Are infestations of *Cymo melanodactylus* killing *Acropora cytherea* in the Chagos archipelago?

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Fig. 1 *Cymo melanodactylus* on *Acropora* (Photo by Brian Mayes)

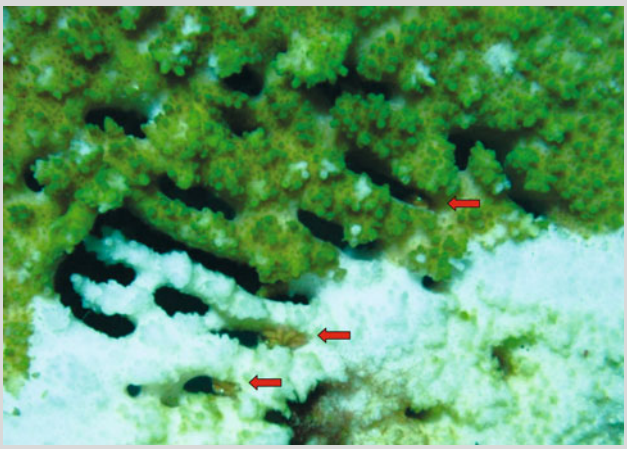

Fig. 2 *Cymo melanodactylus* (indicated by *arrows*) associated with recently dead areas of *Acropora cytherea*

Associations between branching corals and infaunal crabs are well known, mostly due to the beneficial effects of *Trapezia* and *Tetralia* crabs in protecting host corals from crown-of-thorns starfish (e.g., Pratchett et al. 2000) and/or sedimentation (Stewart et al. 2006). These crabs are obligate associates of live corals and highly prevalent across suitable coral hosts, with 1–2 individuals per colony (Patton 1994). *Cymo melanodactylus* (Fig. 1) are also prevalent in branching corals, mostly *Acropora,* and are known to feed on live coral tissue, but are generally found in low abundance (<3 per colony) and do not significantly affect their host corals (e.g., Patton 1994). In the Chagos archipelago, however, infestations of *Cymo melanodactylus* were found on recently dead and dying colonies of *Acropora cytherea*.

Acropora cytherea is commonly dominant between 5 and 15 m depth at moderately exposed locations throughout Chagos. At several locations visited in February 2010, approximately 5% of these colonies had conspicuous evidence of recent tissue loss (Fig. 2). Close inspection of these colonies revealed localized infestations (up to 47 crabs per colony) of *C. melanodactylus* mostly located within the area of recent tissue loss or along the tissue margin (Fig. 2). Conversely, these crabs could not be found on healthy colonies of *A. cytherea*, or on dead colonies.

Given the high densities of *C. melanodactylus* and their proximity to the dead tissue front, it seems that these crabs may be causing or contributing to observed coral mortality. Alternatively, these corals may be dying due to other causes (e.g., coral disease) and like many other corallivores (e.g., McIlwain and Jones 1997), *C. melanodactylus* may feed selectively on injured corals.

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