Evolution of eye and head size and shape between Drosophila novamexicana and Drosophila americana - additional support for Europe

Initiative: Evolutionsbiologie (beendet)

Ausschreibung: Postdoktorandenförderung

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One central aim of biological research is to understand the evolution of the breath-taking diversity of body form. Changes in embryonic and postembryonic developmental programs are responsible for the diversification of morphology on which evolution can act and evolutionary-developmental biology (evo-devo) aims to reveal the developmental basis for this variation. The insect head is a complex structure that facilitates basic tasks like interaction with its environment and feeding. According to these fundamental functions, a huge variety of head shapes and especially compound eye morphologies have evolved as adaptation to different ecological niches. In order to learn more about the genetic architecture of variation in head morphology, we want to analyze the molecular basis of natural variation in compound eye and head size and shape within and between species of the Drosophila virilis group of fruit flies. First, geometric morphometrics approaches will be used to identify heritable changes in head size and shape. Then, the developmental stage at which the observed differences in adult morphology first arise, will be identified. And finally, quantitative genetics and genomics methods will be used to identify the genomic loci, which are linked to the observed morphological changes.

Projektbeteiligte

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