

TAXONOMIC AND NOMENCLATURAL NOTES ON *HIERACIUM SILESIACUM* (ASTERACEAE)

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Abstract: Lectotypes for the names *Hieracium silesiacum* E. Krause and *H. sparsum* Friv. subsp. *silesiacum* (E. Krause) Zahn var. *vaiskovae* Lengyel & Zahn are designated and illustrated. Based on morphological characteristics, both were found to belong to the same species, of which *H. silesiacum* is the correct name. The distribution of *H. silesiacum* is provided and the hypothetical origin of *Hieracium* sect. *Cernua* in the Western Carpathians and Eastern Sudetes is briefly discussed.

Key words: Asteraceae, *Hieracium* sect. *Cernua*, lectotypification, new synonym, nomenclature, taxonomy, distribution, Eastern Sudetes, Western Carpathians

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INTRODUCTION

Hieracium silesiacum E. Krause was described from the Hrubý Jeseník Mts [Hohes Gesenke] in the Eastern Sudetes (Krause 1851). It is still the only representative in the Sudetes Mts of the Balkan-Caucasian *H.* sect. *Cernua* R. Uechtr., as redefined by Szelaĝ (2003). Its stations in the Hrubý Jeseník Mts are among the northernmost for the whole section (Bräutigam 1992).

In the 19th century and the first half of the 20th century it was collected in following localities: Velká Kotlina valley [Velký Kotel valley, Grosser Kessel], Mt. Vysoká Hole [Hohe Heide], Mt. Praded [Altwater], Mt. Malý Děd [Leiterberg], Mt. Mravenečník [Ameisenhügel], between Mt. Malý Klín and Mt. Kamzík [Hungerlehne], and from a slope above Domašov village [Tomašov, Thomasdorf]. The species has also been distributed in five exsiccata series: A. Kerner, Fl. Exs. Austro-Hung. no. 201; H. Callier, Fl. Siles. Exs. ed. 1893; Magnier, Fl. Selecta Exs. no. 3308C; H. Zahn, Hieraciotheca Europaea no. 398; and Behr, Herb. Hieraciorum no. 150. According to Fiek & Uechtritz (1881), Formánek (1887), and Oborny (1885, 1906), *H. silesiacum* was abundant only on Mt. Praded, near the springs of the river Opava, while at its other localities it was fairly

scarce. Skřivanek (1956) enumerated three stations only: Velký Kotel valley, Mt. Vysoká Hole, and Mt. Praded at the springs of the Opava. Intensive collecting of the plant for herbaria is perhaps to be blamed for the disappearance of its other previous localities. Nowadays, *H. silesiacum* is a critically endangered species in the Czech Republic (Chrtěk jun. 2002). In 2003, Jindřich Chrtěk jun. and I observed not more than 50 individuals of the species in the Velká Kotlina valley.

The situation of *Hieracium silesiacum* in the Western Carpathians is less disquieting. It was first found there in 1888 by Josef Freyn, in the Západné Tatry Mts (cf. Sagorski & Schneider 1891), and his specimens (not seen by either Schneider or Sagorski) are still extant in the herbarium of the Natural History Museum in Brno (BRNM). It now has around twenty known populations in the Vysoké Tatry Mts, the Západné Tatry Mts and the Nízke Tatry Mts, most of which have been found recently (Chrtěk jun. *et al.* 2002, 2004).

In Poland, *Hieracium silesiacum* was observed only once (no specimens collected), on 21 Aug. 1968 in the Dolina Tomanowa valley in the West Tatra Mts [Tatry Zachodnie Mts] close to the Slovak-Polish border (Pawłowska & Pawłowski

1970). In spite of a thorough search, its occurrence there could not be confirmed, and I failed to locate any further stations of the species in the Polish part of the Tatra Mts.

Hieracium silesiacum was found to be tetraploid, with a chromosome number of $2n = 36$ counted on plants from the Eastern Sudetes (Chrtek jun. 1996) and Western Carpathians (Chrtek jun. *et al.* 2004).

Hieracium silesiacum E. Krause (Fig. 1)

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≡ *H. sparsum* subsp. *silesiacum* (E. Krause) Zahn in Engler, Das Pflanzenreich **79**: 1026. 1922. – INDICATIO LOCOTYPICA: ‘Diese Form beobachtete ich zuerst im Jahre 1846 im Gesenke am zwei Stellen, an der Hungerlehne und im Kessel. [...] Anfang August dieses Jahres [1850] gelang es mir in Gesellschaft des Director Wimmer, diese Form blühend in Kessel wieder aufzufinden’. – LECTOTYPE (designated here): Kessel im Gesenke, Jul. 1846, E. Krause (ex herb. Krause; WRSL) (Fig. 1). – ICONOGRAPHY: Murr *et al.* (1904–1906).

= *H. sparsum* subsp. *silesiacum* var. *vaiskovae* Lengyel & Zahn, Magyar Bot. Lapok **31**: 31. 1932, *syn. nov.* – INDICATIO LOCOTYPICA: ‘Zólyom: Vaiskova-Tal bei Alsólehota, Lengyel’ [north Slovakia: Vajskovská dolina valley near Dolná Lehota, leg. G. Lengyel]. – LECTOTYPE (designated here): Comit. Zólyom: in valle Vaiskova ad Alsólehotam, 5. Aug. 1929, G. Lengyel (BP 351927) (Fig. 2).

NOTES. *Hieracium sparsum* subsp. *silesiacum* var. *vaiskovae* was described based on a single collection with one blooming and two barren individuals (Fig. 2). Lengyel and Zahn (1932) distinguish it from *H. sparsum* subsp. *silesiacum* proper by its long, minutely denticulate and densely hairy leaves. However, comparison of the original sheet of var. *vaiskovae* with abundant material of *H. silesiacum* from its whole range (Fig. 3), as well as live plants in the wild and in the garden, show that these features fall within the variability of *H. silesiacum* and do not warrant recognition of a distinct taxon. Leaf hairiness changes in the course of ontogeny (the lower stem leaves are most densely hairy, but are missing at anthesis); and the size of leaf teeth varies according to the environment – plants transplanted

to the garden have much longer teeth than those in the wild; similarly, long leaves are characteristic of plants growing in tall grass. When searching the Vajskovská dolina valley in 2003, I found no plants matching the description of *H. sparsum* subsp. *silesiacum* var. *vaiskovae*.

REMARKS ON THE ORIGIN OF *HIERACIUM SILESIAECUM*

On the basis of geographical and karyological data, as well as the morphological resemblance of *Hieracium silesiacum* to the other representatives of *H.* sect. *Cernua*, the following hypotheses may be formulated, pending further phylogenetic analyses and molecular studies now in progress:

1. *Hieracium* sect. *Cernua* in the Western Carpathians and Eastern Sudetes, as well as in the Eastern Alps and Southeastern Carpathians, presumably occurs as a relic going back to a diploid, perhaps pre-Pleistocene sexual species with a wider primary range. This might be either *H. sparsum* Friv., presently occurring in the central part of the Balkan Peninsula, or a closely related, now extinct taxon.

2. The relict range of *H. silesiacum* may be explained by its persistence in glacial refugia in the southern foothills of the Western Carpathians. Colonization of the Eastern Sudetes might then have followed from there. The existence of local glacial refugia in the Eastern Sudetes themselves cannot be ruled out, but seems less probable, as one would expect that long-lasting isolation of the Carpathian and Sudetes populations would have resulted in clear morphological and perhaps karyological differences.

3. The lack of such differences between the populations of the Sudetes and Carpathians suggests a monotypic origin of *H. silesiacum*, and its subsequent expansion into the Western Carpathians (Vysoké-, Západné- and Nízke Tatry Mts) and Eastern Sudetes (Hrubý Jeseník Mts). This would have happened no later than at the end of the last glaciation (Würm), when proper conditions obtained for contact and exchange of the mountain floras of the Carpathians and Sudetes (e.g., Lang 1994).

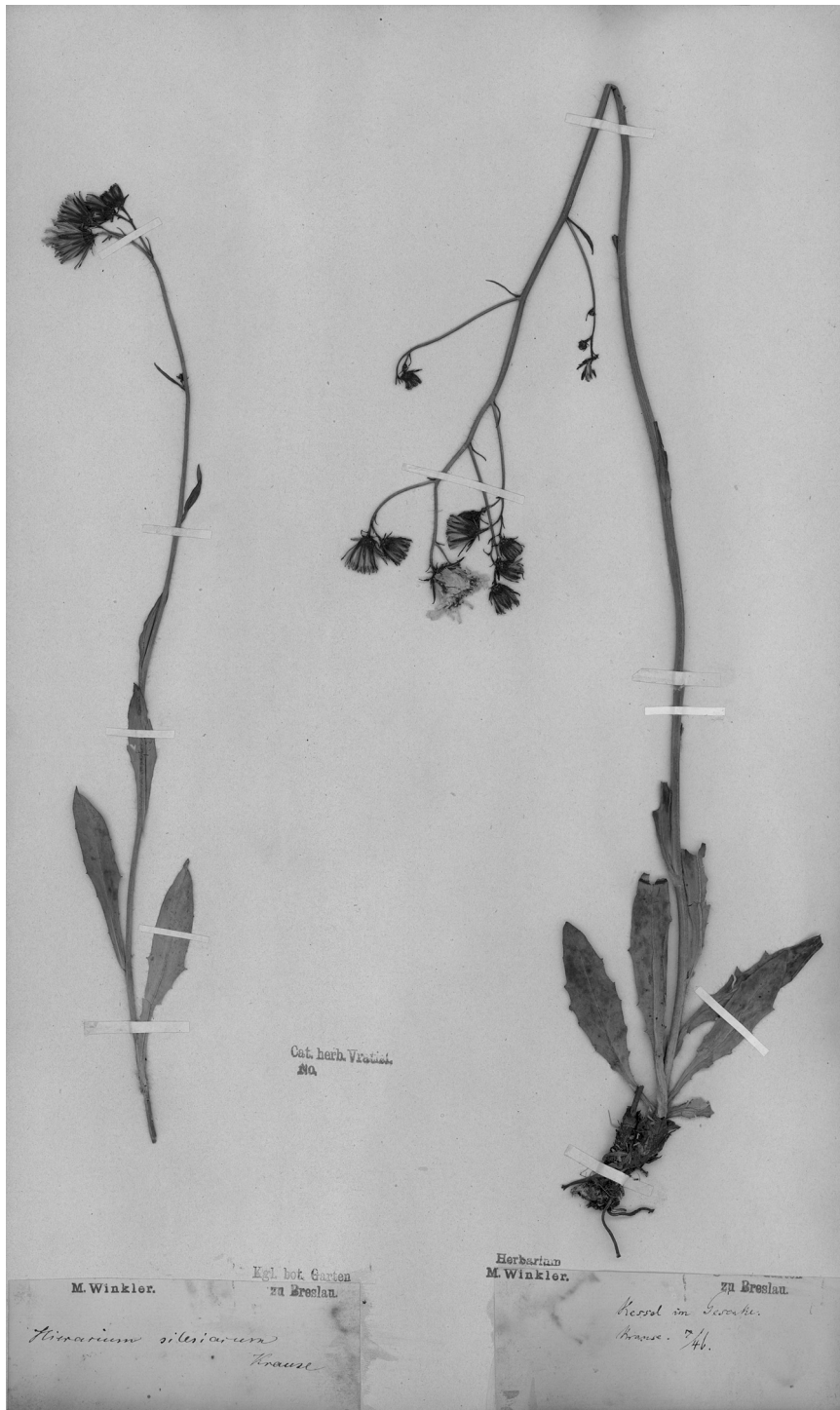


Fig. 1. Lectotype of *Hieracium silesiacum* E. Krause (E. Krause, WRSL).



Fig. 2. Lectotype of *Hieracium sparsum* subsp. *silesiacum* var. *vaiskovae* Lengyel & Zahn (G. Lengyel, BP 351927).

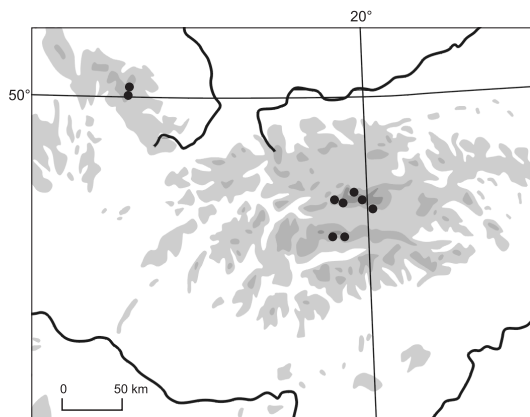


Fig. 3. Distribution of *Hieracium silesiacum* E. Krause.

SPECIMENS EXAMINED. CZECH REPUBLIC. EASTERN SUDETES. Großer Kessel im Gesenke, c. 1400 m, Aug. 1908, *A. Oborny* (C. H. Zahn Hieraciotheca Europaea no. 398, WSRL); Gr. Kessel im Gesenke, 20. Aug. 1908, *A. Oborny* (LI 88730); Silesia: Gr. Kessel im Gesenke, 15 Aug. 1882, *A. Oborny* (ex herb. F. Pax, WRSL); Oberer Rand des Kessels, 26 Sep. 1888, *R. Fritze* (WSRL); Gesenke, Kessel, Aug. 1906, *E. R. Missbach* (KRAM 148720, 148721, LI 1912/73); Hohes Gesenke, oberer Rand des grossen Kessels, 1200–1400 m s. m., *J. Freyn* & *A. Oborny* (Fl. Exs. Austro-Hung. no. 201, WSRL; BP 446610, 446611; CL 34804, 123115; KRAM 148722; LI 231398 & s.n.); Maehr. Gesenke, am Altvater, c. 1300 m, 21. Aug. 1893, *H. Callier*, *Hirte* & *C. Scholz* (H. Callier Fl. Siles. Exs. Ed. 1893, ex herb. W. Wagner, WRSL; CL 34803, 146830; BP 446606, 446607); Oberer Rand des Grossen Kessels 1200–1400 m s. m., Aug. 1884, *J. Bubela* (ex herb. W. Wagner, WRSL; BP 446612, 446616); Kessel im Gesenke, s.d., *E. Fiek* (ex herb. F. Pax, WRSL); Kessel im Gesenke, Aug. 1874, *E. Fiek* (ex herb. R. Uechtritz, WRSL); Gesenke, Kessel, 18 Aug. 1879, *M. Winkler* (ex herb. M. Winkler; WRSL – two sheets); Kessel im Gesenke, Aug. 1873, *M. Winkler* (CL 45288); Gr. Kessel des Gesenkes, 3 Aug. 1905, *W. Conrad* (LI 89395); Am oberen Rand des großen Kessels im Gesenke, 20. Aug. 1874, *E. Fiek* (ex herb. E. Fiek; WRSL); Gesenke, Kessel, 18 Aug. 1849, *M. Winkler* (BRNM 22251/36); Hohes Gesenke, Gr. Kessel. 1300 m, 12 Aug. 1878, *J. Freyn* (BRNM 22256/36 – two sheets); Hohes Gesenkes, Gr. Kessel, 1220 m, 10 Aug. 1878, *J. Freyn* (BRNM 22255/36); Grosser Kessel, 1300 m, 12 Aug. 1878, *J. Freyn* (BRNM 22254/36); Gesenke, Hochtritt des Hohen Heide (Obere Gränze) gegen den Schwarzhübel, 1400 m, 3 Sep. 1883, *J. Freyn* (BRNM

22253/36); Gesenke, fruchtbare Tritten des Grossen Kessels gegen die Hohe Heide 1350 m, 29 Aug. 1883, *J. Freyn* (BRNM 22252/36 – two sheets); Kessel im Gesenke, Aug. 1876, *R. Fritze* (BRNM 22250/36); Hohes Gesenke, oberer Rand des grossen Kessels, 1200–1400 m, *J. Freyn* & *A. Oborny* (BRNM 22249/36; Fl. Exs. Aust.-Hung. No. 201); Kleiner Vaterberg im Gesenke, 8 Aug. 1900, *A. Oborny* (BRNM 22248/36); Gr. Kessel im Gesenke 8. Aug. 1900, *A. Oborny* (BRNM 22247/36); Gr. Kessel im Gesenke, 1 Sep. 1903, *A. Oborny* (BRNM 22246/36); Grosser Kessel des Hochgesenkes (BRNM 22245/36); Gr. Kessel, 15 Aug. 1876, *A. Oborny* (BRNM 22244/36); Gr. Kessel im Gesenke, 15 Aug. 1877, *A. Oborny* (LI 166483); Gr. Kessel im Gesenke Jun. 1908, *H. Laus* (BRNM 22243/36); Gr. Kessel im Gesenke, Aug. 1909, *H. Laus* (BP 446614); Gr. Kessel im Gesenke, Aug. 1908, *H. Laus* (LI s.n.); Altvatergebirge, Hohe Heide 1400 m, Aug. 1935, *H. Laus* (BP 446618); Velká Kotlina v Jeseníku, 20 Aug. 1884, *E. Formánek* (BRNM 22240/36, 22241/36, 22242/36); Vysoký Jeseník, Velká Kotlina pod Pradědem, 1200 m, 23 Jul. 1950, *H. Zavřel* (BRNM 255183); Vysoký Jeseník, Velká Kotlina pod Pradědem, 1000 m, 23 Jul. 1950, *H. Zavřel* (BRNM 255195); Jeseníky, Velká Kotlina, 3 Aug. 1946, *V. Skřivánek* (BRNM s.n.); Jeseníky, Velká Kotlina, 3 Aug. 1946, *V. Skřivánek* (BRNM 255139); Velká Kotlina v Jeseníku, Aug. 1937, *J. Otruba* (BRNM 255190); Jeseníky, Praděd k prameni Opavice, 3 Aug. 1946, *V. Skřivánek* (BRNM 19270); Gesenke, Altvater 1490 m, 16 Aug. 1925, *Teuber* (BRNM 66577); Jeseníky, Vysoká Hole, 5 Aug. 1953, *V. Skřivánek* (BRNM s.n.); Jeseníky, ad rivulum Opa, 3 Aug. 1946, *V. Skřivánek* (BRNM 255192, 255185); Jeseníky, Vysoká Hole, 5 Aug. 1953, *V. Skřivánek* (BRNM 255193); Jeseníky, Vysoká Hole, 4 Aug. 1953, *V. Skřivánek* (BRNM 399659); Jeseníky, Velká Kotlina, 4 Aug. 1953, *V. Skřivánek* (BRNM 255194); Jeseníky, na horním okraji Vel. Kotliny, 3 Aug. 1946, *V. Skřivánek* (BRNM 399658); Jeseníky, Velká Kotlina, 3 Aug. 1946, *V. Skřivánek* (BRNM 255187, 255191); Jeseníky, Praděd, 3 Aug. 1946, *V. Skřivánek* (BRNM s.n. – three sheets); Im Grossen Kessel des Hohes Gesenkes, Aug. 1889, *W. Müller* (BRNM 255186); Jeseníky, Vysoké Hole 1400 m, 15 Aug. 1962, *F. Černoč* (BRNM 516951). – SLOVAKIA. WESTERN CARPATHIANS, ZÁPADNÉ TATRY MTS: Ungarn, Hohe Tatra, Rasenplätze zwischen Krumholz am Tycha-Pass, einzeln unter viel *H. pseudalbinum*, *H. aurantiacum*, *H. alpinum*, *Campanula scheuchzeri*, *Dianthus wimmeri*, *Vaccinium myrtilus* etc., Rotte Schiefer 1670 m, 22 Aug. 1888, *J. Freyn* (BRNM 8576/36); Tatra Liptoviensis. In valle supreme Spolani potok, alt. ca 1400–1500 m, granit,

10 Aug. 1924 *E. I. Nyárady* (BP 193530); Liptovské Hole, Velký vrch, 1400 m, 1924, *F. Švestka* (BRNM 8575/36); Polesi Tichá, Liptovské Hole, Križné, 1562 m, 1 Aug. 1966, *J. Horák* (SAV); Mt. Brestová-Predný Slatín, Spálený žľab, 1350 m, 7 Jul. 2000, *M. Severa* (PRA); Roháčska dolina, 1330 m, 28 Jul. 1998, *J. Chrtek jun.* (PRA); Between the saddle of Zábrať and Ťatliakovo jazero mountain lake, ca 1500 m, 28 Jul. 1998, *J. Chrtek jun.* (PRA); NÍZKE TATRY MTS: Mt. Lajštroch, "Rovienki" 1550 m, 28 Jul. 1999, *J. Chrtek jun.* (PRA); Mezi Lajštrochem a Králičkami, ca 1700 m, 8 Aug. 1966, *J. Dvořák* (BRA); Mt. Pánska hoľa, 1630 m, 14 Jul. 2001, *J. Chrtek jun. et al.* (PRA); Inter cotas 1927 [m] (Krúpova hoľa) et 1778 [m], 18 Aug. 1958, *J. Soják* (PR); VYSOKÉ TATRY MTS: Na južnej rázsoche Kriváňa, ca 1 km E od kóty Jamy, 16 Aug. 2001, *P. Mráz & V. Mrázová* (Herb. P. Mráz).

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