

# Nature Note: Findings from the Field:

## Middle School Journal

### *Dasysiphonia Japonica* Found on Norton's Ledge, Jonesport, Maine

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February 25, 2020

## Background Information

It is important to know that macroalgae are vital to our oceans for many reasons. They use energy from sunlight, carbon dioxide, and water to produce organic compounds, this is called photosynthesis. Macroalgae also breaks down pollutants, such as chemicals, heavy metals, and TNT.

For a better understanding of my research in The Gulf of Maine, you will need the information consisting, *Dasysiphonia*<sup>1</sup> *japonica*<sup>2</sup> is a non-native macroalgae originating from Europe and Asia. By looking under a microscope, you can more confidently confer that a red algae is *Dasysiphonia japonica*. Spiraled branches, pointed at the end of each branch, single cells in branches, and alternating branches, are ways you can identify this red algae. This invasive macroalgae is suffocating other macro

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<sup>1</sup> (Daisy-se-phone-ee-a)

<sup>2</sup> (juh-pon-i-kuh)

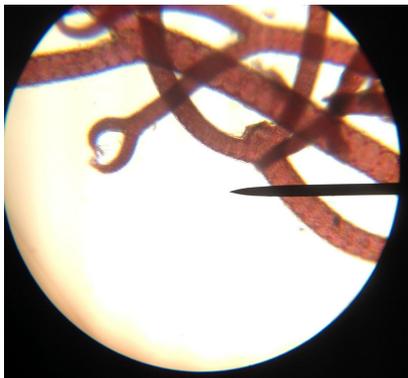
algae in Maine with the help of nutrient pollution. Microbial decay reduces available oxygen. Seaweed blooms are encouraged by excess nutrients in the coastal environment, (Green-Gavrielidis, 2019). This is harmful to our fish who will have to adapt to new habitats of kelp forests being overtaken with foreign red algae. Another concern is *Dasysiphonia* changing the biodiversity of our fish. For example, within 5 years of invasion, community composition had changed and biodiversity had decreased to almost half of pre-invasion levels, (Christine Ramsay-Newton, 2016). That is why we do not welcome this invasive red macro algae, *Dasysiphonia japonica*, it is monopolizing the macroalgae, therefore breaking the cycle that helps the balance of life in the ocean.

## Claim

I found *Dasysiphonia japonica* in a water sample from Norton's Ledge in Jonesport. Out of the fifteen people in my science class only one child and I believe we have found tiny pieces of *Dasysiphonia japonica* in a seaweed and water sample on Norton's Ledge, Jonesport, (44.5095, -67.6528). In my knowledge, this invasive algae has not been found or studied that far up Maine's East coast.

## Research Observations

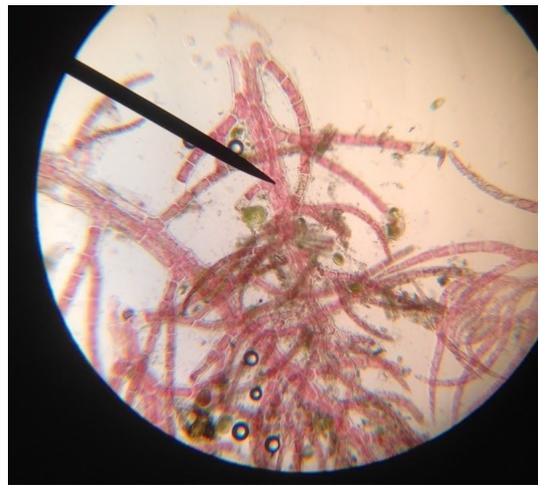
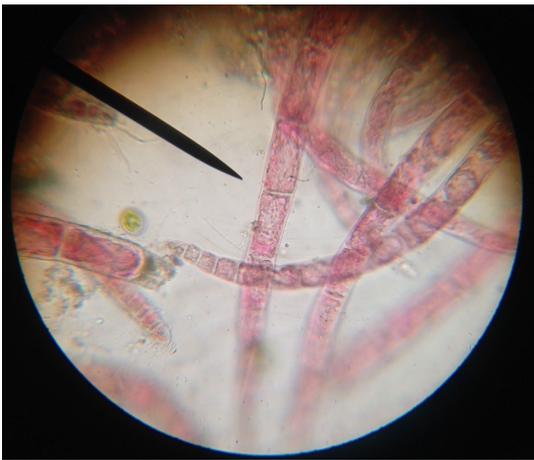
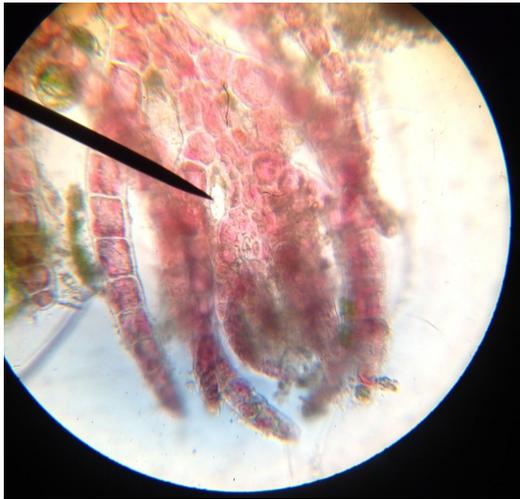
These are images of *Ceramium deslongchampsii*. You can tell by the hooked branches with smaller hooks on each end.



100x Microscope



400x Microscope



Starting from left to right the microscopic power of these images are 100x, 400x, 100x, 400x, 100x, 50x. I believe these photos I took are *Dasyaiphonia japonica* because of the single cell rows on each branch, the spiraled branches, the alternating branches, and the pointed ends. In the end I am left with only one question. Have any scientists found *Dasysiphonia japonica* near or on Norton's Ledge?

## References Cited

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- "Mixed-Phase Reproduction in *Dasysiphonia chejuensis* (Rhodophyta) from Korea." *Taylor & Francis*, [www.tandfonline.com/doi/abs/10.2216/i0031-8884-35-1-9.1](http://www.tandfonline.com/doi/abs/10.2216/i0031-8884-35-1-9.1).
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