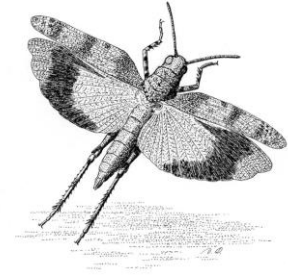


Forschungsförderung der DGfO

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Gefördertes Projekt:

Gene flow at two different stages of speciation in *Pseudochorthippus parallelus*

Abstract

Speciation can be defined as the evolution of reproductive isolation, during which behavioural, ecological, or genetic incompatibilities accumulate over time. The accumulation of these incompatibilities eventually inhibits gene flow between the two emerging species, but it is unclear how quickly this happens during the continuum of speciation. Moreover, while hybrid sterility is often seen between forming species, it is unclear whether such incompatibility can cause genome wide barriers to gene flow, completing speciation. Here, I examine the strength of gene flow between populations of *Pseudochorthippus parallelus* at two different stages of speciation, and whether it is symmetric or asymmetric. The meadow grasshopper, *P. parallelus*, is divided into two distinct subspecies, *P. p. erythropus* in the Iberian Peninsula and *P. p. parallelus* in the rest of Europe, which hybridise in the Pyrenees. Two less divergent populations of *P. p. parallelus* hybridise across the Alps. In both hybrid zones, first-generation male hybrids exhibit sterility while their sibling females are fertile, potentially leading to gene flow between diverging populations and reverse the differentiation. Demographic approaches will allow me to assess if gene flow is more restricted at later stages of speciation and whether it is directionally biased. These results will offer insights on how quickly gene flow can be restricted during speciation, and whether hybrid male sterility actually represents a final stage of the speciation process.