Differentiation of the high altitude malacofauna in Greece

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Greece is characterized by its numerous islands in the Aegean but also the hundreds of mountain peaks that exceed 2000m a.s.l. in the mainland as well as in the island of Crete. The thermomediterranean type of climate that is characteristic for the Greek lowland in contrast to the subalpine and alpine climate of the mountain peaks and the geographical isolation create a continental archipelago of ecological islands.

We studied the malacofauna of numerous mountain peaks from the north (Falakro Mt., Rodopi) to the southeast (Dikti Mt., Crete). From the ecological and biogeographical analysis of the malacofauna we found that historic reasons and Pleistocene paleoclimatic events are mostly responsible for the present malacofauna. As a rule in the south it is characterized by endemic taxa that are nowadays differentiated in the lowland. On the other hand in the north the influence of the Central and Northern European taxa is obvious.

Activity patterns of two helicid snail species in the Swiss Jura mountains

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Year-round activity patterns of the two grassland snail species *Helicella itala* and *Candidula unifasciata* were assessed at three different sites in the Swiss Jura mountains at weekly intervals from October 1993 to October 1994.

The three sites differed in the proportions of *C. unifasciata* and *H. itala*. *H. itala* was present at all three sites, whereas living individuals of *C. unifasciata* were only observed at two sites. At these two sites, *C. unifasciata* was the dominant snail species.

The two species differed significantly in their seasonal activity patterns. The main activity season of *H. itala* was in spring (February to May), whereas *C. unifasciata* was most active in autumn (from the end of August to the beginning of October). On a particular day, the activity of both snail species was positively correlated with the amount of rain in the two preceeding days.

In *H. itala*, small and large individuals differed in their seasonal activity patterns. The highest proportion of small individuals was recorded between June and Mid-August.

The temporal distribution of dead animals (empty shells) differed significantly between the two species. The mortality rate of *H. itala* was highest during the relatively short period in autumn and winter, whereas *C. unifasciata* had equal proportions of dead individuals year-round. In *H. itala*, the diameter of empty shells showed a bimodal frequency distribution throughout the year. However, the highest proportion of small, dead snails was found in spring.