

Monophyly, candidate species and vicariance in *Biomphalaria* snails (Mollusca: Planorbidae) from the Southern Andean Altiplano

Collado, Gonzalo A.

Vila, Irma

Méndez, Marco A.

The landscape of the Neotropical southern Andean Altiplano is characterized by a succession of closed basins originated from the Miocene to the Holocene. In this region, the number of species and phylogenetic relationships among freshwater snails of the genus *Biomphalaria* are uncertain. Here we obtained sequences of the mitochondrial gene cytochrome oxidase subunit I from 17 Altiplano populations, including topotypes of three nominal species, which were analyzed together with published sequences of the genus using different methods of phylogenetic reconstruction and a species of *Helisoma* as outgroup. The Altiplano populations conform a monophyletic group whose sister group is the Neotropical species *Biomphalaria peregrina*. Within this clade we recovered four main lineages well supported and congruent with geographical distributions. One clade includes topotypes restricted exclusively to the Ascotán basin, the type locality of the nominal species *Biomphalaria crequii*. A second clade inc