- What is the relationship of ectoparasitic loads and distributions within mated pairs?
- Can ectoparasites be considered to play a role in mate-choice and mating success?

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Dispersionsverhalten alpiner *Erebia* (Nymphalidae) Schmetterlinge:Was macht eine Habitatsgrenze aus?

Dispersal behavior of alpine *Erebia* (Nymphalidae) butterflies:What constitutes a habitat barrier?

D. POLIC, K. FIEDLER & A. GRILL

Dispersal is a crucial feature for the preservation of butterfly metapopulations, which can be affected by habitat fragmentation. Habitat fragmentation might be more destructive to butterfly populations in an alpine habitat as opposed to lowland conditions. Each individual that leaves the habitat and enters the matrix takes a risk. The harsh climatic conditions and frequent and sudden on sets of bad weather in an alpine environment may further increase the mortality during dispersal events. Therefore, even winged organisms, like butterflies, are often extremely sedentary and spend their whole lifetime in a relatively small area. Dispersal processes through the matrix start with the indivual's behaviour at the habitat borders. Borders of different structure might promote different behavioural responses, i.e. "low-contrast" edges might be more permeable than "high-contrast" edges.

We analysed the dispersal behaviour of seven alpine *Erebia* species in an anthropogenically and naturally fragmented habitat in the Hohe Tauern National Park in Austria. In order to find out which landscape elements constitute a barrier for movement for these relatively sedentary butterflies, we observed the butterflies' flight behaviour at the edge of their natural habitats, alpine mountain meadows. We analysed different landscape features that bordered meadows, such as dwarf shrub heaths, scree areas, tree groups and the Großglockner Hochalpenstraße – a highly frequented alpine road which cuts through the mountain meadows. To find out if there is an interspecific difference in the flight behaviour we analysed seven different *Erebia* species.

Our data indicates that the road seems to be a major barrier for dispersal. Further, butterflies seem to be more likely to cross low-contrast edges such as dwarf shrubs rather than high-

contrast edges such as tree groups. We found a difference in the edge behaviour between the *Erebia* species: *Erebia gorge* was more likely to cross scree areas than all the other analysed species and *Erebia euryale* was more likely to cross tree groups.

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Verteidigungsstrategien bei Pflanzenläusen

Aphid Defence Strategies

D. REINECKE & M. HARTBAUER

Aphids are a basic food resource for many Arthropods and therefore live with the constant threat of being eaten. To avoid predation aphid colonies have developed different defence strategies which can either be employed separately or in combination with one another. Studying strategies such as mimicry, the protection through ants and other (more active) behaviours are part of my PhD.

In a comparative study we investigate which tactics are employed by which species and what combinations are observable. Our main focus is on collective defence reactions within colonies and how they evolved. Between 2012 and 2013, samples were collected in Austria and Scotland. Supplementary data, such as the aphids' behaviour in the field as well as additional environmental factors (e.g. temperature, presence of predators and host plant location) were recorded. COI Barcoding is used to identify species. In addition to this, two nuclear genes and two mitochondrial genes are sequenced to create a phylogenetic tree and to establish the evolution of collective defence behaviours.