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Imagining Biodiversity in the Sargasso Sea

Students seek to understand the role of hydroids within the Sargasso Sea ecosystem

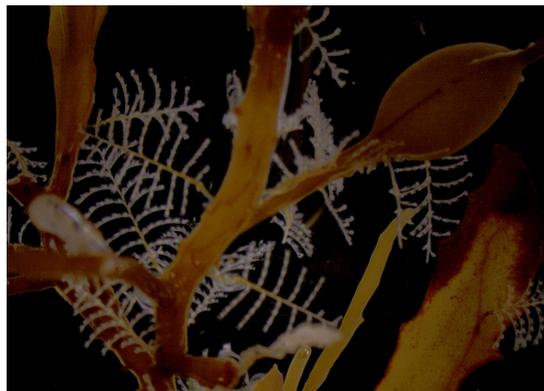
June 13, 2017, Woods Hole, MA — Members of SEA’s Marine Biodiversity and Conservation program have just returned from a month-long voyage sailing across the Atlantic, where they conducted research on hydroids found in the Sargasso Sea. After analyzing their data, the team found distinct subpopulations of the hydroid species *A. latecarinata* on the different *Sargassum* forms. The team also found evidence of a cryptic species within the *A. latecarinata* population found in the Sargasso Sea.

The team’s cruise track went from Nassau, Bahamas to New York City, with an eight-day port call in Bermuda. Over the course of the voyage through the Sargasso Sea, the scientists collected samples of the holopelagic algae *Sargassum* using a Neuston net tow twice a day, and dip nets deployed opportunistically.

The Sargasso Sea is a body of water located in the North Atlantic gyre, most notable for its floating mats of golden-brown *Sargassum*, a seaweed that spends its entire life cycle floating in the ocean. *Sargassum* supports many forms of life and provides the foundation for a highly productive ecosystem. It is so important that world renowned oceanographer, Sylvia Earle, characterized the Sargasso Sea as a “golden floating rainforest,” naming it the first of her “hope spots.” Though not well known by the general public, the Sargasso Sea is an unsung hero, providing invaluable habitat for many charismatic megafauna species such as sharks, whales, dolphins, and turtles, as well as smaller critters like crabs, fish, shrimp and eel larvae.



Researcher Grayson Huston deploying the Neuston net



A. latecarinata on Sargassum

Hydroids are one of the most diverse and common taxa associated with *Sargassum*. They have the appearance of tiny ferns attached to the floating blades of *Sargassum*, but appearances are misleading - these organisms are actually more closely related to humans than to plants. Hydroids fall under the phylum Cnidaria, grouped with jellyfish and coral amongst many others. They are filter feeders, using tiny filaments to collect their food as it floats past them through the water, as well as detritivores, recycling waste back into the food chain. Hydroids are a very understudied group, with little known about their role in the food chain or their preference for different seaweed substrates. When actions are taken to protect and conserve *Sargassum* ecosystems, it is important to understand these parts of the ecosystem so that it can be protected most effectively. As researcher Maggie Schulz stated, “with our work, we hope to fill in some critical gaps in our knowledge.”

Throughout the cruise track, the team collected a total of 14 different hydroid species, the most common of which were *Aglaophenia latecarinata* and *Obelia dichotoma*. While their morphological research took every hydroid species into consideration, their molecular work focused specifically on the species *A. latecarinata*. Researcher Megs Malpani said “*Sargassum fluitans III* appeared to have the greatest hydroid biodiversity compared to other *Sargassum* forms, indicating conditions habitable to a diverse range of organisms.” On the molecular side, the team believes they may have discovered a cryptic species, in addition to identifying two genetically distinct populations of *A. latecarinata* on *S. natans VIII* and *S. fluitans III*.

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