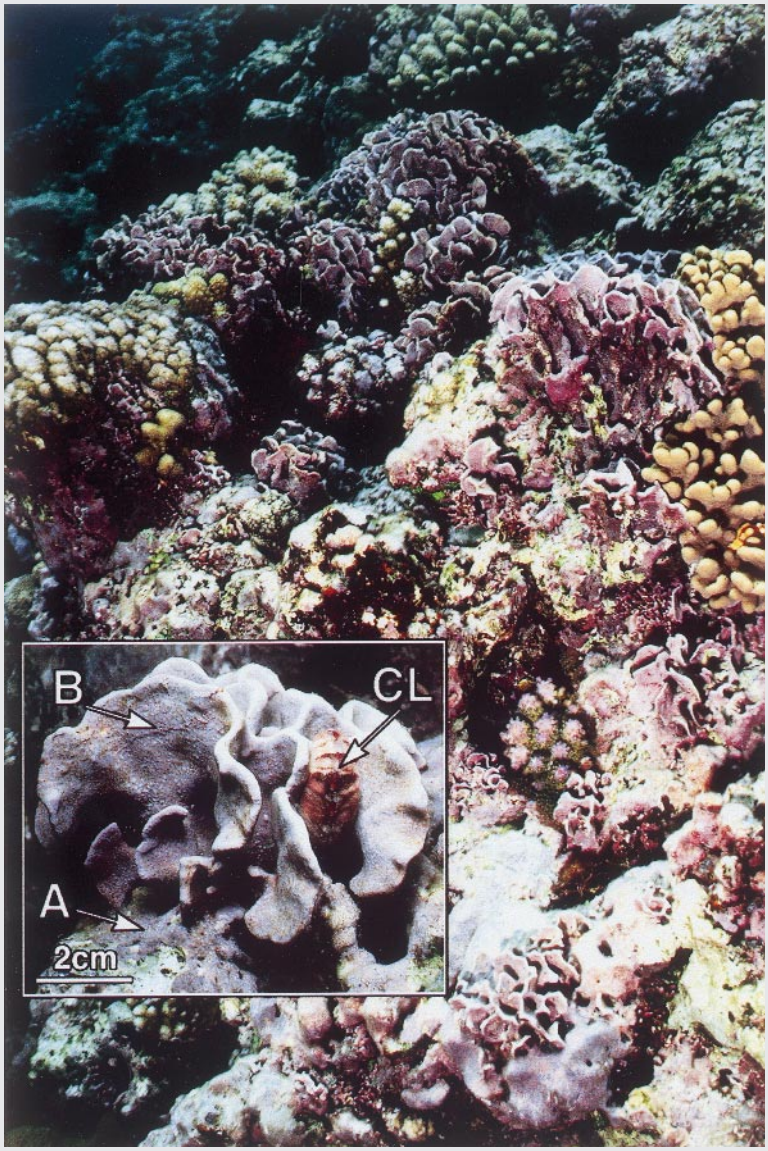

Castles built by a chiton from the Great Astrolabe Reef, Fiji

Castle-like, pink, coralline-algal structures occur abundantly above 20 m in depth on the outer Great Astrolabe Reef and throughout Fijian waters. The herbivorous chiton *Cryptoplax larvaeformis* (Tyron 1887) (Inset, CL), by its mode of radular scraping, alters the meristematic growth of its principal prey, the normally two-dimensional crustose-coralline alga *Porolithon (Hydrolithon) oncodes* (Heydrich) Foslie (Inset, A), to produce remarkable three-dimensional honeycombed heads (Inset, B). This phenomenon greatly increases the biomass, surface area and volume of the prey plant and, consequently, is unique in the marine realm.

Chitons have a long and notorious record for their negative impacts as erosive grazers in tropical coastal regions, where they contribute to substantial long-term shoreline degradation (reviewed by Rasmussen and Frankenberg 1990). However, we have observed at least three different chiton/coralline reef-building associations in the tropical Pacific, in addition to the mutualism previously documented (Littler et al. 1995) for the tropical Western Atlantic. Such associations, hypothetically, play a positive role in enhancing primary production as well as increasing structural carbonate accretion on coral reefs.

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