

**THE SECRET LIFE OF SHRIMPS:
THE FIRST ADVANCED SOCIETIES IN MARINE ANIMALS**

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The apex of animal social organization is eusociality, distinguished by the three criteria of overlapping generations, reproductive division of labor, and cooperative care of young. Eusociality characterizes the familiar social insects, and has otherwise been recognized only in the celebrated naked mole-rat. Here I describe recent research on Caribbean coral reefs confirming the first case of eusociality in a marine organism. The sponge-dwelling shrimp Synalpheus regalis lives in colonies of up to >300 individuals, each containing only a single reproductive female. Juveniles apparently do not disperse, remaining in the sponge where they are born, and genetic data suggest that most colony members are offspring of the "queen" and possibly a single male. In the laboratory, larger colony members, most of which will never breed, defended the colony against intruders of competing species. My collections, and published notes in taxonomic monographs, suggest that several other tropical snapping shrimps are eusocial as well. Striking ecological similarities among sponge-dwelling shrimps, naked mole-rats, and social insects strengthen arguments that a prime selective factor in the evolution of eusociality has been the advantages of cooperation in exploiting patchy, high-quality resources.