Investigating Global Warming's Impact on the Metamorphosis of Painted Lady Butterflies

Medved, Owen (School: Mentor High School)

Climate change and global warming are ongoing issues that impact all ecosystems. They cause many environmental problems like acid rain, habitat degradation, and species range shifts. This can harm organisms, especially pollinators like butterflies. The research question asked: to what extent do increased temperatures affect the metamorphosis of Painted Lady Butterflies (Vanessa cardui)? The experiment involved three groups: one raised by 4°C above room temperature(group 1), one at 1°C above room temperature(group 2), and a control group at room temperature. Caterpillars were raised in their greenhouses with commercial caterpillar food. Measurements were taken twice weekly, tracking pupation, emergence, and sizes of head, thorax, abdomen, and wings. Through the experiment, it was found that there was a significant difference in group 1 and group 2 in comparison to the control group when looking at the time in the larval form, time in the chrysalis, size before metamorphosis, but not when looking at the size of the chrysalis or sizes of the butterflies after emergence. The next step in continuing experimentation would be to set up multiple generations in altered conditions to further research how global warming affects these organisms over a longer time.

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