Reef sites

Gall crab city: an aggregation of endosymbiotic crabs inhabiting a colossal colony of *Pavona clavus*

Fig. 1 Colony of *Pavona clavus* on a reef slope of Putus Island, North Sulawesi. **a** Part of colony with 100 % cover. **b** *Leptoseris papyracea* corals in between columns (arrows crab pits). **c** Position (arrow) of crab pit (scale bar 1 cm)

Colonies of the scleractinian corals *Pavona clavus* (Dana, 1846) and *Pavona duerdeni* Vaughan, 1907, may form massive monospecific stands that extend over several meters across with thick columnar, club-shaped or laminar protuberances projecting from their upper surface (Veron 2000).

During a biodiversity survey on February 18, 2012, at Putus Island in Lembeh Strait (N Sulawesi, Indonesia; 1°31'21"N, 125°16'37"E), a colony of *P. clavus* was observed encompassing a large area of the reef flat and slope (Fig. 1a). This area was approximately 50 m wide and covered the reef flat at 4 m depth from where it stretched downwards to 24 m depth on the lower reef slope, over a surface area of at least 1,250 m². Some crevices in between the coral's columnar protuberances were partly filled by foliaceous *Leptoseris papyracea* (Dana, 1846) (Fig. 1b) and *Pavona cactus* (Forskål, 1775) corals. The columns themselves were inhabited by endofauna consisting of, among others, gall crabs of the genus *Opecarcinus* (Kropp & Manning, 1987) (Brachyura: Cryptochiridae; see Kropp 1989) in a density of about 200 m⁻². This density was estimated by counting the density of the protuberances and the number of crabs per protuberance (Fig. 1b, c). Little detailed information is known about the ecology and host specificity of gall crab species (Kropp 1989; Carricart-Ganivet et al. 2004), which may be related to their cryptic lifestyle. Besides residing in coral, they also feed on the host's mucus (Kropp 1986). The present observation shows that the often overlooked gall crabs may form large aggregations in *Pavona*-dominated coral reef communities.

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