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# The occurrence of arctic-alpine elements within high - mountain plant communities in relation to enviromental factors, functional types and phytogeography

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This contribution serves a view on processing of phytosociological relevés together with phytogeographical, functional and ecological data, paying particular attention to phytogeographical elements in the flora of Western Carpathians, life forms of individual taxa and Ellenberg's indicator values. We used selected high-mountain plant communities of Western Carpathians with abundant arctic-alpine species as excellent model system. On the other hand, this contribution handles with the distribution of arctic-alpine taxa within Western Carpathians and their abundance in individual vegetation types.

We worked with more than 43 thousand phytosociological samples taken from Slovak National Vegetation Database. Fourteen alliances (from the classes *Asplenietea trichomanis*, *Caricetea curvulae*, *Carici rupestris-Kobresietea bellardii*, *Elyno-Seslerietea*, *Loiseleurio-Vaccinietea*, *Montio-Cardaminetea*, *Mulgedio-Aconitetea*, *Salicetea herbaceae* and *Thlaspietea rotundifolii*) were compared with respect to abundance of chorological elements, species richness, environmental factors and species composition.

The abundance of arctic-alpine species was significantly correlated not only with the European high-mountain element, but also with the occurrence of Carpathian or Western Carpathian endemic taxa. The island phenomenon of the highest mountains gave rise not only to formation of refuge for relic taxa, but on the other hand, according to plasticity of individual taxa, the same habitats also provided suitable conditions for speciation and hence became the centre of endemism.