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Offspring diversity in *Hieracium* subgen. *Pilosella*: new cytotypes obtained from hybridisation experiments

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We studied within-species patterns of *Hieracium* subg. *Pilosella* occurring in the Krkonoše Mts. (Riesengebirge), a range with high diversity of different types. They differ in ploidy level and reproductive systems. To understand their morphological patterns found in the field, a series of experimental crosses was carried out, in which the following species of the *Hieracium* subgen. *Pilosella* were used as parents: diploid *H. lactucella* and tetraploid *H. pilosella* (both sexuals, used predominantly as seed parents), tetraploid *H. caespitosum*, tetraploid *H. aurantiacum*, pentaploid *H. glomeratum* and pentaploid *H. piloselliflorum* (all at least facultative apomicts, used predominantly as pollen donors). The chromosome numbers within the F_1 progeny of crosses were examined. In addition, the karyological diversity in the offspring of some of the selected open pollinated F_1 hybrids was studied, as well as in the F_1 progeny of open pollinated hexaploid hybridogenous species *H. rubrum*. Some of the individual hybrid seed parents hybridised easily when being open pollinated, which led to considerable karyological diversity within their progeny: it is indicative for their (at least) facultative sexuality. Furthermore, both the haploid parthenogenesis and the fertilisation of the unreduced egg cell contributed to offspring diversity. These phenomena were especially manifested in *H. rubrum*. The haploid parthenogenesis in an aneuploid hybrid individual obtained from experimental cross was recorded as a new observation. There is a discrepancy between the rare occurrence of aneuploids in nature in Europe and the abundant viable aneuploid progeny that can be easily obtained from experimental crosses. A similar case concerns triploids: their sparse occurrence in the field is in contrast to the common rise of viable triploids from the crosses between diploids and tetraploids. The reasons for these disproportions are discussed, expecting the reduced competitive ability of polyhaploids in the field, but, on the other hand, the more common participation of unreduced egg cells in the origin of natural polyploids.