



Additional Tardigrada from Hubei Province, China, with the description of *Doryphoribius barbarae* sp. nov. (Eutardigrada: Parachela: Hypsibiidae)

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Abstract

Previous papers have reported eleven species of Tardigrada from Hubei Province, and this paper more than doubles that number to 23 species, which includes five new records for China, one new record for mainland China, and one species new to science. *Doryphoribius barbarae* sp. nov. (evelinae group), has two macroplacoids, no microplacoid, nine rows of gibbosities (IX: 2-4-4-4-4-6-4-4-2), cuticle and gibbosities with irregularly shaped and arranged tubercles. It differs from similar species in the number of rows and the number of gibbosities per row, the cuticular pattern, or the size of the macroplacoids. Other species reported from Hubei Province are *Cornechiniscus lobatus*, *Echiniscus* cf. *perviridis*, *E. reticulatus*, *E. viridissimus*, *Pseudechiniscus* cf. *papillosus*, *Doryphoribius huangguoshuensis*, *D. qinlingense*, *D. taiwanus*, *Astatumen bartosi*, *Paramacrobotus* cf. *lorenae*, *M. mauccii*, and *Tenuibiotus tenuiformis*.

Key words: Tardigrade, taxonomy, faunal list

Introduction

The study of Chinese Tardigrada has greatly increased during the last ten years, but there have only been 107 species reported for the entire country (Li *et al.* 2007; Li *et al.* 2008). There are some entire regions of China for which the tardigrade fauna is relatively unknown. Hubei Province is one area which has had only minimal examination for Tardigrada. It is located in eastern central China and comprises approximately 2% (72,400 square miles) of the total area of China (Fullard 1968). So far only one worker has published records for the Hubei Province, describing as new species, *Macrobotus shennongensis* Yang 1999 and *Isohypsibius jingshanensis* Yang 2003 (Yang 1999, 2003). In a more recent paper, on tardigrades from Hubei Province, Yang (2007) reported: *Pseudechiniscus facetialis* Petersen, 1951, *Milnesium tardigradum* Doyère, 1840, *Isohypsibius jinhouensis* (as a new species), *Macrobotus adelges* Dastych, 1977, *M. hibiscus* Barros, 1942, *M. hufelandi* Schultze, 1834, *M. richtersi* Murray, 1911, *M. terricola* Mihelčič, 1953, and *Dactylobiotus aquatilis* Yang, 1999. Combining these three papers (Yang 1999, 2003, 2007) eleven species were recorded for Hubei Province, with three being described as new species.

In this paper we more than double the total to 23 species from Hubei Province, including one species new to science.

Material and methods

Both authors visited Hubei Province in June of 2005, when moss samples were collected and stored in paper bags until examination in 2007. In the Texas laboratory the samples were soaked for 24 hours in commercial spring water, after which the moss was drained through a sieve, squeezed, and the tardigrades extracted from the filtrate using Irwin loops. Microscope slides were prepared using Heinze mounting media (Heinze 1952) and ringed with Murrayite™ sealant. Study of the specimens and photographs were made using a phase contrast microscope (Olympus BX50 with Moticam digital camera). Measurements were made with Motic Images Plus™ image analysis soft-