QTL mapping of multiple traits in inter-continental crosses of a model insect

Drosophila melanogaster from Denmark and Australia were previously selected for low and high resistance to high temperature, respectively. These flies were crossed to construct recombinant inbred lines (RIL). These RIL can now be used to study the genetic basis of thermotolerance across continents as well as to QTL-map multiple traits such as acclimation and resistance to UV-B radiation that could differ between the Southern and Northern hemispheres. QTL maps generated from this new set of RIL can be compared to QTL maps previously published by other workers from intra-continental RIL for this model insect. This system is also useful to identify interesting traits that show transgressive segregation. If thermotolerance QTL show any constancy in both chromosomal distribution and effects across hemispheres, evolutionary responses to climate changes are expected to be consistent rather than un-predictable across conspecific populations.