

Poster Abstract

Species delimitation in an Austrian endemic land snail: The case of *Trochulus oreinos* (Gastropoda: Pulmonata: Hygromiidae)

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The hygromiid *Trochulus oreinos** is an Austrian endemic land snail species occurring in the Northeastern Calcareous Alps at elevations above timber line. Two subspecies have been distinguished: The westerly distributed subspecies *T. o. scheerpeltzi*, is characterized by a groove beneath the shell keel, whereas the easterly distributed *T. o. oreinos* features an additional penial fold. Genetic analyses of the nuclear marker sequence *ITS2* (*internal transcribed spacer 2*) as well as mitochondrial marker sequences (*cytochrome c oxidase subunit 1 gene (COI)*, *16S rRNA gene*, *12S rRNA gene*) indicated a high genetic divergence between the two taxa. Analyzing an extended sample set from the potential contact zone, the Haller Mauern mountain range, a clear geographic break was found. Samples of all western sites were part of the clade representing *T. o. scheerpeltzi* and almost all samples from the Natterriegel sites eastwards clustered with *T. o. oreinos*. However, at the two sampling sites near the Natterriegel, one of the mountain peaks in the Haller Mauern, a few individuals possessed a *COI* sequence matching the *T. o. oreinos* clade, whereas at the *ITS2* locus they were heterozygous possessing the alleles of both taxa. Based on these results suggesting historical and/or ongoing hybridization, no decision could be made on whether to consider the two taxa as separate species. Therefore, in a next step, the amount of gene flow between the two subspecies of *T. oreinos* within the Haller Mauern contact zone was investigated using Amplified Fragment Length Polymorphisms (AFLPs), a DNA fingerprinting technique. We investigated 200 individuals including samples from the whole distribution range. The AFLP results confirmed a clear separation of the two taxa, congruent with the mitochondrial data. Although they occur on the same mountain range, no indication of ongoing gene flow between the two taxa was found.

* In the recently published revision of the family Hygromiidae, NEIBER et al. (2017) suggested the genus name *Noricella* for *T. oreinos*.

Literature

NEIBER M. T., RAZKIN O. & HAUSDORF B., 2017: Molecular phylogeny and biogeography of the land snail family Hygromiidae (Gastropoda: Helicoidea). Molecular phylogenetics and evolution 111, 169–184.

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