

## A Novel Dispersal Mechanism of a Coral-Threatening Sponge, *Terpios hoshinota* (Suberitidae, Porifera)

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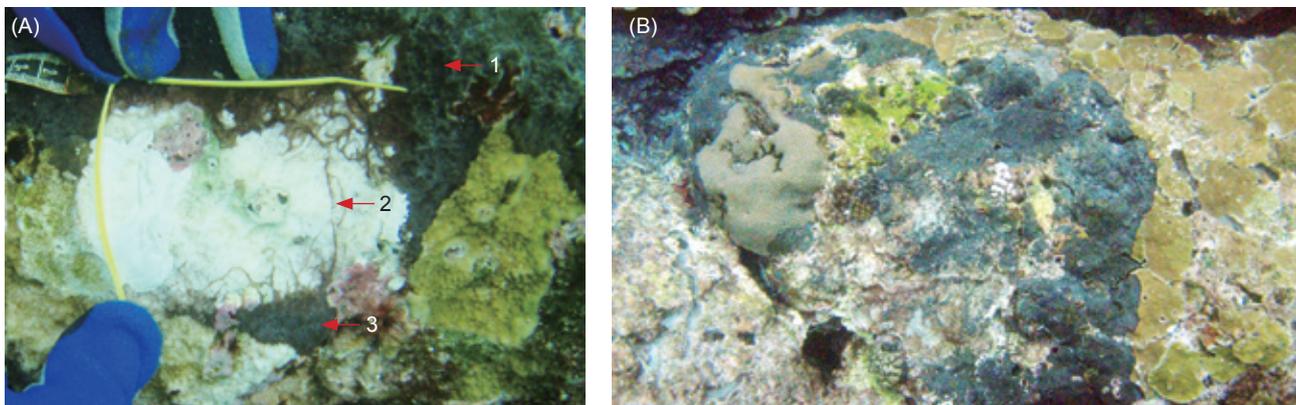
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*Terpios hoshinota*, a blackish encrusting cyanobacteriosponge, is known to overgrow and kill a wide range of stony coral hosts, mostly on Pacific reefs (Bryan 1973, Plucer-Rosario 1987, Rützler and Muzik 1993). An outbreak of the sponge occurred in 2008 at Green I. (22°39'N, 121°29'E), off the southeastern coast of Taiwan, where up to 30% of coral colonies were infected on certain reefs within a couple of years of its first discovery (Liao et al. 2007).

In a test of methods to stop the sponge from expanding, we used dark plastic sheets (10 x 10 cm), with transparent ones as controls, to cover the advancing sponge fronts without touching the substrate corals. The idea was to block the sunlight needed by the symbiotic cyanobacteria for growth. The shading caused the coral hosts to bleach and most of the sponges to stop advancing. But, in some cases within 2 wk, the sponges had extended thin tissue threads which crossed the shaded and presumably uninhabitable area under the dark plates. Once reaching light on the other side of the dark plate, the sponge thread quickly expanded in area and resumed normal growth (Fig. 1A). The capability to cross unsuitable habitats with pioneering tissue obviously enables the sponge to overgrow new coral surfaces and infect separate colonies in the neighborhood. In fact, most infested corals were colonized by sponges originating from their neighbors (Fig. 1B).



**Fig. 1.** *Terpios hoshinota*. (A) Pioneering tissue threads of sponges on bleached host corals. The yellow wires, ~10 cm in length, delineate the area of the dark plate coverage (removed before taking the picture) which induced coral bleaching. 1. Original sponge infection. 2. Thin thread of pioneering tissues of the sponge under the dark plate (removed) on bleached corals. 3. New sponge tissue expansion after the pioneering tissue crossed the area covered by the dark plate (removed). (B) A sponge, 1.5-2 m across, covered by more than 10 coral colonies (mostly *Isopora palifera*). <http://zoolstud.sinica.edu.tw/Journals/48.5/596.pdf>

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