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The genus *Hieracium* s.str. in the Carpathians – once more to the question of apomictic ‘microspecies’

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The Carpathians are extremely rich in montane *Hieracium* taxa. The richest areas are situated in the highest parts of the Western Carpathians (Slovakia, S Poland) and in the south part of the arc (the Retezat Mts.). Systematic studies on selected species groups have revealed important differences between the Western and Eastern Carpathians. Presently, diploid sexual species are most likely completely absent in the Western Carpathians; in the Eastern Carpathians, besides apomicts, sexual species occur. While many triploid and most probably obligate agamospermous taxa have been found in the Western Carpathians, in the eastern part, triploids are extremely rare, and most of the agamospermous taxa are pollen-bearing tetraploids. Consequently, recent gene exchange between sexual diploids as well as between pollen-bearing tetraploid apomicts and sexual diploids (or their hybrids) in the Eastern Carpathians is highly expected (experimental studies are now in progress, experimental crosses between *H. alpinum* and *H. transsilvanicum* resulting in progeny morphologically similar to *H. krasani* have been performed). Isozyme patterns revealed higher genetic variation of Eastern Carpathian tetraploid apomicts compared to apomicts from the Western Carpathians (considerably high genetic variation was only found in *H. alpinum* s.str.). Low genetic variation of selected taxa was also confirmed by RAPD analysis.

Recent processes of differentiation and consequently patterns of morphological variation in the Eastern Carpathians cause serious problems in taxonomic treatment. In contrast, fixed and often clearly separated agamospermous taxa in the Western Carpathians can be evaluated at the species level.