Increasing temperature counteracts the impact of parasitism on periwinkle consumption -

**Increasing temperature counteracts the impact of parasitism on periwinkle consumption**

Parasites often have key structuring roles in natural communities. For instance, trematode infections significantly reduce consumption by the herbivorous gastropod *Littorina littorea*, in turn affecting the composition of coastal macroalgal communities on which the snail grazes. However, trematodes are extremely sensitive to temperature changes, in that production and release of infective stages (cercariae) from the snail host are strongly accelerated by increasing temperature. Hence, trematode-infected periwinkles may increase their rates of consumption under warmer conditions to support the additional energetic burden exerted through elevated cercarial shedding. We therefore hypothesized that the combined effect of higher temperatures and parasitism may neutralize the negative impact trematodes otherwise have on periwinkle consumption. To test this, we performed a microcosm experiment examining the combined effect of infection and temperature on the snails' consumption of the green macroalgae *Ulva lactuca*. Our results show an overall positive effect of temperature on consumption by larger periwinkles, but particularly so in trematode-infected specimens. Whereas infected snails consumed less than uninfected ones at 18 degrees C, no difference was evident at 21 degrees C. Hence, the synergy between parasitism and a relevant temperature increase, e.g. in lieu of expected global warming within this century (3 degrees C), may indeed counteract the generally negative impact of trematodes on periwinkle grazing.

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