

Small-scale genetic structuring in a tropical cave snail and admixture with its above-ground sister species

Abstract

We analyse the phylogeographical structure in the cave snail *Georissa filiasaulae* Haase & Schilthuizen, 2007 (Gastropoda: Hydrocenidae) and its above-ground sister species *G.saulae* (van Benthem-Jutting, 1966) at limestone outcrops in Sabah, Malaysian Borneo. Morphometric and 16S mitochondrial DNA data for some 220 individuals reveal strong morphological differentiation, despite ongoing unidirectional gene flow from the epigean into the hypogean environment, strong, small-scale genetic structuring within the cave and underground dispersal between caves that were previously thought to be isolated. We discuss these results - which constitute the first phylogeographical analysis of a terrestrial cave snail - in the light of speciation in cave organisms and across ecotones in general.