

## **The ecology of shell shape difference in chirally dimorphic snails**

### **Abstract**

The Southeast-Asian tree snail subgenus *Amphidromus* s. str. (Gastropoda Pulmonata: Camaenidae) is unusual among all gastropods for its genetic antisymmetry: populations consist of stable mixtures of individuals with clockwise (dextral) and counterclockwise (sinistral) coiling directions. Although previous studies in *A. inversus* suggest that this genetic dimorphism is maintained by sexual selection, it cannot be ruled out that environmental factors also play a role. Adult shell shapes in *A. inversus* are known to show subtle differences between both coiling morphs, and it is known that in snails in general, shell shape is under environmental selection, thus creating the possibility that micro-niche use of both coiling morphs differs. In this paper, we first confirm that hatchlings also differ in shell shape. We then proceed with field studies to compare dextral and sinistral juveniles and adults for (i) direction and rate of dispersal within the vegetation and (ii) micro-niche occupation. However, we failed to detect any difference in both ecological traits. In addition to earlier data that show that there is no clustering of morphs in the field and that both morphs suffer identical predation pressure, these new data do not provide any evidence for a role for environmental factors in maintaining the coil dimorphism in this species.