

THE EVOLUTION OF DEXTRALITY WITHIN A SINISTRAL LAND-SNAIL GENUS

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Almost all *Albinaria* species coil sinistrally. The only dextral forms can be found restricted in southern Peloponnisos (Lakonia and Messinia), and according to their morphology they form a single species (*Albinaria voithii*). However, since phylogenetic studies are lacking it is not clear if all dextral forms constitute a monophyletic group and if dextrality has evolved once or it is the result of parallel evolution. Moreover, often dextral populations occur sympatrically with sinistral ones and it is interesting to examine whether dextrality has evolved as a means to reduce gene flow and the production of unfitted hybrids. We used 65 specimens from 14 localities in Peloponnisos. In 3 sites there were sympatric dextral and sinistral *Albinaria* populations, in 6 were sinistral and in 5 only dextral were found. Initially two mitochondrial markers (COI & 16S) were used and all phylogenetic analyses (Maximum Parsimony, Maximum Likelihood, Bayesian Inference) produced the same tree topology with 3 dextral and 3 sinistral clades with unresolved relationships among them. In order to define the relationship between those clades we additionally used a nuclear marker (ITS1). The analyses of the combined dataset produced a tree with 3 clades. The first clade consisted of dextral and sinistral populations, while the second and the third clade consisted of sinistral and dextral populations respectively. These results support that dextrality has evolved independently at least twice and that the evolution of dextrality is an old event since currently sympatric dextral and sinistral populations are not found to be close relatives.