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How do butterflies compensate for a bad start in life and how does this influence adult life history?

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Gould Seminar Room Gould Building (Bldg. 116), Linnaeus Way, ANU



Organisms in the wild are constantly faced with a wide range of environmental variation, for example, in resource availability and thermal conditions. Understanding how individuals can cope with such variation is becoming increasingly important due to human induced phenomena, such as habitat fragmentation, habitat degradation and climate change. Experiencing stressful conditions during development can have great impact on resulting adult life history and individual fitness, for example, via changes in individual quality (e.g. immunity), growth trajectories and/or resource allocation patterns.

Such life history characteristics and resulting fitness consequences may not manifest only in the individual experiencing poor environmental conditions but also in its offspring via trans-generational effects. Even though responses to environmental stress are often negative, a growing number of studies are indicating that early experience of environmental stress may also yield individuals that are less sensitive to environmental stress later on in life. There seems to be also high levels of variation among individuals in their ability to cope with developmental stress.



In my presentation, I will discuss these issues by presenting some recent work on the Glanville fritillary butterfly. In Finland the butterfly exists only in the Åland Islands archipelago, where it has a classic metapopulation structure. In this system, variation in environmental conditions among habitat patches is one of the main forces causing high levels of local population turnover.

Presented by

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