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ABSTRACTS

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A NATURAL LONG-TERM CORALLINE ALGAL REMOVAL EXPERIMENT. M.M. Littler and D.S. Littler. Dept. Bot., NMNH #166, Smithsonian Institution, Washington, D.C. 20560, USA.

Coralline algal populations on pristine Fijian fringing reefs contained zero coralline lethal orange disease (CLOD) during 1992. The bright-orange coralline-specific bacterial pathogen, which now extends over a 6,000 km geographical range, was present at all 50 study sites (100% frequency) in 1993 and doubled in cover at these same sites by 1994. In experimentally infected plots on Nacalevu Reef, Great Astrolabe Reef, CLOD infected coralline algae increased from trace amounts on 13 July 1993 to 27% cover on 29 July 1993, declining to 0.7% cover by June 1994 because the site no longer supported an abundance of reef-building coralline hosts. The results of reassessments in 1996 using permanent photo quadrats, on both Nacalevu Reef and Butukoro Reef, support the experimentally determined pattern of a phase shift from coral and coralline algal domination to overgrowths of fleshy and turf algal communities. We predict that this shift will result in a concomitant tendency away from net carbonate accretion toward net carbonate losses due primarily to biological erosion.

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