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Article

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Tardigrada of Grand Cayman, West Indies, with descriptions of two new species of eutardigrade, *Doryphoribius tessellatus* (Hypsibiidae) and *Macrobiotus caymanensis* (Macrobiotidae)

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Abstract

Terrestrial tardigrades were collected from moss, lichen and leaf litter from Grand Cayman in the Cayman Islands, West Indies. Six species were found. *Milnesium tardigradum* Doyère, 1840, *Minibiotus intermedius* (Plate, 1889), *Paramacrobiotus areolatus* (Murray, 1907) and *P. richtersi* (Murray, 1911) have been reported previously from other islands in the Caribbean Sea. Two species on Grand Cayman were new to science. *Doryphoribius tessellatus* **sp. n.** belongs to the '*evelinae*-group', with two macroplacoids and cuticular gibbosities. In having two pairs of posterior gibbosities and cuticular depressions forming a reticular design, it is most similar to *Doryphoribius quadrituberculatus* Kaczmarek & Michalczyk, 2004 from Costa Rica. It differs from *D. quadrituberculatus* in its gibbosity sequence (III:4:2:2), the number of teeth, size of macroplacoids and details of the reticular design on the dorsal cuticle. *Macrobiotus caymanensis* **sp. n.** belongs to the '*polyopus*-group' of species. It differs from other species of the group in having a shorter buccal tube, a more posterior stylet support insertion point and fewer, larger egg processes.

Key words: Tardigrade, Caribbean Islands, *Doryphoribius tessellatus* **sp. n.**, *D. evelinae*-group, *Macrobiotus caymanensis* **sp. n.**, *Macrobiotus polyopus*-group

Introduction

The first investigations of water bears (*Phylum* Tardigrada) in the West Indies were made in the mid-Twentieth Century, when DuBois-Reymond Marcus (1960) found five species on Curaçao and Los Testigos. Since then there have been few studies of terrestrial and freshwater tardigrades in the region. Currently 12 genera and 27 species of limnoterrestrial tardigrade have been reported from islands in the West Indies. These studies have been limited to Puerto Rico (Fox & Garcia-Moll 1962, Beasley 1981), Cuba (Kaczmarek & Michalczyk 2002) and the Dominican Republic (Schuster & Toftner 1982, Kaczmarek *et al.* 2007) in the Greater Antilles and Curaçao (du Bois-Reymond Marcus 1960), Los Testigos (du Bois-Reymond Marcus 1960), Barbados (Meyer & Hinton, in press) and Saint Lucia (Iharos 1982) in the Lesser Antilles.

The Cayman Islands are located in the western Caribbean Sea about 300km south of Cuba (Fig. 1). They are the peaks of the submerged mountains of the Cayman Trench (Leroy *et al.* 2000). Grand Cayman (19 20'N; 81 13'W), the largest island (196 km^2), is relatively flat with a limestone base (Folk *et al.* 1973). The maximum elevation is 24m. Substantial areas of tropical dry forest remain in the eastern and central regions of the island. There are no permanent freshwater sources. This paper describes the terrestrial tardigrade fauna collected from mosses, lichens and leaf litter on Grand Cayman.

Material and methods

Twenty samples of lichens, moss and deciduous leaf litter were collected at four sites on Grand Cayman on 7–8 January, 2010 (Fig. 1, Table 1) and stored in paper envelopes. In the laboratory samples were placed in tap water

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