

Abstract

Mountain environment plays an important role in plant's life. Extreme conditions lead to continuous speciation accompanied by a complex processes e.g. geographical isolation (variation) or polyploidization. These processes can be studied by using a suitable model plant, represented in this thesis by selected mountain endemic bellflowers species belonging to *Campanula rotundifolia* agg. These species appear to be morphologically very similar but they are supposed to be of different origin.

Mountain ecosystem is considered to be one of the most diverse and the most valuable environment for nature conservation. It hosts many endangered plants as well as plants protected by law. From the model group, these plants are represented by *Campanula bohemica* Hruby, *Campanula gelida* Kovanda and *Campanula rotundifolia* subsp. *sudetica* (Hruby) Soó.

This thesis aims to sum up the up the current knowledge about a high altitude environment and endemism and to give a description of speciation mechanisms leading to the variability of mountain *Campanula* species. Further descriptions of their endangerment level, conservation and origin are also given.

The subsequent MSc Thesis, introduced in the last part of this thesis, aims to reveal the origin of Czech and Slovakian mountain *Campanula* endemics. It is mainly focused on cytotype and morphological differentiation of *Campanula tatrae* Borbás by using modern biosystematic tools (flow cytometry, multivariate morphometrics) and a cultivation experiment.

Key words: speciation, endemism, high altitude environment, mountain flora, *Campanula*