Coral-mimicking alga *Eucheuma arnoldii* found at Ashmore Reef, north-western Australia

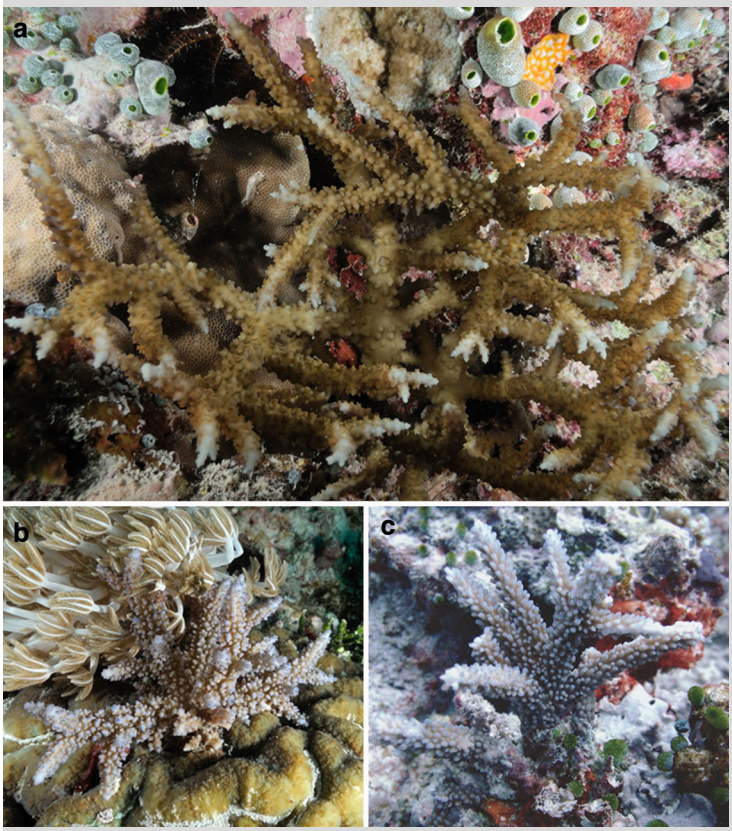

Fig. 1 **a** The coral-mimicking alga *E. arnoldii* in situ at Ashmore Reef. This is only the second time this species has been recorded in Western Australia. **b** *E. arnoldii* distinctly resembles staghorn corals such as **c** *Acropora vaughani* which was found growing only metres away from the mimic-alga

In coral reef ecosystems, mimicry (either via appearance, colour, scent, behaviour or locomotion) is a common phenomenon amongst reef fishes, crustaceans, molluscs and polychaetes because it increases survival (Wickler 1968). Some algae are also mimetic, modelling other algal species that have chemical defences (Littler et al. 1986). Generally, mimics tend to model closely related organisms, but animals that camouflage themselves as plants can also be classified as mimics. Oddly, some species of marine red algae (Rhodophyta) extend the boundaries of mimicry in the ocean by modelling animals.

Eucheuma arnoldii Weber-van Bosse is a mimetic species of red algae that resembles branching (staghorn) *Acropora* (Kraft 1972) in not only morphology, but colouration (i.e., Batesian mimicry) (Fig. 1a). It has raised protuberances resembling radial and axial corallites, tapering branches and blue branch tips (Fig. 1b), which resemble the similarly coloured radial and axial corallites of certain staghorn corals (Fig. 1c). Two plants of this enigmatic algal species were recently found for the first time at Ashmore Reef National Nature Reserve (12.17°N, 123.02°E). They were growing between 12 and 14 m depth on the northern exposed reef slope.

Seaweeds have developed numerous strategies to cope with herbivory (Duffy and Hay 1990), but mimicry in the group is rarely reported and its ecological significance is unknown. The only other apparent mimic is the red algal genus *Rhodogorgon*, which was named for its striking resemblance to gorgonian corals (Norris and Bucher 1989). In the case of *E. arnoldii*, it is likely that the mimetic behaviour deceives herbivorous predators. Thus, modelling as an unpalatable calcified scleractinian coral would have the obvious advantage of predator avoidance via crypsis.

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