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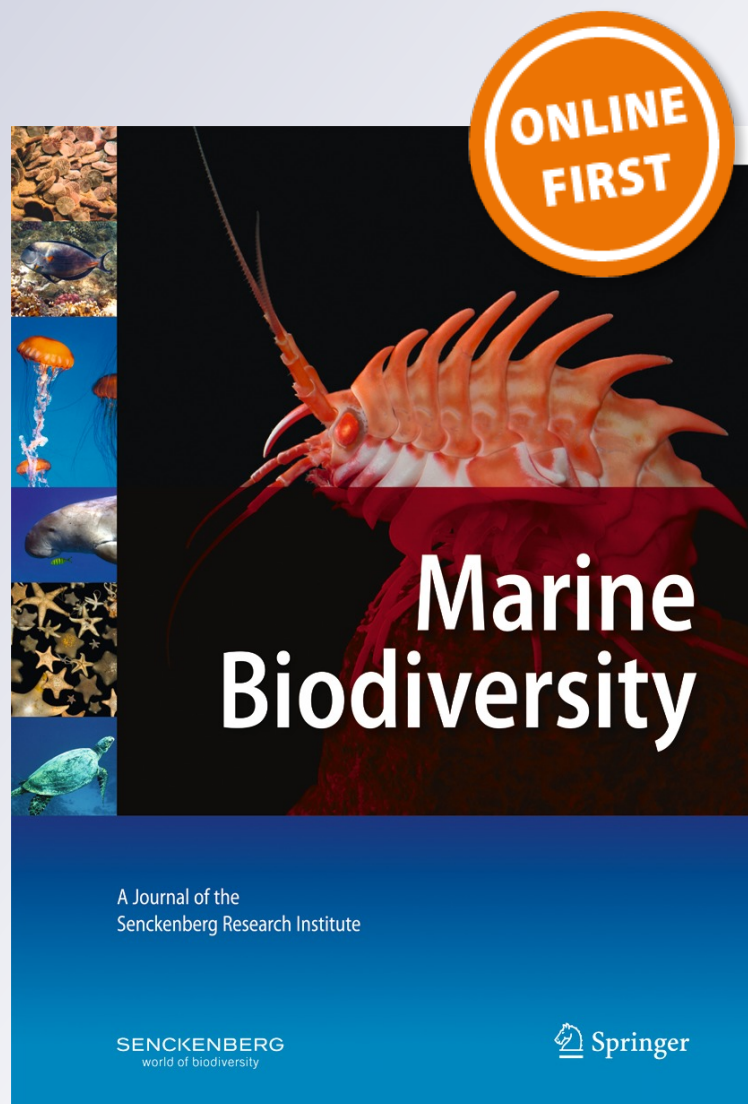
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Camouflage of the seahorse *Hippocampus reidi* with plastic debris: an unusual type of protective resemblance

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Camouflage is one of the strategies of reef fishes, in which they mimic other species or use the background to match the combination of their colors and textures (Randall 2005). Seahorses of the genus *Hippocampus* in a pristine habitat generally use saturated colors to camouflage their colorful background using matching or confusing objects as a deceiving mode (Stevens & Merilaita 2011).

The present record is the first description of camouflage by the sea horse *Hippocampus reidi* Ginsburg, 1933 with plastic debris in mangroves from NE Brazil: Formoso River, Tamandaré, Pernambuco State (8°41'01.51"S, 35°06'25.92" W). During an exploratory underwater visual census December 18, 2011 at 09:26, one individual of *H. reidi* was observed at a depth of 3 meters matching plastic debris deposited on the sandy bottom (Fig. 1). The first position observed of the sea horse was the posterior region of its body hiding behind the plastic and using a confusing color as a deceiving mode (Fig. 1a). When approached by the observer the fish matched its head with some plastic spots and its tail with the sand (Figs. 1b, c).

This case showed that *H. reidi* displayed a kind of protective resemblance, in which this camouflage is used for an

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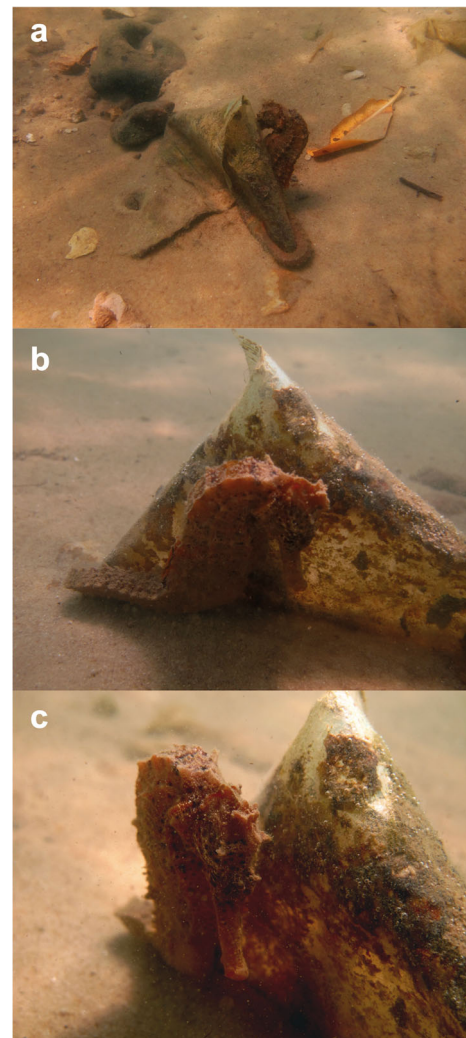


Fig. 1 **a** *Hippocampus reidi* matching with plastic debris. **b** *H. reidi* resembling plastic spots and the sandy bottom. **c** Details of the color spots of the head and snout of the sea horse imitating the plastic

animal that closely resembles a part of a substratum, a plant or a sedentary animal (e.g., *Hippocampus bargibanti* matching with seafans) (Randall 2005).

The use of plastic debris by marine species for protection or refuge is not well documented, but one case of hermit crab using plastic debris as a shelter was recorded (Barreiros & Luiz-Jr 2008). Some *ad lib* observations by scuba divers, near to stilt houses in North Sulawesi (Indonesia), have reported another species of seahorse commonly found in or over trash; most of it being plastic (pers. comm. to the authors by Devin Leary, March 2015). The present record suggests that the use of plastic debris by seahorses was an occasional option of protective resemblance. Moreover, the increase of litter and debris in coastal inshore habitats, such as mangroves and coverage of coral reefs, can reduce natural areas of protection and refuge for this threatened species (Lourie et al. 2004).

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