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### Diversity and classification of mountain grasslands of the alliance *Polygono-Trisetion* in Slovak Republic.

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The mountain meadows of the alliance *Polygono-Trisetion* in the Slovak part of the Western Carpathians are distributed at altitudes 600–1500 m a.s.l. Meadows with diagnostic species of these alliance *Geranium sylvaticum*, *Crepis mollis*, *Phyteuma spicatum*, *Crocus discolor*, *Cardaminopsis halleri*, *Pimpinella major*, *Lilium bulbiferum*, *Primula elatior*, *Senecio subalpinus*, *Heracleum sphondylium*, *Knautia maxima*, *Trisetum flavescens*, *Vicia sepium*, *Campanula serrata*, *Alchemilla vulgaris* s. lat., *Hypericum maculatum*, *Cruciata glabra*, *Campanula glomerata* agg., *Rhinanthus pulcher* and dominant species *Alchemilla vulgaris* s. lat., *Geranium sylvaticum*, *Agrostis capillaris*, *Trisetum flavescens*, *Festuca rubra* agg., *Trifolium pratense*, *Hypericum maculatum* occur mainly as small islands over calcareous bedrocks (Starohorské vrchy Mts, Veľká Fatra Mts, Belianske Tatry Mts, Nízke Tatry Mts, Slovenský raj Mts, Muránska planina Mts, Spišská Magura Mts, Levočské vrchy Mts, Poľana, Bukovské vrchy) at wetter and colder sites of saddles and slopes with mainly northern aspect, rarely on the non-carbonate substratum. Associations of these alliance have tight relationships to the alliances *Arrhenatherion*, *Bromion erecti* and *Nardo-Agrostion*.

Phytocoenological material was analyzed by cluster analysis processed by the program PC-ORD 4 where Ward's linkage method and the relative Euclidean distance as a resemblance measure were applied. Optimal number of clusters was determined by Crispness method. Diagnostic taxa for the individual clusters were determined by calculating the constancy and fidelity measure of each species to each cluster, using the *phi* coefficient of association in the program Juice. The CANOCO 4.5 package was used for running indirect gradient analyses. Detrended correspondent analysis (DCA) defined major gradients in the spatial arrangement of species of the analysed data set. Average Ellenberg indication values for relevés were plotted onto a DCA ordination diagram as supplementary environmental data. For identification of syntaxa was used also electronic expert system. Syntaxa were formally defined and characterized by diagnostic, constant and dominant species, ecology and distribution. Based on the analysis four associations can be recognized: *Campanulo glomeratae-Geranium sylvatici* Ružičková 2002, *Geranium sylvatici-Trisetum* Kapp ex Oberd. 1957, *Crepido mollis-Agrostietum capillaris* Ružičková 2004, *Geranium-Alchemilletum crinitae* Hadač et al. 1969. Some syntaxonomical problems also were also discussed.