

Extraordinary mound building *Avrainvillea* (Chlorophyta): the largest tropical marine plants

Received: 22 May 2005 / Accepted: 17 June 2005 / Published online: 5 October 2005
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Fig. 1 Aerial view showing a mangrove island interior pond almost entirely filled by a large *Avrainvillea* colony



Fig. 2 Paddle-like blades of a large *Avrainvillea* colony



Fig. 3 Submerged view of two colony edges

We have discovered incredible mound-building colonial *Avrainvillea*, dominating the standing stocks and productivity of submerged habitats within Belizean mangrove island interior creeks, ponds, and lakes (Fig. 1). These colossal mound formers are restricted to shallow (< 3 m), placid, peat-bottom, nutrient-rich waters in the protected interiors of mangrove islands. Such colonial (possibly clonal) forms of the siphonaceous alga *Avrainvillea* (Fig. 2) are uniquely adapted to utilizing blade stipes as shallow subterranean rhizomes that spread laterally and fuse to produce enormous (2-m thick, >20-m diameter) mound-like colonies (Fig. 3). One of the smallest of these colonies, measuring 0.6x1.1 m diam., weighed 19 kg (spun wet weight). Our transects show *Avrainvillea* colonies exceeding 20 m in diameter, indicating that their individual biomass can be enormous.

Mangrove interior ponds, lakes, and creeks support such colonial growth forms of *Avrainvillea* by providing benign refuge habitats protected from physical disturbances (i.e., intense wave action and herbivory) that characterize the nearby coral reef systems (e.g., Littler and Littler 1999) and surrounding mangrove island outside perimeters (Taylor et al. 1986). Most importantly, these eutrophic interior habitats also ameliorate the water-column nutrient limitations (Lapointe et al. 1987) that frequently control biomass in other reef ecosystems.

Acknowledgments We sincerely thank Vicki Funk and Jim Nix for field assistance. Funding was provided by the Smithsonian Institution's Caribbean Coral Reef Ecosystem Program. CCRE Contr. No. 731 and Smithsonian Marine Station, SMSFP Contr. No. 621.

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