2) Abstracts

Shell-morphometrical characterization of populations of *Arianta arbustorum* (L.) (Gastropoda, Helicidae) in the Ennstaler Alpen (Styria, Austria)

Helmut Baminger

Because of the highly variable shellshape within the species *Arianta arbustorum* (LINNAEUS, 1758) numerous subspecies have been described. These descriptions frequently are based on few specimens. Determinations, however, based on a typological species concept are problematic - an alternative approach is the investigation of populations.

Seven shell characters (shell height, shell breadth, height-breadth-ratio, degree of umbilication, umbilical width, number of whorls, and intensity of the brown band) of 28 populations of *Arianta arbustorum* from the Ennstaler Alpen (Styria, Austria) were measured or estimated. As an result, grouping (= classification) of populations by means of sun ray diagrams is possible. Some populations, however, cannot be assigned to a certain group free of doubt. Similarity analyses (UPGMA and minimum spanning tree) reveal four clusters (= groups): (1) high altitude group, (2) *Arianta arbustorum* „*styriaca*" group, (3) valley group and (4) alpine pasture group. The character analysis (PCA) shows that height-breadth-ratio, degree of umbilication, shell height, and umbilical width represent a major part of total variance. Pairwise comparisons of the characters by their confidence intervalls frequently reveal significant differences between the populations for the characters of shell height, shell breadth, height-breadth-ratio, and degree of umbilication. In particular, the height-breadth-ratio is a most suitable tool for rough distinctions of *Arianta* - populations. The different groups seem to be characteristic for certain ranges in altitude and certain habitats. As a consequence, the populations of the high altitude group, the valley group and the alpine pasture group are considered as eco-morphological units. The populations of the *Arianta arbustorum* „*styriaca*" group are assumed to be members of a geographical subspecies. The results show that the populations can be discriminated and a grouping (= classification) is possible, though with restrictions.

Reproductive isolation between two morphs of *Arianta arbustorum*

Gabriele Baumgartner

Courtship and copulation experiments with two „morphs" of *Arianta arbustorum* were carried out. Juvenile snails of Arianta arbustorum arbustorum from Klosterneuburg, near Vienna (A) and juvenile snails of Arianta arbustorum styriaca from the Gesäuse mountains, Styria (B) were kept isolated until maturity. From end of April until end of June 1995 virgin snails were put together pairwise to following groups: A x A, B x B, A x B. Mating behaviour was timed and recorded. For statistical analyses mating behaviour was subdivided into five phases, beginning from contact by chance (1) to copulation (5).

Significant differences were found between different groups concerning the duration of the courtship behaviour.