Evolutionary physiology of temperature adaptation

For basically all organisms, temperature is a key environmental factor. A renewed interest in thermal biology has arisen because of the impact of climate change. Many aspects of an individual's morphology, physiology or behaviour change with thermal conditions, i.e. phenotypic plasticity. There are, however, large differences between individuals in thermal phenotypic plasticity that are mechanistically poorly understood. In this project we integrate the mechanistic and evolutionary perspective in studying the physiological basis of thermal phenotypic plasticity. We will look at changes in membrane properties due to changes in body temperature as a mechanism underlying thermal phenotypic plasticity in growth rate. The ultimate goal of elucidating the mechanism underlying difference in thermal plasticity is to predict functioning of individuals in the field, and the associated selection pressures. The main study organism will be the Collembolan Orchesella cincta.

Duration

4 years (December 2006-December 2010)

Participants

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