete descriptions resulted in problems with marine rotifer taxonomy, and redescriptions of previously described species based on a broader spectrum of specific characters are needed. In this contribution two new species of *Testudinella* Bory de St. Vincent, 1826 (Testudinellidae: Monogononta, Flosculariaceae) are described from the Mediterranean, and additional information is presented on the other members of the genus reported from marine and brackish waters world-wide. Testudinellidae is a small family comprising three genera, *Anchitestudinella*, *Testudinella* and *Pompholyx*, of which *Testudinella*, with about 40 morphospecies considered valid in the recent annotated checklist of rotifers by Segers (2007), is the most species-rich. *Testudinella* is a benthic-periphytic genus of microphagous rotifers primarily inhabiting the littoral of freshwater lakes and ponds. To date seven species have been reported from marine, brackish or inland saline habitats, only two of which, *T. clypeata* (Müller, 1786) and *T. obscura* Althaus, 1957, are considered strictly marine, the others being euryhaline or occasionally introduced freshwater species (Fontaneto *et al.* 2006, 2008).