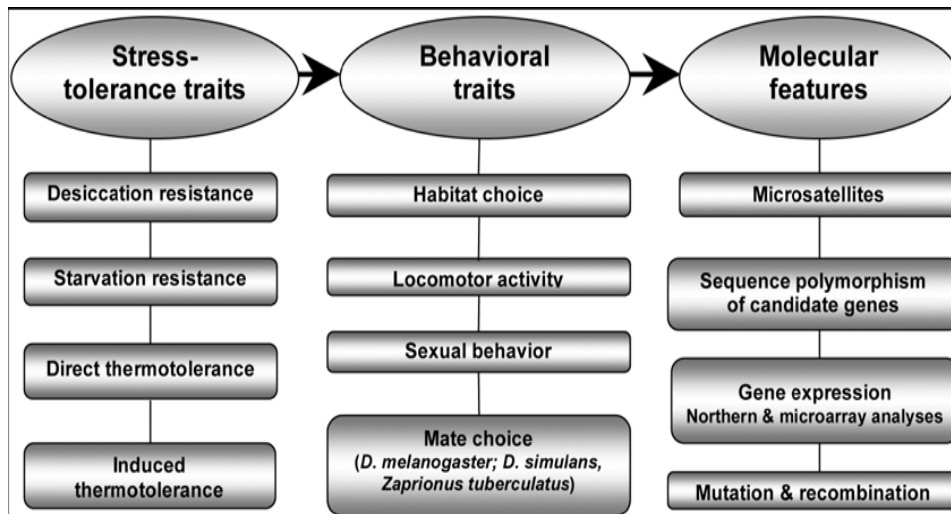


SYMPATRIC DIFFERENTIATION OF DROSOPHILA POPULATIONS in the Nahal Oren canyon

Populations on the slopes, separated by 100 and 400 m at the bottom and top, respectively, must cope with noticeably different environments due to the higher insolation on the south-facing slope (SFS) than on the north-facing slope (NFS) and differences in temperature, humidity and photoperiodicity.

Interslope migration of flies is easy and verified. Nevertheless, we found significant differences between *D. melanogaster* populations from the opposite slopes involving habitat choice, as well as various aspects of induced changes in viability and longevity caused by short-term and lifetime high-temperature treatments. The most exciting findings were related to sexual behavior. The revealed differentiation takes place regardless of gene flow.

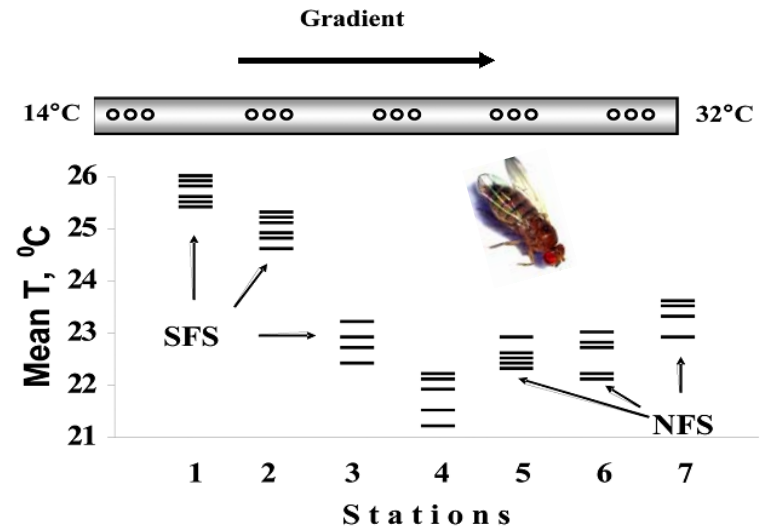
Interslope comparisons



Differentiation in the preferred oviposition temperature of flies, raised over 1.5 years in standard lab conditions, indicates the existence of a genetic basis of behavioral adaptation to the microclimatic slope-specific environments.

Habitat choice

Despite high interslope migration, the SFS and NFS populations cannot be considered panmictic.



In a large-scale laboratory experiment, including ~50,000 flies, we found that flies originating from the opposite slopes displayed clear differences in habitat preferences, including a higher mean temperature preferred by females derived from the SFS, and an increase in the preferred laying temperatures with increased elevation.