

Reef sites

Alveopora japonica beds thriving under kelp

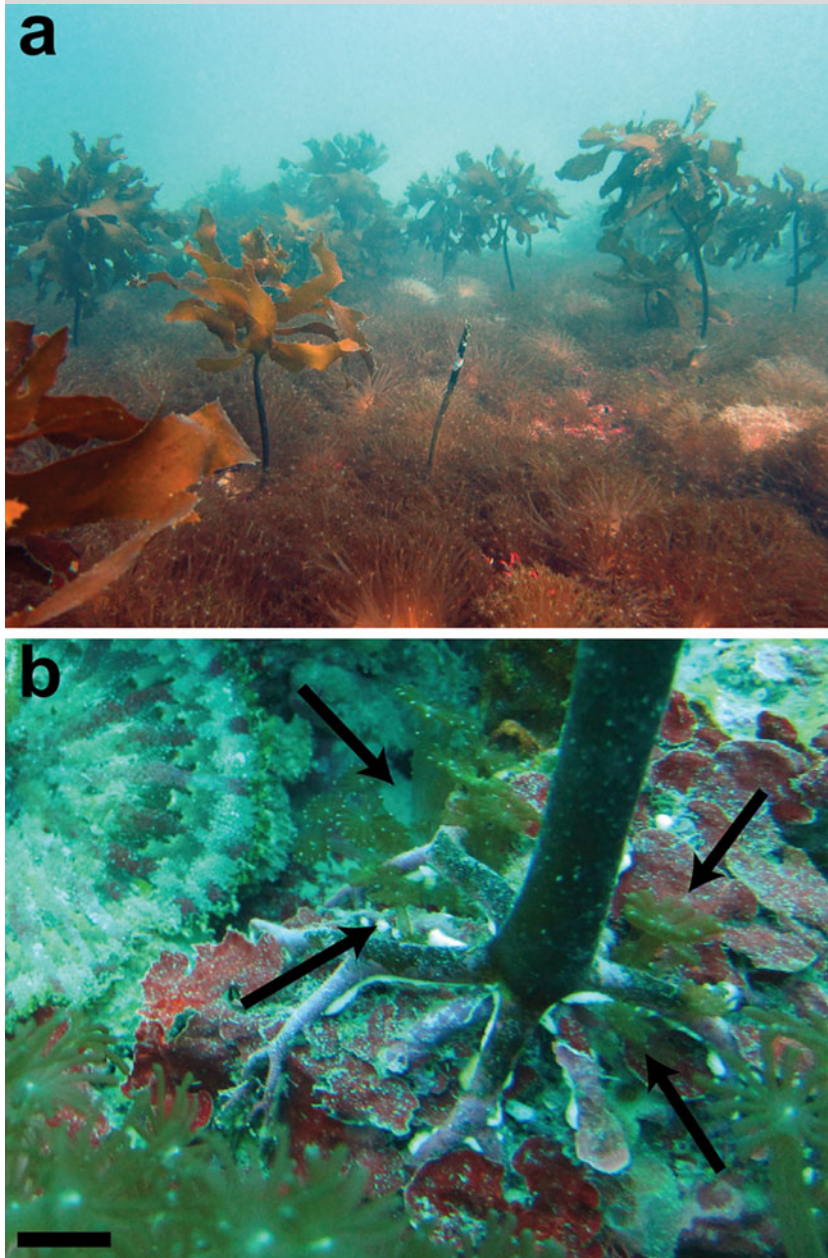


Fig. 1 **a** *Alveopora japonica* beds punctuated by the presence of the endemic kelp *Ecklonia cava*. **b** Recruits of *A. japonica* (arrows) occurring at the base of the holdfast of the kelp. Scale bar 2 cm

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Alveopora japonica Eguchi, 1968 (Scleractinia, Acroporidae) occurs in shallow benthic communities from Southern Taiwan to high latitude areas of Japan where it is usually rare and nested among algae and soft corals (Dai and Horng 2009). It is also a peculiar species among the scleractinians due to its association with *Symbiodinium* clades C, E, and F (Rodríguez-Lanetty et al. 2003; Jeong et al. 2012).

In October 2012, we found extensive *A. japonica* beds (Fig. 1a, b) at Biyangdo, located to the northwest of Jeju Island, South Korea (33°24'5"N, 126°13'8"E), where it formed a dense and almost monospecific carpet at 10–17 m in depth. These stands were punctuated by the regionally endemic kelp *Ecklonia cava*. Based on 63 quadrats (0.25 m²), *A. japonica* covered 67 ± 4 % of the benthos over an area of >1 ha. Most of the colonies were <10 cm in diameter. Many recruits occurred where coral cover was low such as around the base of holdfasts of the kelp, which represented 4 % of the benthic community. Other major benthic categories included calcareous crustose coralline algae (18 %) and sand (8 %).

Ecklonia cava is usually the dominant benthic species around Jeju Island. Recently, traditional fisherwomen, 'Haenyeo,' as well as local divers, have reported orally a gradual decline in the population of this economically and ecologically important kelp to the benefit of *A. japonica*. Apart from being one of the first reports on high dominance of scleractinian coral species at this latitude, this observation might also indicate a persistent shift from kelp forests to coral dominance, and the potential loss of an economically important endemic taxa.

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