

## EUROPEAN EXPERTISE IN RESEARCH ON THERMAL ADAPTATION

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General scope of the group's research: various aspects of insect ecology.

Topics & Questions: life history evolution (body size, growth patterns, egg production, oviposition behaviour); with an emphasis on an attempt to distinguish between adaptation and constraint.

Organisms: various spp of Lepidoptera (organism-level experimental work), and other insects (reviews);

Methods & Expertise: laboratory and field experiments to measure various fitness-related traits in lepidopterans. We are offering a possibility to test your ideas on a high number of species through a collaboration. Connections to groups working on phylogenetics of Lepidoptera. Good knowledge of taxonomy and biology of Lepidoptera, reasonable competence in statistics, some experience with simulation modelling.

Methods & Expertise sought: Looking for cooperation with experts on insect physiology and developmental biology. In particular, an idea is looking for invariants of insect development: i.e. features that all insects have in common, including responses to different temperatures. Such invariants may indicate the presence of constraints that are not subjected to adaptive evolution. Cooperation is sought to elucidate the proximate nature of such putative constraints.

### 3-5 Sample publications:

Teder, T. & Tammaru, T. 2005. Sexual size dimorphism within species increases with body size in insects. - *Oikos*, 108: 321-334.

Tammaru, T., Nylin, S., Ruohomäki, K. & Gotthard, K. 2004. Compensatory responses in lepidopteran larvae: a test of growth rate maximisation. - *Oikos*, 107: 352-362.

Esperk, T. & Tammaru, T. 2004. Does the "investment principle" model explain moulting strategies in Lepidopteran larvae? - *Physiological Entomology*, 29: 56-66.

Javoiš, J. & Tammaru, T. 2004. Reproductive decisions are sensitive to cues of life expectancy: the case of a moth. - *Animal Behaviour*, 68: 249-255.

Tammaru, T., Esperk, T. & Castellanos, I. 2002. No evidence for costs of being large in females of *Orgyia* spp. (Lepidoptera, Lymantriidae): larger is always better. - *Oecologia*, 133: 430-438.