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Shallow-water stenopodidean and caridean shrimps from Abrolhos Archipelago, Brazil: new records and updated checklist

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Abstract

This study deals with a recent collection of stenopodidean and caridean shrimps made in the Abrolhos Archipelago, Bahia, Brazil, in July and August 2013. Sampling was carried out in the vicinity of Ilha de Santa Bárbara (17°57'49"S 38°41'53"W). Specimens were obtained by hand or using small hand nets in tide pools or under rocks in the intertidal zone. Part of the material was collected by scuba diving in the shallow subtidal, to a maximum depth of 11 m. We obtained a total of 18 species, 12 of which are reported for the first time for the Abrolhos and 4 as new records for the state of Bahia. The distributions of *Microprosthema semilaeve* (von Martens, 1872), *Typton gnathophylloides* Holthuis, 1951, *Alpheus verilli* (Schmitt, 1924) and *Alpheopsis cf. trigona* (Rathbun, 1901) are extended from their previously known ranges. The occurrence of *Automate cf. rectifrons* Chace, 1972 on the Brazilian coast is confirmed. We thus provide an updated checklist of stenopodidean (2 species) and caridean (29 species) shrimps from the Abrolhos Archipelago, incorporating and critically evaluating previous records.

Key words: Crustacea, Decapoda, Stenopodidea, Caridea, new records, diversity, marine shrimp

Introduction

With an area of about 6000 km², the Abrolhos Bank off the coast of Bahia, Brazil, comprises the most extensive and biologically rich reef complex in the South Atlantic (Leão 2002). The area comprises a variety of habitats, including banks of calcareous algae, soft bottoms and coral reefs (Castro & Pires 2001; Leão 2002; Dutra *et al.* 2006). This heterogeneity of habitats supposedly shelters a wide diversity of marine organisms, which, however, are still fragmentarily known. Given the great ecological importance of this area, the Abrolhos Marine National Park, the first marine national park established on the Brazilian coast, was created in 1983 (Leão *et al.* 2003).

The Abrolhos was one of the first regions explored on the Brazilian coast with respect to marine fauna. The first mentioning of decapod crustaceans from the area was that of Smith (1869), who reported various crabs and shrimps obtained in 1867 by the geologist Charles F. Hartt, mainly in the Abrolhos and Caravelas, Bahia. Subsequently, several authors reported decapod species from the Abrolhos, gradually increasing the total number of decapods known from the region (e.g. Rathbun 1898; Haig 1966; Rodrigues da Costa 1968; Joly *et al.* 1969; Gomes Corrêa 1972; Christoffersen 1979; Young & Serejo 2005; Anker & Pachellet 2014).

Despite the biological and ecological interest of the region, previous collecting efforts were rather sporadic and the diversity of decapod crustaceans in the Abrolhos Archipelago still remains to be explored. As expected, most decapods known from the Abrolhos area are brachyuran and anomuran crabs (Rathbun 1898; Moreira 1901; Haig 1962, 1966; Forest & de Saint Laurent 1967; Rodrigues da Costa 1968; Joly *et al.* 1969; Gomes Corrêa 1972; Veloso & Melo 1993; Coelho Filho & Coelho 1998). In contrast, stenopodidean and caridean shrimps of the region remain poorly known, with only a few published records (e.g., Gomes Corrêa 1972; Christoffersen 1979; Young & Serejo 2005; Anker & Pachellet 2014).

During the still ongoing project “Diversity of Marine and Estuarine Decapod Crustaceans in Southern Bahia, Brazil”, started in 2003, we collected samples of Stenopodidea and Caridea at one selected site in the Abrolhos Archipelago in July-August 2013. This collection resulted in several new records of shrimps from the region

Previous records from Abrolhos. R/V Calypso, Sta. 77 (18°00'S 38°18'W), 48 m; R/V Calypso, Sta. 80 (18°09'S 38°30'W), 50 m (Christoffersen 1979).

***Processa fimbriata* Manning & Chace, 1971**

Material examined. none.

Distribution. Western Atlantic—North Carolina, Florida, Gulf of Mexico, Yucatan, Bahamas, West Indies, and Brazil (Atol das Rocas, seamounts off Fernando de Noronha, Rio Grande do Norte to Rio de Janeiro) (Christoffersen 1979, 1998; Coelho Filho 2006; Cardoso & Young 2007).

Previous records from Abrolhos. R/V Calypso, Sta. 80 (18°09'S 38°30'W), 50 m (Christoffersen 1979).

Discussion

Until this study, the shallow-water fauna of Stenopodidea and Caridea from the Abrolhos Archipelago off Bahia comprised 19 species (Smith 1869; Gomes Corrêa 1972; Christoffersen 1979; Young & Serejo 2005; Ferreira *et al.* 2010; Vieira *et al.* 2012; Anker & Pachelle 2014). The stenopodidean *Microprosthema semilaeve* and the carideans *Anchistioides antiguensis*, *Cuapetes americanus*, *Leander tenuicornis*, *Typton gnathophylloides*, *Periclimenes yucatanicus*, *Alpheopsis* cf. *trigona*, *Alpheus carlae*, *Alpheus verrilli*, *Automate* cf. *rectifrons*, *Synalpheus antillensis* and *Hippolyte obliquimanus* are new additions to the shrimp fauna of the Abrolhos, increasing the total number of species in the region to 31.

A total of 71 species of Caridea have been reported from Bahia (Almeida *et al.* 2012; 2013a, 2013b; 2014b; Santos *et al.* 2012; Soledade *et al.* 2013, 2014; Anker & Pachelle 2014). In this study, four species of caridean shrimps were added to the marine fauna of Bahia (*Typton gnathophylloides*, *Alpheopsis* cf. *trigona*, *Alpheus verrilli*, *Automate* cf. *rectifrons*), now totaling 75 known species in the state. The stenopodidean fauna of Bahia comprises only two species, both found in the Abrolhos (Coelho 1966; 1969; Coelho & Ramos 1972; Young & Serejo 2005; Almeida *et al.* 2007; Santos *et al.* 2012; this study). However, the above numbers (31 and 2) are still far from satisfactory as our collection effort focused only on a small portion of the archipelago (Ilha de Santa Bárbara and adjacent waters) and very shallow water (intertidal to 11 m). Consequently, a more comprehensive survey of the shrimp fauna of the Abrolhos, encompassing a wider sampling area, a greater variety of habitats, scuba diving in deeper water (down to 30 m), and employment of additional collection methods (suction pumps, beach seines, baited traps etc.), is needed to better document the expected high biodiversity in this region.

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