



## Tardigrades from Portugal: four new records and description of two new species

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### Abstract

Six species of Eutardigrada are recorded from Portugal; four of them, *Macrobotus crenulatus* Richters, 1904, *Hypsibius seychellensis* Pilato, Binda & Lisi, 2006, *Diphascon (Diphascon) pingue* (Marcus, 1936) and *D. (Diphascon) patanei* Binda & Pilato, 1971 are recorded for the first time in Portugal. Two species, *Minibiotus orthofasciatus* **sp. nov.** and *Bertolanius* (new name of *Amphibolus*) *portucalensis* **sp. nov.** are new to science. *Minibiotus orthofasciatus* **sp. nov.** is one of the species of the genus with three macroplacoids, microplacoid and cuticular pores forming transverse bands. The new species differs from all existing species by one or more of the following characters: distribution of the pores, shape of the pores, absence of dots on the legs, level of insertion of the stylet supports on the buccal tube. To the new species is attributed an unembryonated egg similar to those of *Minibiotus intermedius* (Plate, 1888), *M. poricinctus* Claxton, 1998, *M. floriparus* Claxton, 1998, and *M. weglarskae* Michalczyk, Kaczmarek & Claxton, 2005 but different from them in some details. *Bertolanius portucalensis* **sp. nov.** is very similar to the other species of the genus, but it differs from them in having very small cuticular tubercles. From some of them it differs by characters of the bucco-pharyngeal apparatus and/or of the eggs. This is the first record of the genus and of the Eohypsibiidae family in the Iberian Peninsula.

**Key words:** Tardigrada, Eutardigrada, *Minibiotus orthofasciatus* **sp. nov.**, *Bertolanius portucalensis* **sp. nov.**, Portugal

### Introduction

Since the first note about Portuguese tardigrades in 1937, describing three species (Barros-e-Cunha, 1937) only a few studies dealing with this group of micrometazoans have been carried out in Portugal (excluding the archipelagos of Madeira and Azores). An important contribution (seven papers reporting 31 records, including the description of three new species) was made during the subsequent ten years by Da Cunha (1941, 1943, 1944<sup>a,b</sup>, 1947<sup>a,b</sup>, 1948). After a gap of about 20 years a new short phase of study, unfortunately without continuity, occurred with contributions by Fontoura (1981, 1982), Maucci (1983) and Maucci & Durante-Pasa (1984<sup>a,b,c</sup>). As a result of these studies, a final number of 57 limno-terrestrial tardigrade species have been identified in Portugal, including the descriptions of 8 species new to science. After the proposal of a new systematic arrangement of the families and genera of the Eutardigrada (Pilato 1969), in parallel with the improvement of the technical means of analysis, the taxonomy of the group underwent considerable changes. Very probably there are some mis-identifications and the number of 57 Portuguese species could be reduced even more, as proposed by Maucci & Durante-Pasa (1984<sup>c</sup>). However, the opinion of these authors was based only on the observation of the published figures which, from our point of view, are very weak arguments. The corrections of the synonymies and the mistakes detected in the previous records are accepted because it is probably impossible to re-examine the studied material (in its majority probably lost). We prefer to respect, with caution, the outcome achieved in the literature and to wait until future research can solve the existing