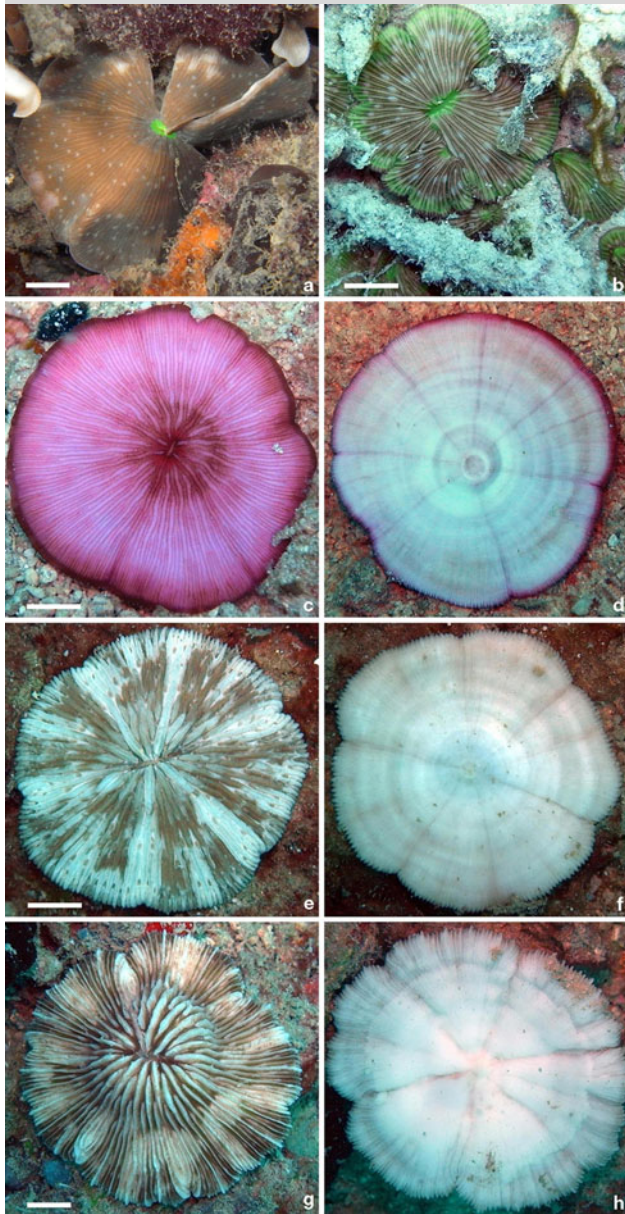


# Reef sites

## Initial phase of autotomy in fragmenting *Cycloseris* corals at Semporna, eastern Sabah, Malaysia



**Fig. 1** Fragmenting *Cycloseris* corals at Semporna. **a** Specimen of *C. sinensis* that has started to break into segments. **b** Regenerated fragments of *C. sinensis*. **c-h** Upper and lower side of complete corals with detachment scar and fissures in initial phase of autotomy of *C. sinensis* (**c, d**), *C. costulata* (**e, f**), and *C. vaughani* (**g, h**). Scale bars: 1 cm

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Free-living mushroom corals (Scleractinia: Fungiidae), classified by some authors as *Diasteris*, are known for their capacity to reproduce asexually by fragmentation. They split themselves in wedge-shaped segments by radial skeleton dissolution. The segments regenerate, split again, and continue this process repeatedly. It has been suggested that they bypass sexual reproduction because so-called *Diasteris* corals have not been observed to show a detachment scar (Yamashiro and Nishihira 1998). Nevertheless, in one study, gametogenesis was observed, but sexually derived recruits were not found (Colley et al. 2002).

During the Semporna Marine Ecological Expedition in 2010 (SMEE2010), mushroom corals of various *Cycloseris* species showed radial slits at their undersides that appeared to indicate self-inflicted skeleton dissolution described as autotomy for *Diasteris* (Yamashiro and Nishihira 1998): *C. sinensis* (Milne Edwards and Haime, 1851) (Fig. 1a–d), *C. costulata* (Ortmann, 1889) (Fig. 1e–f), *C. distorta* (Michelin, 1842), *C. fragilis* (Alcock, 1893), and *C. vaughani* (Boschma, 1923) (Fig. 1g–h). Some showed clear traces of detachment, indicating their origin as sexually produced recruits (Fig. 1d, f, h). These observations point out that *Diasteris* should not be a separate genus and that the “*Diasteris* morph” could be a result of asexual reproduction in free-living individuals of *Cycloseris* species. Hoeksema (1989) revised the taxonomy of *Diasteris* Milne Edwards & Haime, 1849, and *Cycloseris* Milne Edwards & Haime, 1849, and considered both to be synonymous, with the latter having priority but as a subgenus in *Fungia* Lamarck, 1801. In a recent molecular study, *Cycloseris* has been upgraded to genus level again (Gittenberger et al. 2011).

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