Didemnum vexillum: a case study in the impact of an invader on native mussel populations

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Epibiosis is the overgrowth of one species by another species, and many aquatic invaders act as epibionts due to limited available space in marine and freshwater habitats. Such examples include the zebra mussel (*Dreissena polymorpha*), the lacy bryozoan (*Membranipora membranacea*), and a number of ascidian species, including the highly invasive carpet tunicate (*Didemnum vexillum*). The latter is a colonial ascidian that has invaded multiple coastal marine habitats worldwide. Originally from Japan, it has been transported to new locations via oyster culture and through hull fouling. I have examined the impact of epibiosis by *D. vexillum* on an important native species, the *Mytilus edulis* mussel in the Gulf of Maine. This initial study shows that epibiosis by the ascidian decreases mussel growth and reproduction, while also decreasing predation on the mussel by a common predator, the green crab *Carcinus maenas*[1, 2]. While the causes of decreased growth and reproduction are currently under investigation and not yet clear, the impacts on mussel physiology and interactions of the mussel with other species have major implications for both native species population growth and predator-prey dynamics.

References

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