Border between two worlds: the first record of sea anemone feeding on centipede

Fernando Moraes¹ & Amazonas Chagas-Júnior*¹

¹ Departamento de Invertebrados, Museu Nacional/UFRJ. Quinta da Boa Vista, s/no. São Cristóvão, Rio de Janeiro – RJ 20940-040, Brasil
*Corresponding author. E-mail: amazonaschagas@gmail.com

Abstract

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Sea anemones play an important role in the structure of benthic communities as secondary consumers, displaying a diversified diet from dissolved and particulate organic matter to small prey (e.g., Crustacea, Echinodermata, Gastropoda, Polychaeta, Bryozoa and others Arthropoda). Large prey are not the usual food item ingested, but have already been recorded, feeding on animals dislodged from the substrate by wave action or other predators. Records of ingestion of terrestrial animals by sea anemones are from gut contents, and usually do not go beyond order level identifications (Kruger & Griffiths 1996, 1998). With an opportunistic hunting strategy, anemones wait with their tentacles extended until a passing animal touches them, when they react rapidly using both physical and chemical reactions to entrap the prey (Van Praët 1985; Kruger & Griffiths 1996, 1998).

In December 31st 2006, during an afternoon free dive in Angra dos Reis, Rio de Janeiro, Brazil, the first author recorded the sea anemone *Bunodosoma caissarum* Corrêa, 1964 eating an adult male of the scolopendromorph centipede *Otostigmus scabricauda* Humbert & Saussure, 1870 (Fig. 1). It was on a vertical concrete dock pillar, about 25 cm beneath the water surface on a spring tide with little wave action among several
other anemones. *Bunodosoma caissarum* is an endemic Brazilian actiniid, distributed from the coast to remote oceanic islands (Belém 1988). It is highly tolerant to polluted environments, developing high densities of large individuals on rocky shores and artificial structures in eutrophic areas (e.g., Guanabara Bay, Rio de Janeiro, Brazil).

The centipede scolopendromorph *Otostigmus scabricauda* is widely distributed from southern to northeastern Brazil, mainly in the coast zone, through several ecosystems (e.g., beaches, “restingas” – the upper beach vegetation). It is an errant predator, very resistant to extreme environmental conditions and reported from dry to wet habitats, including urban sewage systems and domestic pipelines. Prey capture had already happened when the observation was made. The centipede was caught by its head, and its posterior end was still outside the anemone (Fig. 1). There are two possible ways in which the centipede and the anemone could have come into contact: (1) the centipede was crawling over the anemone and touched its tentacles or (2) the centipede was dislodged by wave action and swept onto the tentacles. The second possibility seems unlikely as the waves were very weak and the substratum rough giving a firm hold for the centipede as it crawled through the intertidal zone. Probably the centipede was hunting in the intertidal zone, just below the water surface when it was caught by the anemone.

![Figure 1](image-url)
This record is the first evidence of a sea anemone feeding on a centipede, reinforcing the opportunistic feeding strategy of this group. It also indicates that *O. scabricauda* probably hunts underwater in the intertidal zone.

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**References**


