

## Shell polymorphism and intraspecific variation of *Cylindrus obtusus* (DRAPARNAUD, 1805)

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*Cylindrus obtusus* (DRAPARNAUD, 1805) is a high spiral helicid snail. It is an endemic inhabitant of the top regions of the Eastern Alps. *Cylindrus obtusus* prefers altitudes more than 1500m and does not live in the down regions. As a consequence the species is an inhabitant of disjunct sites. So most of the local populations can be regarded as genetically isolated groups. Their isolation is believed to endure since the glacial epoch.

It is obvious, that long times of isolation give a chance of differentiation processes, resulting in local accumulations of special features and significant characters, especially of the shells and their measures. Former workers (ADENSAMER 1937, 1962; BOETTGER 1949) made an attempt to give reasons for the evolution of the shell form of *Cylindrus obtusus*. ADENSAMER (1937) presented a typical variation of shell height and shell width within various local samples, coming from various areas, and also significant differences of average height and average width between the samples.

New researches were done on samples from Schneeberg, Rax, Schneealm, Gippel, Ötscher and Gesäuse. To gain a better understanding of shell variability and to take account of eventually affecting ecological factors, various samples were taken at localities at different altitudes at the Ötscher.

In addition to the shell height and the shell width also the height and the width of the last two whorls, the height and width of the aperture, the angle of the spindle axis and the line between the two upper points of the lip of the aperture, the length of this line and the number of whorls were measured. The resulting values were examined with regard to the question, if they can give us additional facilities to discern the samples morphologically.

Comparisons of various measures disclosed impressive metrical divergences and a high morphological variation of the members of local samples. Remarkable correlations between some values could be shown. In addition, various samples differ significantly by the averages values of measures. As a consequence, morphological differences of the samples are evident. The differences between samples of various altitudes of the Ötscher region are not remarkable.

By these results a corroboration of ADENSAMER's (1937) suggestions is given partially. They give rise to the question whether a characterisation of *Cylindrus obtusus* as a polytypic species can be justified.

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