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First record from the Atlantic: a *Zanclea*-scleractinian association at St. Eustatius, Dutch Caribbean

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Abstract Scleractinian reef corals have been acknowledged as the most numerous host group for associated hydroids belonging to the genus Zanclea. To date, their geographical distribution is known to include several Indo-Pacific regions. During the Statia Marine Biodiversity Expedition to St. Eustatius (Lesser Antilles, Dutch Caribbean), the Zanclea-coral association was observed for the first time for the Caribbean Sea as well as for the Atlantic Ocean. Our findings confirm that the biodiversity associated with coral reefs remains insufficiently explored worldwide.

Keywords Corals · Hydroids · Symbioses · Distribution · Host range

Scleractinian reef corals have been acknowledged as the most numerous host group for associated hydroids belonging to the genus *Zanclea* (Montano et al. 2015). Recently, various new geographical localities and host records have been published for these animals despite their small size (~1 mm length), which makes them nearly undetectable in the field. To date, their geographical distribution is known to include several Indo-Pacific regions, such as the Red Sea, the Republic of Maldives, Indonesia, Australia, Taiwan and Japan (Boero et al. 2000; Pantos and Bythell 2010; Hirose and Hirose 2011; Fontana et al. 2012; Montano et al. 2014, 2015).

During the Statia Marine Biodiversity Expedition to St. Eustatius (Lesser Antilles, Dutch Caribbean) in June 2015, two colonies of the scleractinian reef coral *Orbicella faveolata* (Ellis and Solander, 1786) were observed to host *Zanclea* hydroids at 16 and 41 m depth (Fig. 1) by applying the roving diver technique. This association appeared to be uncommon in the waters around St. Eustatius, and these records are the first of a *Zanclea*-coral association for the Caribbean Sea as well as for the Atlantic Ocean.

In addition to a total of 33 species and 24 genera of Scleractinia recorded from the Indo-Pacific (Montano et al. 2015), the Atlantic *Orbicella faveolata* represents the 34th coral species and 25th scleractinian genus recorded as hosting a *Zanclea* species. Moreover, *Orbicella* belongs to the Merulinidae, which is now known to include six Indo-Pacific genera and one Atlantic genus of *Zanclea*-hosting corals, which equals the maximum number of seven already noted for the Indo-Pacific family Fungiidae (Montano et al. 2015).

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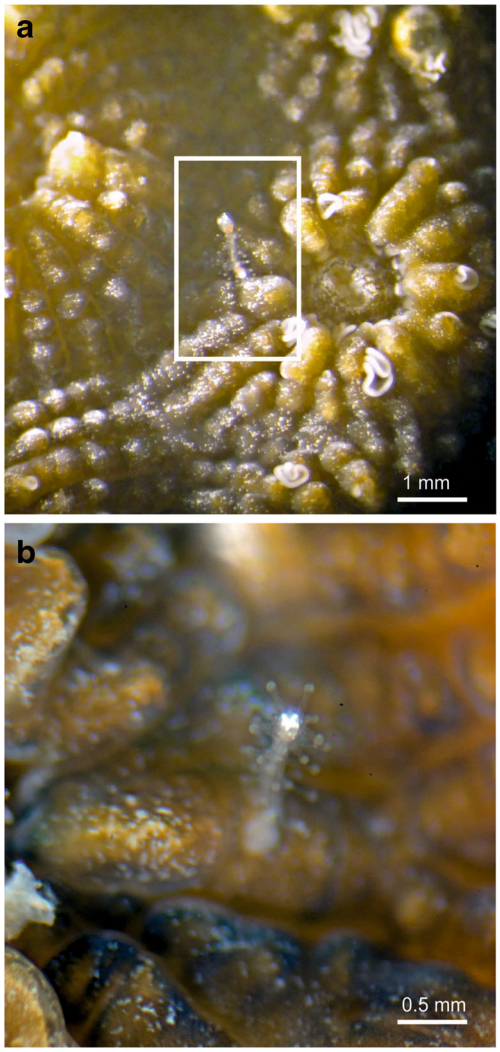

Fig. 1 **a** *Zanclea* sp. with bud on *Orbicella faveolata* (The Blocks dive site: 17°27.847′ N; 062°59.112′ W; depth, 16 m); **b** close-up of *Zanclea* sp. polyp (Grand Canyon dive site: 17°27.697′ N; 62°58.675′ W; depth, 41 m). *Scale bars*: **a** ~1 mm, **b** ~0.5 mm

Furthermore, the present observation constitutes the deepest record of a coral-associated *Zanclea* so far, implying that additional host species can be found when mesophotic reef zones (>30 m deep) are explored during future surveys. This finding suggests that this kind of association may have a circumtropical distribution and that insufficient search effort has prevented a full understanding of its distribution on tropical coral reefs.

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