



***Macrobotus* (Eutardigrada, Macrobiotidae) from the Great Smoky Mountains National Park, Tennessee/North Carolina, USA (North America): two new species and six new records**

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Abstract

As part of the All Taxa Biodiversity Inventory (<http://www.dlia.org>), we are conducting a large-scale multihabitat inventory of tardigrades in the Great Smoky Mountains National Park (GSMNP) in Tennessee and North Carolina, USA. Here we report our findings for the genus *Macrobotus* (Eutardigrada, Macrobiotidae). Two new species, *Macrobotus martini* sp. nov. and *Macrobotus halei* sp. nov., are described from moss, lichen, soil and leaf litter samples. *Macrobotus martini* sp. nov. differs from all other species of the *Macrobotus hufelandi* group by having a very simple buccal armature without bands of teeth, very large elliptical cuticular pores, unique characteristics of the egg, and other morphometric characters. *Macrobotus halei* sp. nov. differs from other species in the *Macrobotus richtersi* group by having very small cuticular tubercles, well-developed macroplacoids, unique characteristics of the egg, and other morphometric characters. Seven additional *Macrobotus* species have been identified in the GSMNP: *M. harmsworthi* Murray, 1907, *M. hufelandi* Schultze, 1834, *M. islandicus* Richters, 1904, *M. montanus* Murray, 1910, *M. pallarii* Maucci, 1954, *M. recens* Cuénot, 1932, and *M. tonollii* Ramazzotti, 1956. All of these except *M. harmsworthi* are new records for the national park. In addition, *M. pallarii* is a new record for North Carolina, *M. islandicus* is a new record for North Carolina and Tennessee, *M. montanus* is a new record for the eastern USA, and *M. recens* is a new record for the USA.

Key words: taxonomy, Tardigrada, *Macrobotus martini* sp. nov., *Macrobotus halei* sp. nov., *Macrobotus hufelandi* group, *Macrobotus richtersi* group, new species, new records, Tennessee, North Carolina, USA

Introduction

The genus *Macrobotus* C.A.S. Schultze, 1834, contains 159 species and several subspecies (Guidetti & Bertolani 2005, Degma & Guidetti 2007). The vast majority of species in this genus are terrestrial. The genus account, as reported in Nelson & McInnes (2002), is as follows:

“Ten buccal lamellae present; without peribuccal papulae. Buccal tube short, rigid and without spiral thickenings. Buccal mucrones and interior buccal ridges present. Pharynx contains apophyses and macroplacoids; microplacoids may be present; septulum absent. Cuticle with pores of various sizes, number and distribution. Two double claws of each leg of similar size and shape; lunulae present; claws not connected by cuticular bar; sequence 2112. Eggs with protruding processes are laid free.”

The species reported here were found as part of the tardigrade survey (Bartels & Nelson 2006, 2007; Nelson & Bartels 2007) for the All Taxa Biodiversity Inventory (ATBI) occurring in the Great Smoky Mountains National Park (GSMNP), which includes acreage in both Tennessee (TN) and North Carolina (NC)