

Predator Suites and Flabellinid Nudibranch Nematocyst Complements in the Gulf of Maine

Kinsey Frick
Department of Zoology
University of New Hampshire
46 College Rd.
Durham, NH 03824
Kinseym@cisunix.unh.edu

Abstract

Nematocysts are a primary defense mechanism for combating predation in aeolid nudibranchs, and predator presence influences nematocyst uptake through nudibranch response to chemical cues from predators. However, the degree of predation pressure on individual nudibranchs within a population is not uniform across a species range, particularly for those that are widely distributed. Nematocyst selection in a given nudibranch species may differ latitudinally or based on predator suites at different collection locations. Given the geographic ranges of predatory species in the area and extreme changes in water temperature, nudibranch species are potentially exposed to different predator suites between northern and southern regions even within the relatively small Gulf of Maine.

I used subtidal band transects to assess predator suites in different regions within the Gulf of Maine and collected aeolid nudibranchs of the genus *Flabellina* from these sites to analyze nematocyst types conserved by the nudibranchs. Nudibranchs analyzed include both generalist and specialist predators with varying degrees of ability to respond to predator cues due to variation in the nematocysts available in their cnidarian prey sources. Predator suites between northern and southern regions were statistically independent, with differences in number, density, and presence of specific predators. Some collected nudibranch species showed correlative differences in their nematocyst complements. The degree of response depended on the feeding specificity of the nudibranch and associated limitations in available nematocysts. Nematocyst selection may relate to an inducible defense in response to the presence of predators.