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New genus and new species of Caprellidae (Crustacea: Peracarida: Amphipoda) from the mesophotic coral ecosystems of Puerto Rico and St. Croix, Caribbean Sea

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Abstract

A new genus and two new species are described based on material collected from the mesophotic coral ecosystems of the U.S. Caribbean. The new genus *Borikenella* can be distinguished from other related genera such as *Pseudaeginella*, *Paradeutella*, *Acicomula* and *Deutella* by the combination of the following characters: pereopods 3 and 4 three-articulate, pereopods 5–7 six-articulate, mandible molar present, palp of the mandible with a setal formula 1-x-0, abdomen without appendages. The new species *Liropus gurui*, can be distinguished from the closely related *L. japonicus* mainly by the lack of anteroventral margin extended forward in pereonite 3, the lack of cleft and serration in the propodus of gnathopod 2, the longer pereopod 3 and the larger abdominal appendages.

Key words: Caprellidae, new genus, new species, *Borikenella spinosa*, *Liropus gurui*, Puerto Rico, mesophotic reefs, Caribbean Sea

Introduction

Mesophotic coral reef ecosystems (MCEs) are warm water, light-dependent reef communities starting at 30–40 m, extending as deep as 150 m in some regions (Kahng et al., 2010). They are usually found on the insular and continental slopes of islands and are visually dominated by macroalgae, sponges and scleractinian corals (Sherman et al., 2010). Despite their close proximity to well-studied coastal coral reefs, MCEs remain poorly understood due to the logistical difficulties and safety issues of working near or below the depth limits of recreational SCUBA diving (Menza et al., 2008). Although MCE studies reveal extensive, productive habitats and rich communities, which differ significantly from their shallow-water counterparts, information regarding the taxonomic composition, depth range, and habitat preferences of MCE species is very scarce compared to shallow-water reefs (Kahng et al., 2010). New diving technology that combines Tri-Mix Diving and Rebreathers allows divers to safely collect specimens from these depths. This method is advisable because it offers an alternative approach to benthic collections compared to the more destructive method of dredging (Petrescu et al., 2012). As for the majority of small peracarids (e.g. Senna et al., 2014), caprellids have not been properly studied in MCE environments, and most of the studies have been focused in waters shallower than 30–40 meters.

The Caribbean Sea is a large sea, closed off to the West and to the South by the Americas, and bordered to the North and to the East by the islands chains of the Greater and Lesser Antilles (Spalding, 2004). It covers about 2,754,000 km², has a volume of 6.5 x 10⁶ km³, borders over 13,500 km of coastline, and is home to 12 island countries, nine continental countries, and 12 island dependencies (to France, the Netherlands, UK and USA (Martin et al., 2013). During the last few years, several studies dealing with shallow waters caprellids from the Caribbean Sea have been published, focused on Venezuela (Guerra-García, 2003a; Díaz et al., 2004), Colombia