

Host switch by the Caribbean anemone shrimp *Periclimenes rathbunae* in Curaçao

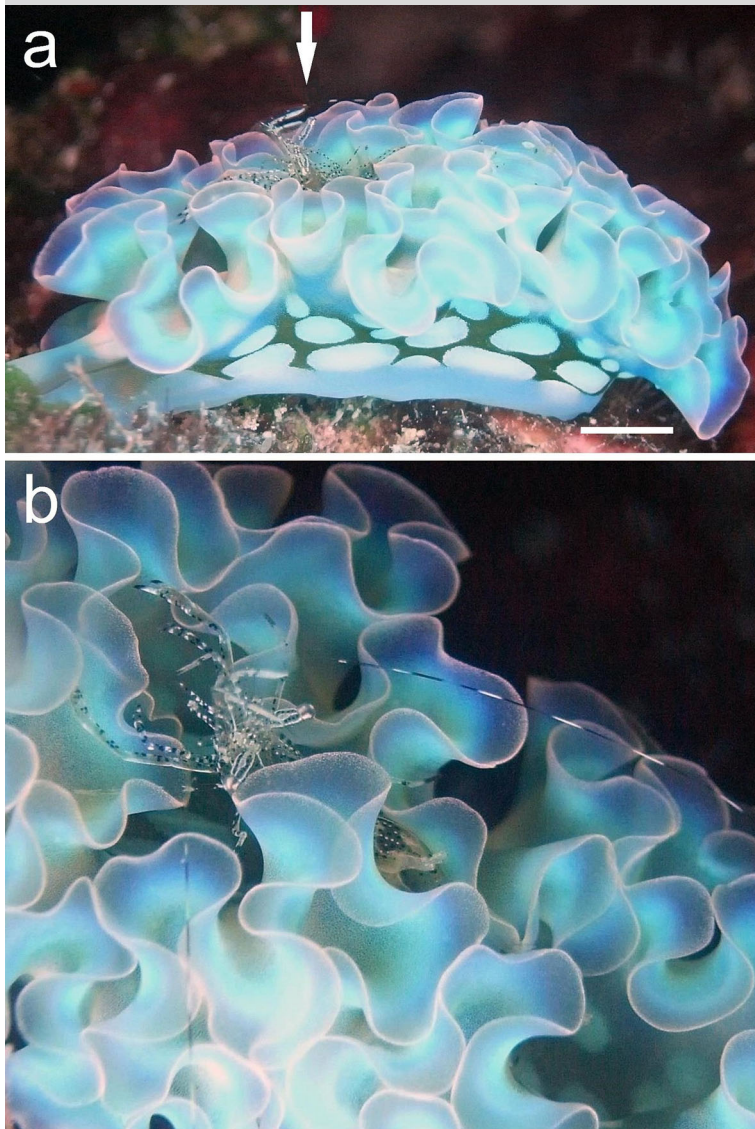


Fig. 1 Anemone shrimp, *Periclimenes rathbunae*, in association with the lettuce slug, *Elysia crispata*, at Curaçao. **a** Shrimp on the dorsal side of the slug (arrow), scale bar 0.5 cm. **b** Same association in close-up view from above

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The anemone shrimp *Periclimenes rathbunae* Schmitt, 1924 (family Palaemonidae), is a common associate of shallow-water anthozoans in the tropical western Atlantic. It has been reported from several sea anemone species, an octocoral, a corallimorpharian, and a scleractinian coral (Brinkmann and Fransen 2016).

During a coral reef survey in Curaçao (1 April 2014), a previously unknown association was found between an individual of *P. rathbunae* and a lettuce slug, *Elysia crispata* Mörch, 1863 (Fig. 1). It occurred on the reef slope (6–8 m deep) of Playa Kalki on the island's northwestern tip (12°22'30"N, 69°09'28"W), where this slug appeared to be abundant (ca. 40 observed individuals per 1-h dive). The shrimp's blue coloration matched that of its host, but it is usually dark red-brown (see, e.g., Brinkmann and Fransen 2016; Horká et al. 2016).

Elysia crispata is a polymorphic sacoglossan sea slug (infraclass Opisthobranchia) that eats algae in a wide range of habitats (Krug et al. 2016). In this case, the shrimp was positioned on top of its host between the dorsal frills, as if riding it (Fig. 1a, b).

Periclimenes rathbunae is the second shrimp species recorded as associate of an opisthobranch gastropod and the first one in the Atlantic. The other shrimp, *Zenopontonia rex* (Kemp, 1922), lives on Indo-Pacific reefs and is famous under its junior synonym, *Periclimenes imperator* Bruce, 1967. This species lives with echinoderm hosts as a juvenile but changes to nudibranch hosts as it matures (Horká et al. 2016). *Periclimenes rathbunae* also lives with a range of hosts, but it is not clear whether the association with *E. crispata* also results from an ontogenetic host switch.

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References

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