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Three new Nannastacidae (Crustacea: Cumacea) species from a Caribbean mesophotic ecosystem

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Abstract

Examination of substrata from the mesophotic reefs of Mona Island, Puerto Rico yielded 3 new species of cumaceans, all from the family Nannastacidae: *Cumella achimae* sp. nov., *C. victoriae* sp. nov. and *Nannastacus craciuni* sp. nov. The 3 new species bring the total of new cumacean taxa described from the mesophotic reefs of US Caribbean to 9, highlighting the potential of mesophotic reefs as a biodiversity hotspot. For the first time we report the genus *Nannastacus* from the Caribbean Sea.

Key words: Cumacea, new species, mesophotic cruise, tri-mix rebreathers.

Introduction

Near the declining shallow water coral reefs of the Caribbean there are thriving deeper water coral communities, named mesophotic coral ecosystems (MCEs). These reefs, similarly to their shallow water counterparts, are characterized by macroalgae, sponges, and corals (Lesser *et al.* 2009, Locker *et al.*, 2010; Sherman *et al.*, 2010). Mesophotic coral ecosystems found on the insular and continental slopes of Caribbean islands between 30 and 100 m (Locker *et al.*, 2010). Even at the lower depth range (70–100 m), there is enough light for photosynthesis to take place enhancing the growth of several scleractinian corals (e.g. *Agaricia*, *Montastraea*). These corals are foundation species of the MCEs providing habitat for commercially important species (e.g. groupers, snappers) (Bejarano, 2013) but also for a highly diverse macrofauna and meiofauna. Our knowledge of commercially important fish and corals observed in MCEs is improving but no systematic effort to study the macrofaunal and meiofaunal biodiversity exists.

Previous work on Cumacea from Puerto Rico resulted in a total of 6 new species and 1 new genus from this area, all of them belonging to the family Nannastacidae (Petrescu, Chatterjee & Schizas, 2012, 2013, 2014 in press).

In this paper, we are describing 2 new species of the genus *Cumella* and 1 new species of the genus *Nannastacus* collected during the first of 3 mesophotic cruises (2010–2012) organized by the University of Puerto Rico at Mayagüez (UPRM), the Caribbean Coral Reef Institute (CCRI) and the Department of Marine Sciences (DMS) of UPRM.

Material and methods

All 3 specimens were collected during the first mesophotic cruise of UPRM-CCRI-DMS from southeast Mona Island (18°02'43.9080" N, 67°52'42.7200" W), Puerto Rico, Caribbean Sea, 73.1 m depth, wash from the coral

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