Taxonomic revision of *Hieracium nigrescens* agg. in the Western Carpathians

Taxonomická revize skupiny *Hieracium nigrescens* v Západních Karpatech

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A taxonomic concept for the *Hieracium nigrescens* agg. (*H. alpinum* ≥ *H. murorum*) in the Western Carpathians is proposed. Three taxa at the species level are recognized, i.e. *Hieracium jarzabczynum, H. mlinicae* and *H. vapenicanum.* One new combination, *Hieracium mlinicae* (Hruby et Zahn) Chrtek f. et Mráz (*H. nigrescens* subsp. *mlinicae* Hruby et Zahn) is published. All taxa should be considered as endemic to the Western Carpathians (both the Polish and Slovakian parts). Detailed descriptions, drawings, lists of localities, distribution maps and determination key are provided along with a comparison with the last comprehensive account of the group (by Zahn 1936). Several lectotypes were chosen for the taxa recognized by Zahn within *H. nigrescens* s.l.

K e y w o r d s : agamospermy, Carpathians, chorology, Compositae, *Hieracium*, Poland, Slovakia, taxonomy

Introduction

The genus *Hieracium* L. (s.str., *Hieracium* subgen. *Hieracium*) belongs to one of the most taxonomically intricate groups of vascular plants. It comprises an immense agamic complex with prevailing tri- and tetraploid agamosperms. Sexually reproducing diploids are very rare and are supposed to be confined to certain geographic areas (e.g. Merxmüller 1975, Chrtek et al. 2004).

Two kinds of species in the broad sense (= species groups) are traditionally distinguished: (1) basic species (species principales, Hauptarten) having a unique set of morphological characters, and (2) intermediate species (species intermediae, Nebenarten, Zwischenarten) sharing morphologically intermediate position between two or more basic species (Nägeli & Peter 1885, Zahn 1921–1923).

The *Hieracium nigrescens* agg. (*H. nigrescens* s.l.) belongs to the latter category. It occupies, together with the *H. atratum* agg., an intermediate position between the *H. alpinum* agg. and the *H. murorum* agg. (species in the broad sense). In comparison with *H. atratum*, it is more closely related to *H. alpinum* which is reflected by the formula *H. alpinum* ≥ *H. murorum* (*H. atratum* = *H. alpinum* – *H. murorum*). It includes rather small plants with basal rosettes of leaves, usually unbranched stems with (0–) 1–5 (–6)

more or less petiolate leaves, and 2–4 (–10) heads. Plants are as a rule more or less densely hairy (whitish simple eglandular hairs); important characters common for the whole group are short simple eglandular hairs at the apex of ligules and minute glandular hairs on leaf margins. They are typically found in subalpine and alpine grasslands, open canopy dwarf-pine stands, rocky knolls and ledges in gullies, and on cliffs. Total distribution area of the group includes Greenland, Iceland, British Isles, and through Scandinavian mountains it extends to NW Russia; in central Europe it has a discontinuous distribution being found in the Alps, the highest Sudeten Mts, and in the Carpathians, an isolated population occurs in the Harz Mts (Germany) (cf. Zahn 1921–1923, Hultén & Fries 1986, map incomplete).

The taxonomy of the group reflects different approaches to the infrageneric classification in *Hieracium*. While in the Central European mountains morphologically recognizable units were evaluated at the rank of subspecies (partly except of the Sudeten Mts, Zlatník 1938; Chrtek 1995, 2004), many 'microspecies' have been described from Scandinavia, British Isles and NW Russia (e.g. Elfstrand 1893, 1894; Norrlin 1912, Omang 1928, Pugsley 1948, Üksip 1960). Zahn (1921–1923), who attempted to transfer most of 'microspecies' to the rank of subspecies, distinguished more than 150 subspecies of *H. nigrescens* s.l. in his world-wide monographic study; four of them were given for the Western Carpathians. Later on, Zahn (1936) recognized 11 subspecies (three of them invalidly described) in this territory. Since that time, no taxonomic treatment dealing with *H. nigrescens* s.l. in the Western Carpathians has appeared.

Recent morphometric and allozyme analyses have provided new taxonomic insights, which have led to the recognition of two species in the Western Carpathians, namely *H. jarzabczynum* (Pawł. et Zahn) Mráz et Chrtek f. and *H. vapenicanum* (Lengyel et Zahn) Chrtek f. et Mráz (Chrtek et al. 2007). Apart from morphology, these species differ from each other in their multilocus allozyme genotypes. On the other hand, no genetic variation has been found in accessions of one of the species (Chrtek et al. 2007). With respect to chromosome numbers and breeding behavior, these species are either triploid (*H. vapenicanum*), or tetraploid (*H. jarzabczynum*) agamosperms (Chrtek et al. 2007). Recently, new species (*H. mlinicae*) was recognized in the Western Carpathians (see this paper).

In this paper, a taxonomic account of the *H. nigrescens* group in the Western Carpathians is proposed, based on a set of above mentioned experimental data, and examination of abundant herbarium material and living accessions. Detailed morphological descriptions and distributional data are provided for each species. In the last part, a detailed comparison with Zahn's (1936) treatment of *Hieracium nigrescens* s.l. is provided.

Material, methods and arrangement of data

The material came from our excursions to the Western Carpathians in 1995–2005. The following herbaria have also been consulted to complete our studies: B, BP, BRA, KRAM, PR, PRA, PRC, SAV, SLO, TNP, W, WRSL and WU (acronyms according to Holmgren et al. 1990) and the herbarium of the Nízke Tatry National Park (NAPANT, Banská Bystrica, Slovakia) and herbarium collection of Z. Szeląg (Kraków, Poland).

In morphological descriptions of *Hieracium jarzabczynum* and *H. vapenicanum* (quantitative characters) the 5% and 95% percentiles are accompanied with 1% and 99% percentiles in brackets (based on morphometric analysis, Chrtek et al. 2007).

The phytogeographic division of Slovakia follows Futák (1984). Original orthography of topographic names is mostly kept; if necessary, recently used orthography is given in square brackets. The number after each locality indicates the code of the Central European grid mapping project (Niklfeld 1971).

Taxonomic treatment

Key for the species of the Hieracium nigrescens agg. in the Western Carpathians

1a Lowest stem leaf broadly lanceolate to elliptical-lanceolate, more than 2 cm wide, in the lower half with at least two distinct at least 11 mm long patent teeth (measured as a straight line along the midrib); leaf margins with only a few minute yellowish glandular hairs; plants with at least 4 heads (total number, incl. heads on branches) .....3. ***H. mlinicae***

1b Lowest stem leaf (narrowly) oblong elliptical, (narrowly) oblong lanceolate, elliptical or oblanceolate, less than 2 cm wide, entire or with usually falcate at most 10 mm long teeth; leaf margins with scattered minute yellowish glandular hairs; heads 1–3 (–5) 2

2a Styles yellow (with yellow scales), outer ligules 9.7–15.7 mm long; involucral bracts linear, the medium ones 0.7–0.9 mm wide; inner basal leaves oblong elliptical, lanceolate to oblanceolate (the longest leaf 0.7–1.3 cm wide), attenuate into a petiole, subentire, denticulate to (towards the base) shallowly dentate (rarely with few larger teeth), teeth triangular to narrowly triangular, the longest tooth 0.1–3.0 mm long, petioles always entire; plants always one-headed, stems in the upper part with 3–8 bract-like leaves; simple eglandular hairs on peduncles 1.0–1.8 mm long .....2. ***H. vapenicanum***

2b Styles dark olivaceous with black scales, outer ligules 16.3–22.0 mm long, involucral bracts linear lanceolate, the medium ones 1.4–1.8 mm wide; inner basal leaves (broadly) elliptical, oblong-obovate to oblanceolate (the longest leaf 1.6–3.0 cm wide), cuneate at the base, markedly petiolate, in the lower half usually deeply dentate, teeth triangular to narrowly triangular, the longest tooth 1.7–9 mm long, sometimes leaves with 1 to few narrowly triangular curved teeth on the petiole; plants with 1–3 heads, upper part of stems with 1–4 bract-like leaves, simple eglandular hairs on peduncles 1.9–3.1 mm long ..... 1. ***H. jarzabczynum***

1. *Hieracium jarzabczynum* (Pawł. et Zahn) Mráz et Chrtek f. (Fig. 1)

H. jarzabczynum (Pawł. et Zahn) Mráz et Chrtek f., Bot. J. Linn. Soc. 153 [accepted for publication], 2007.

≡ *Hieracium pietroszense* subsp. *jarzabczynum* ["*jarząbczynum*"] Pawł. et Zahn in Zahn, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math., Ser. B, Sci. Nat. 1928: 210, 1929.
Ind. loc.: "Tatra occident.: Infra montem Jarząbczy Wierch versus vallem Jarząbcza, in rupibus graniticis".
Lectotypus (Mráz 2003: 316): [Poland] West-Tatra: Unterhalb des Jarząbczy Wierch gegen das Jarząbcza Tal. Granitfelsen, 10. VIII. 1922, leg. B. Pawłowski, KRAM no. 396119.
– *Hieracium nigrescens* subsp. *nigrescens* auct. (p.p.), non Willd.: e.g. Zahn in Engler Pflanzenreich 77(IV/280): 664, 1921; Zahn in Graebner f. Syn. Mitteleurop. Fl. XII/3, Lief. 2: 174–175, 1936 (ut *H. nigrescens* subsp. *eu-nigrescens*).
– *Hieracium nigrescens* subsp. *decipiens* auct. (p.p.), non (Tausch) Čelak.: e.g. Zahn in Engler Pflanzenreich 77(IV/280): 641, 1921; Zahn in Graebner f. Syn. Mitteleurop. Fl. XII/3, Lief. 2: 163–164, 1936 (ut *H. nigrescens* subsp. *eu-decipiens* a. [var.] *genuinum* Zahn, nom. inval.).
Icones: Jasiewicz, Fl. Pol. XIV, Fig. 12/2, p. 243, 1980.

Description: Phyllopodous. Stem (17.0–) 18.5–32.5 (–38.5) cm long, single-headed or with 1–2 (–4) single-headed erect branches, slightly striate, with scattered to numerous pale (towards the top of stem shortly dark-based) 2–4 mm long simple eglandular hairs and numerous stellate hairs throughout, and with a few to scattered glandular hairs above. Leaves with scattered 1.0–2.5 mm (on the petioles to 5 mm) long pale simple eglandular hairs (sometimes nearly glabrous above) [0–10 (–19) hairs/0.5 cm^2 of the upper leaf sur-

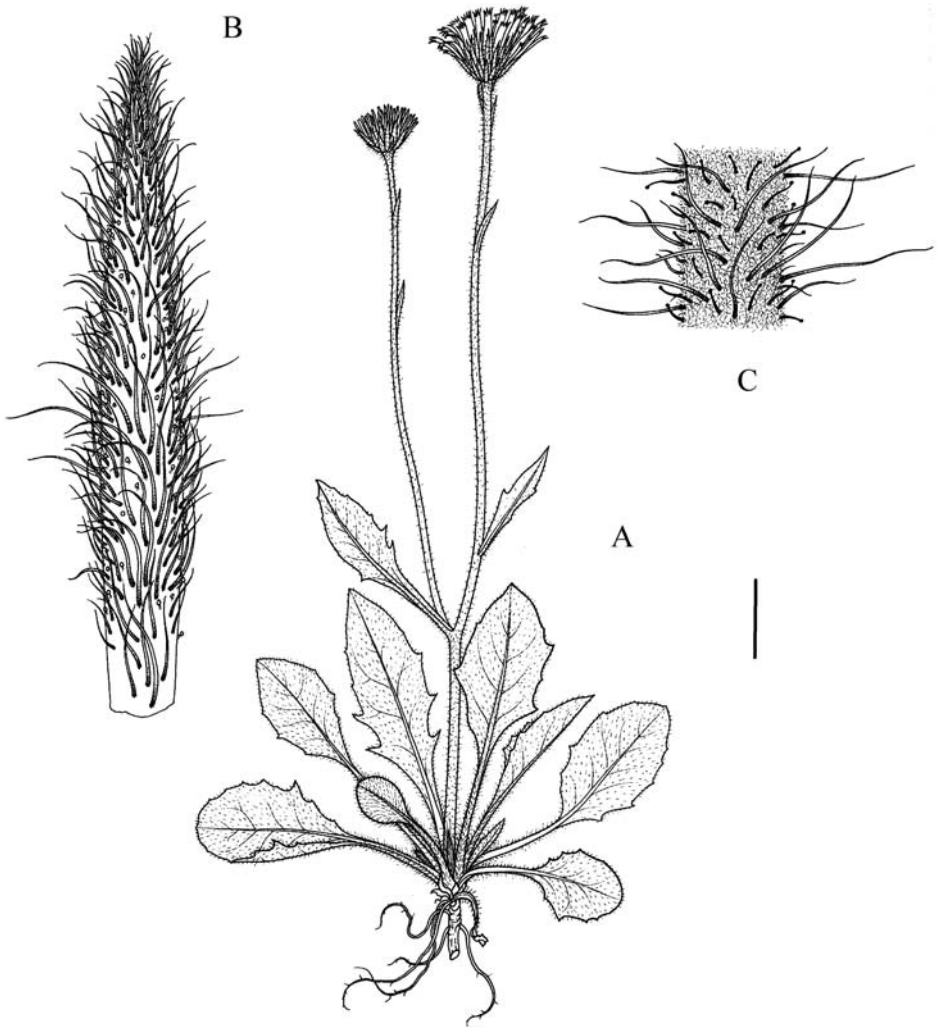

Fig. 1. – Habitus of *H. jarzabczynum.* A – general habit, B – involucral bract, C – peduncle. Scale bar = 2 cm (A), 1.5 mm (B), 2 mm (C).

face, (3–) 5–23 (–27) hairs/0.5 cm^2 of the lower leaf surface – scored in the middle part of the longest well developed inner basal leaf of flowering plants, central vein and margins not included], hairs on the margins, petioles and below on the midrib numerous, and with scattered minute yellowish glandular hairs especially along the margin, dark green above, slightly glaucescens below. Basal leaves (1–) 3–9 (–11) at the time of flowering, petiolate, primordial ones ovate, broadly elliptical to nearly rounded, rounded at apex, truncate at base, denticulate or with a few large teeth towards the base, the remainder (broadly) elliptical, oblong-obovate to oblanceolate [the longest leaf (5.0–) 6.0–12.5(–14.7) cm × (1.2–) 1.6–3.0 (–3.3) cm], subacute, cuneate at the base, in the lower half usually deeply dentate, the longest tooth (1.2–) 1.7–9.0 mm long, teeth triangular to narrowly triangular, patent or

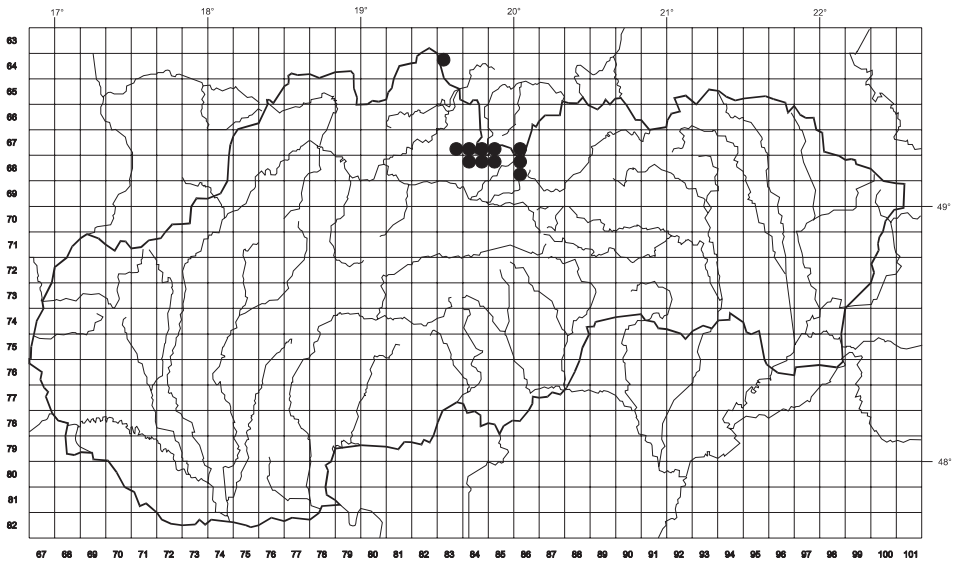

Fig. 2. – Distribution of *H. jarzabczynum.*

occasionally slightly pointing upwards, sometimes with 1 to few narrowly triangular curved (tooth) teeth on the petiole. Leaf-like ("proper") cauline leaves 0–2 (–3), bract-like ones 1–4, the lowest leaf (if developed) elliptical to oblanceolate, 1.2–8.3 (–10.3) × 0.2–2.0 (–2.2) cm, acute to subacute, cuneate to attenuate to a short petiole, subentire or more often shallowly to deeply dentate in the lower half [the longest tooth (0.5–) 2.0–6.5 (–8.0) mm long], teeth (narrowly) triangular, patent to slightly pointing upwards, the second leaf (if developed) shorter, elliptical to oblanceolate, acute, denticulate to entire, upper stem leaf (leaves) linear, bract-like. Heads 1–3(–5); peduncles with numerous [(22–) 24–66 (–81) on 0.5 cm long part of the peduncle] (1.72–)1.89–3.09(–3.25) mm long pale simple eglandular hairs with a short (1/9–1/5 of their length) dark base, numerous [(62–) 79–156 (–186) on 0.5 cm long part of the peduncle] (0.36–) 0.37–0.54 (–0.59) mm long dark glandular hairs and with numerous stellate hairs, greyish-green. Involucres ovate-cylindrical, 13–16 (–17) mm long, phyllaries linear lanceolate, greyish green, with numerous to 3 mm long, pale, shortly (ca 1/4 of their length) dark based simple eglandular hairs, and scattered minute dark glandular hairs, the medium ones (1.3–) 1.4–1.8 (–1.9) mm wide. Ligules flat, with scattered minute hairs at apex, yellow, the outer ones (16.0–) 16.3–22.0 (–23.0) mm long. Styles dark olivaceous with black scales. Achenes 2.8–3.4 mm long, brown-black.

Chromosome number and mode of reproduction: 2n = 36 (Mráz 2001a ut *H. nigrescens* s.l.; Chrtek et al. 2007); agamospermous (Chrtek et al. 2007).

Variability: According to multivariate morphometric analysis, plants from an isolated population at Mt. Babia hora/Babia Góra differ from those of the Tatry Mts (Chrtek et al. 2007), first of all by having narrower and less dentate leaves and always one head. However, they share the same multilocus allozyme genotype (one agamospermous

"clone", Chrtek et al. 2007) with the plants from the Tatry Mts and are thus placed in *H. jarzabczynum* in this account. The morphological differences of the Babia hora/Babia Góra population could be explained by the geographic isolation of this mountain ridge from the Tatry Mts (ca 40 km) during most of the Postglacial period. However, this time would not be sufficient for differentiation at the protein level. On the other hand, the use of more sensitive molecular techniques, like RAPDs or AFLPs might separate both the Tatry and Babia hora / Babia góra populations and in case justify the taxonomic splitting of *H. jarzabczynum*.

E c o l o g y : Alpine and subalpine grasslands, very rarely rocky outcrops in the mountain belt, on silicates, on basic bedrocks on acid soils only.

D i s t r i b u t i o n : Scattered in the Západné Tatry/Tatry Zachodnie Mts (N Slovakia, S Poland), with a small overlap eastwards to the westernmost part of the Vysoké Tatry Mts (to the Popradské pleso mountain lake). It is also known from the summit area of the Babia hora/Babia Góra massif at the Slovak-Polish border (Fig. 2).

Hieracium jarzabczynum is most probably endemic to the Western Carpathians. It is closely allied to *H. decipiens* Tausch from the Krkonoše Mts (the Sudeten Mts, N Bohemia, SW Poland), from which it can be easily distinguished by its indumentum of the involucral bracts (scattered glandular hairs vs. numerous, also at the top of bracts in *H. decipiens*), more dentate and usually broader leaves. Moreover, both taxa differ also in their allozyme pattern (Chrtek et al. 2007).

S p e c i m e n s s e e n : **Slovakia. 23a. Západné Tatry**: Roháče Mts, Zuberec: Látaná dolina valley, the upper part (Zadná Látaná), near the marked tourist path, 10.5 km SEE of the village, 1320–1340 m alt. (15 August 1995 Chrtek jun. & Odvodyová, PRA; 23 July 1997 Chrtek jun. & Odvodyová, PRA) (6784/4). – Montes Liptovské Tatry: In jugo inter mont. Osobitá et Volovec, solo granit., 1400–1500 m (VII.1938 M. Deyl, BP) (6784/4). – Na lúčke ca 0,1 km JV od kóty Roh (1573), na hrebeni, 1500 m (28 July 1999, Mráz & Jurkovičová, herb. Mráz) (6784/4). – Západné Tatry Mts, Zuberec: Mt. Lúčna, slopes near the marked path to the mountain ridge of Roh, 11.5 km ESE of the village, 1620 m alt., 49°13'46" N, 19°45'40" E (23 July 1997 Chrtek jun. & Odvodyová, PRA; 8 July 2000 Chrtek jun., PRA) (6784/4). – Západné Tatry Mts, Roháče, Zuberec: Zábrať saddle, 10.5 km ESE of the village, 1650 m alt., 49°13'15" N, 19°44'58" E (7 July 2000 Chrtek jun., PRA; 27 July 2001 Chrtek jun., PRA; 15 August 2001 Chrtek jun., PRA) (6784/3). – Roháče Mts, Zuberec: Smutná dolina, middle part, grassland along the path, ca 300 m above the crossroad to the Roháčske plesá mountain lakes, 12 km SE of the village, 1560 m alt., 49°12'11" N, 19°45'02" E (12 July 2003 Chrtek jun., PRA) (6784/4). – Liptovské hole (Roháče): Na travnatém hřebínku ve Smutné dolině, 1700 m (21 July 1952 Šourek, PR) (6784/4). – Roháče Mts: Smutná dolina valley, near the marked touristh path over the Ťatliakovo pleso mountain lake, 11.5 km SE of Zuberec, ca 1440 m alt. (22 July 1997 Chrtek jun. & Odvodyová, PRA) (6784/3). – Roháče Mts, Zuberec: Roháčska dolina, disturbed places along the road ca 300 m NW of the Ťatliakovo jazero mountain lake, 11 km SE of the village, 1350 m alt., 49°12'52" N, 19°44'47" E (12 July 2005 Chrtek jun., PRA) (6784/3). – Roháče Mts, Zuberec: Roháčske plesá mountain lakes, 11.5 km SEE of the village, 1550 m alt. (22 July 1997 Chrtek jun. & Odvodyová, PRA) (6784/3). – Západné Tatry Mts, Zuberec: Roháčske plesá mountain lakes, 10.5 km SE of the village, 1620 m alt., 49°12'30" N, 19°44'08" E (22 July 1997 Chrtek jun. & Odvodyová, PRA; 7 July 2000 Chrtek jun., PRA) (6784/3). – Comit. Árva: In rup. subalpinis ad lacus "Rohacsi tavak" alpium liptoviensium (22 August 1911 Jávorka, BP, ut *H. nigrescens*, det. Zahn) (6784/3). – Spálená dolina valley, 1750 m a.s.l. [6 August 2004 Mráz & Letz, herb. Mráz, ut *H. nigrescens* s.l. (*mlynicae*)] (6784/3). – Liptoihavasok, Mt. "Banikov vrch" alatti foras vire fűves, 1600–1700 m (7 August 1908 Hulják, BP, ut *H. nigrescens* subsp. *nigrescens*, det. Zahn) (6884/1). – Roháče Mts, Zuberec: Salatínska dolina valley (between Mt. Predný Salatín and Mt. Zadný Salatín), upper part of the ski slope, 7.5 km SE of the village, 1360 m alt., 49°13'37" N, 19°42'23" E (10 July 2003 Chrtek jun., PRA; 12 July 2005 Chrtek jun., PRA) (6784/3) – Roháče Mts, Zuberec: Mt. Predný Salatín, ridge, 7 km SE of the village, 1660 m alt., 49°13'48" N, 19°41'42" E (10 July 2003 Chrtek jun., PRA) (6784/3). – On the ridge between Mt. Predný Salatín (1624) and Mt. Brestová, 1650–1900 m a. s. l. [6 August 2004 Mráz & Letz, herb. Mráz, ut *H. nigrescens* s.l. (*mlynicae*)] (6784/3). – Roháče Mts, Zuberec: mountain ridge between Mt. Sivý vrch and the saddle Pálenica, open places in dwarf-pine stands along the path, 5.5 km SE of the village, 1620 m alt., 49°12'54"

N, 19°38'53" E (7 July 2000 Severa, PRA; 14 July 2005 Chrtek jun., PRA) (6783/4). – Alpes Liptovienses, com. Árva: In graminosis jugi Palenica pr. Zuberec, 1500 m s.m. (17 July 1928 Rechinger fil., BP, ut *H. alpinum* subsp. *pseudofritzei* f. *genuinum*, det. Zahn) (6783/4). – Západné Tatry Mts, Pribylina: Nízke sedlo saddle, 11.5 km N of the village, 1823 m alt., 49°11'57" N, 19°47'02" E (27 July 2001 Chrtek jun., PRA) (6784/4). – Západné Tatry Mts, Pribylina: Mt. Hrubý vrch, W slopes, 10.5 km N of the village, 1820 m alt., 49°11'54" N, 19°47'20" E (25 July1998 Chrtek jun., PRA; 27 July 2001 Chrtek jun., PRA) (6884/2). – Sedlo pod Hrubým vrchom saddle, ca 1.5 km NW of Mt. Hrubý vrch (= Jarząbczy Wierch) 1935 m a.s.l., 49°11'55" N, 19°47'10" E (26 July 1998 Mráz & Jurkovičová, herb. Mráz, ut *H. nigrescens* s.l.) (6884/2). – Slovak side of the main ridge between Gáborovo sedlo saddle and Bystré sedlo saddle, southern slopes, 1950 m a.s.l. (7 August 2004 Mráz & Letz, herb. Mráz, ut *H. mlynicae*) (6885/1). – Mt. Kresanica, S slopes bellow the top, 2080 m a.s.l. (2 September 2004 Mráz, herb. Mráz) (6785/3). – Západné Tatry, sedlo Závory, ca 1850 m alt. [1997 Mráz, herb. Mráz, ut *H. mlynicae* (*nigrescens* agg.)] (6786/3). – Tatry: Wierch Cicha [Tichý vrch] (31 July 1881 s. coll., KRAM) (6786/3). – **23b. Vysoké Tatry**: Medzi Štrbským a Popradským plesom, vedľa červenej turistickej značky, 1500 m (10 August 1996 Mráz, herb. Mráz) (6886/3). – Mengusovská dolina, Červený žľab (11 August 2001 Mráz, herb. Mráz) (6886/1). – **28. Západné Beskydy:** Oravské Beskydy Mts, Oravská Polhora: Mt. Babia hora, E slopes, 8 km NW of the village, 1700 m alt., 49°34'15" N, 19°31'40" E (23 July 1998 Chrtek jun., PRA) (6483/1). – S slope of the top of Mt. Babia hora, Slovak part, ca 1700 m a.s.l. (5 August 2004 Mráz & Letz, herb. Mráz, ut *H. nigrescens* s.l.) (6483/1).

Poland. Tatry Zachodnie: Tatry Zachodnie: Lopata. Murawy na granicie na pd. Zboczach, 1920 m (5 August 1981 Jasiewicz, WRSL) (6784/4). – Tatry Zachodnie: Pyszna nad Blyszczem i Banistem, 1920 m (18 July 1936 Pawłowski, KRAM-herb. Pawłowski) (6885/1). – Baniste nad Pyszna, skaliste murawy – granit, ok. 1800 m (18 July 1936 Pawłowski, KRAM, ut *H. pietroszense* subsp. *jarzabczynum* for. *grandidens* n. f.) (6885/1). – West-Tatra: Unterhalb des Jarząbczy Wierch gegen das Jarząbcza Tal. Granitfelsen (10 August 1922 Pawłowski, KRAM) (6784/4). – **Beskid Żywiecki**: Babia Góra, kosówka na grzbecie między Sokolicą u Kepa, wys. okolo 1400 m (4 July 1986 Pawlus & Jasiewicz, KRAM) (6483/1). – Mt. Babia Góra (Diablak), summit area, ca 1700 m alt. (22 August 1997 Mráz, herb. Mráz, planta culta no. 505) (6483/1).

2. *Hieracium vapenicanum* (Lengyel et Zahn) Chrtek f. et Mráz (Fig. 3)

H. vapenicanum (Lengyel et Zahn) Chrtek f. et Mráz, Bot. J. Linn. Soc. 153 [accepted for publication], 2007.

≡ *Hieracium nigrescens* subsp. *brachytrichellum* [var.] γ. *vapenicanum* Lengyel et Zahn, in Zahn Magyar Bot. Lapok 25(1926): 369, 1927.
Ind. loc.: " Gömör: in m. Vapenica ad Helpam (L[engyel])".
L e c t o t y p u s (Chrtek et al. 2007): [Slovakia, the Nízke Tatry Mts] Comit. Gömör: in m. Vapenica ad Helpam, 22. VII. 1926, leg. Lengyel, det. K.H. Zahn, BP no. 57864. Isolectotypi: BP no. 646691 et 192599.
– *Hieracium nigrescens* subsp. *decipiens* auct. (p.p.), non (Tausch) Čelak.: e.g. Zahn in Engler Pflanzenreich 77(IV/280): 642, 1921; Zahn in Graebner f. Syn. Mitteleurop. Fl. XII/3, Lief. 2: 163, 1936 (ut *H. nigrescens* subsp. *eu-decipiens* a. [var.] *genuinum* Zahn, nom. inval.).

D e s c r i p t i o n : Phyllopodous. Stem (10.5–) 12.5–24.0 (–24.5) cm long, simple unbranched, single-headed, slightly striate, with scattered to numerous pale (towards the top of stem shortly dark-based) 1.5–4.0 mm long simple eglandular hairs, numerous stellate hairs throughout, and with few, towards the top of stem numerous short glandular hairs. Leaves on both surfaces with scattered to numerous 1–2.5 mm (on the petioles to 5 mm) long pale simple eglandular hairs [(6–)8–35(–44) hairs/0.5 cm^2 of the upper leaf surface, (4–) 6–32 (–49) hairs/0.5 cm^2 of the lower leaf surface], hairs on the margins, petioles and below on the midrib numerous, with scattered minute yellowish glandular hairs especially along the margin, and with rare, below on the midrib and along the margins scattered stellate hairs, light green. Basal leaves (3–) 4–9 at the time of flowering, petiolate, primordial ones ovate, rounded at apex, cuneate at base, subentire to remotely denticulate, the remainder (broadly) oblong-elliptical, lanceolate to oblanceolate [the longest leaf (3.0–) 3.5–10.8 (–11.8) cm × (0.6–) 0.7–1.3 (–1.4) cm], acute, attenuate into a petiole, subentire,

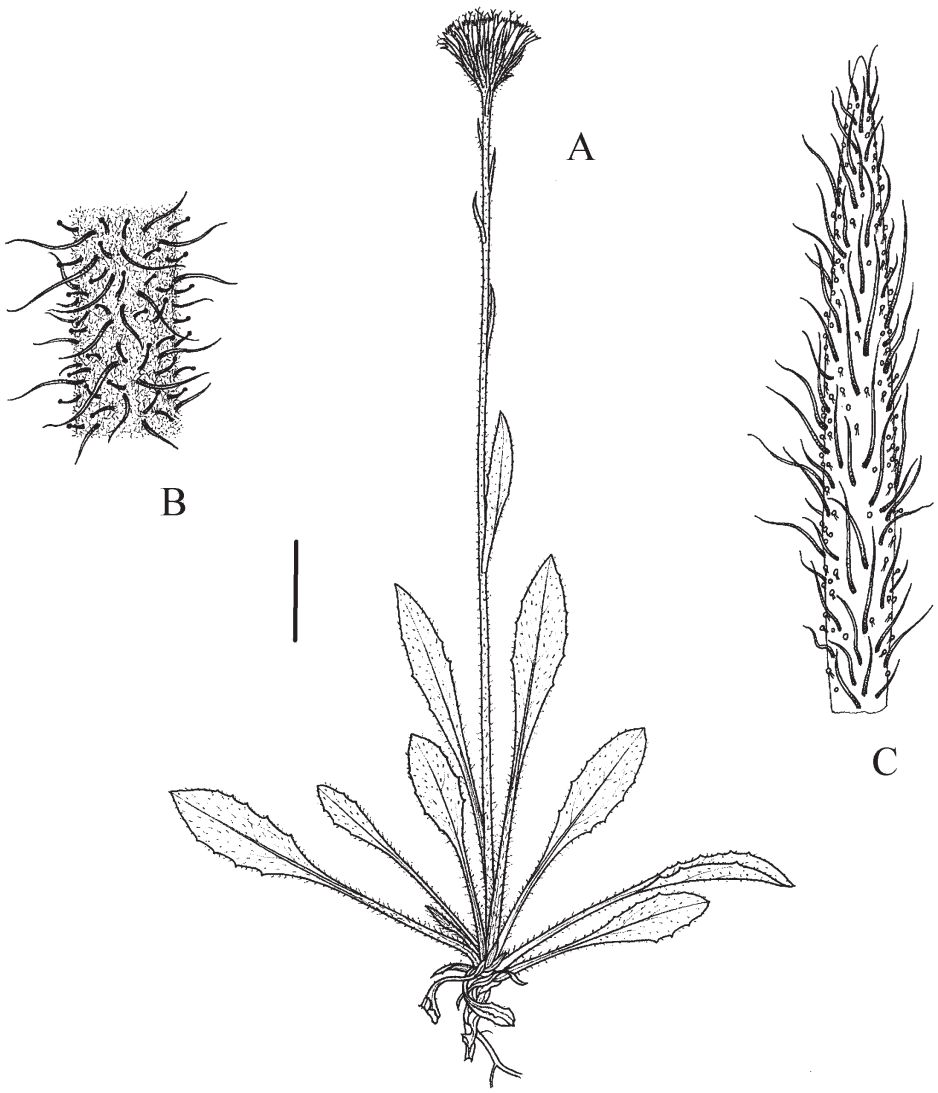

Fig. 3. – Habitus of *H. vapenicanum*. A – general habit, B – peduncle, C – involucral bract. Scale bar = 2 cm (A), 2 mm (B), 1.5 mm (C).

denticulate to (towards the base) shallowly dentate (rarely with few larger teeth) [the longest tooth up to 2.3 (–3.2) mm long], teeth triangular to narrowly triangular, patent or sometimes slightly curved upwards, petioles always entire. Leaf-like ("proper") cauline leaves 0–2 (–3), bract-like ones 3–6 (–8), the lowest leaf (if developed) (narrowly) oblong elliptical to (narrowly) oblong lanceolate, 0.5–7.2 (–8.0) × 0.2–0.9 (–1.0) cm, acute, attenuate into a rather long petiole, subentire to denticulate, occasionally with a few larger teeth towards the base [the longest tooth up to 1.3 (–1.9) mm long], teeth (narrowly) triangular, patent to curved upwards, sometimes the lowest leaf linear, entire; the second leaf (if de-

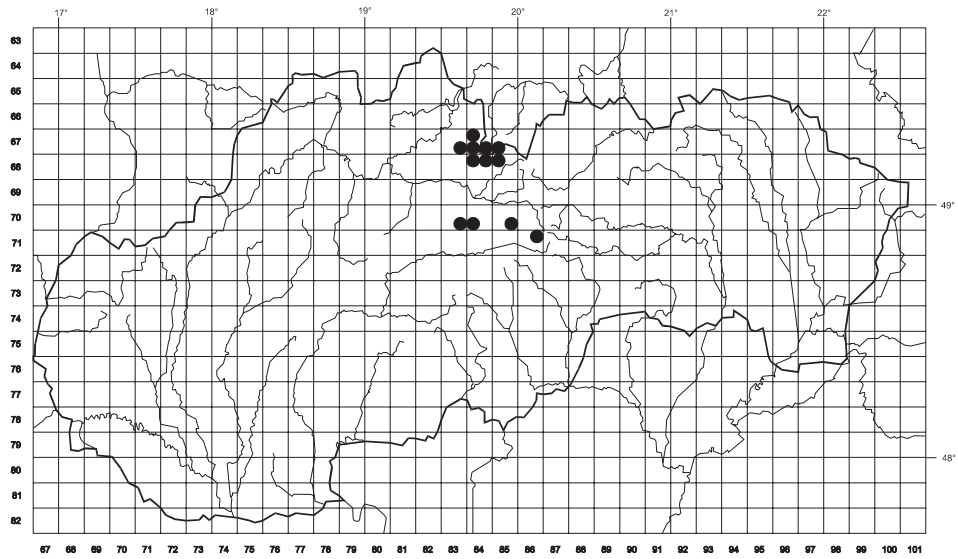

Fig. 4. – Distribution of *H. vapenicanum.*

veloped) shorter, narrowly elliptical to linear, acute, entire, upper stem leaves linear, bract-like. Capitula 1, peduncles with numerous [(12–) 15–61 (–82) on 0.5 cm long part of the peduncle] (1.98–) 1.01–1.78(–1.8) mm long pale simple eglandular hairs with a short (1/5–1/4 of their length) dark base, numerous [(104–)133–231(–236) on 0.5 cm long part of the peduncle] (0.27–) 0.30–0.39 (–0.41) mm long dark glandular hairs and with numerous stellate hairs. Involucres ovate-cylindrical to bottle-shaped, 11–15 mm long, phyllaries linear, light greyish green, with numerous to 1.5 mm long, pale, dark based (1/4–1/2 oft their length) simple eglandular hairs, and numerous minute dark glandular hairs, the medium ones 0.7–0.9(–1.1) mm wide. Ligules flat, with few minute hairs at apex (some ligules within the head might lack them), yellow, the outer (9.3–) 9.7–15.7 (–16.0) mm long. Styles purely yellow. Achenes 2.8–3.2 mm long, brown-black.

Chromosome number and mode of reproduction: 2n = 27 (Chrtek et al. 2007), agamospermous (Chrtek et al. 2007).

Ecology: Alpine and subalpine grasslands and heaths on silicates.

Distribution: Scattered throughout the Západné Tatry/Tatry Zachodnie Mts (N Slovakia/S Poland), eastwards to the Tichá dolina valley; local and rare in several sites in the Nízke Tatry Mts (Slovakia) (Fig. 4).

Worth mention is an overlap of distribution area of several mountain species of *Hieracium* in the Western Carpathians. At least two other species, i.e. *H. rohacsense* Kit. and *H. silesiacum* Krause occupy areas nearly identical to that of *H. vapenicanum* (Mráz 2001b, Chrtek et al. 2002). Both *H. vapenicanum* and *H. jarzabczynum* have their core distribution area in the Západné Tatry Mts with or without a very small overlap eastwards to the Vysoké Tatry Mts and only differ in geographic location of other small areas (Babia hora/Babia Góra in *H. jarzabczynum*, Nízke Tatry in *H. vapenicanum*).

Hieracium vapenicanum should be considered as endemic to the Western Carpathians. It clearly differs from all taxa of the *H. nigrescens* group recognized in the Alps, the Sudeten Mts and NW Europe. However, plants from the Western Carpathians resemble those from the Rumanian Carpathians, described by Zahn as *H. nigrescens* subsp. *brachytrichellum* Zahn, but differs first of all by having shorter ligules, shorter simple eglandular hairs on peduncles and involucral bracts and narrower involucral bracts.

Specimens seen: **Slovakia**. **22. Nízke Tatry**: Nízke Tatry, Demänovské sedlo, J exp., *Caricetum sempervirentis*, 1700–1800 m a.s.l. (15 July 1996 Mráz, cult. no. 5, cultivated in Botanical garden Košice, coll. 2000, herb. Mráz) (7083/4). – Travnatá místa na severním a západním svahu Králičky (2 and 5 August 1938 Zlatník, SAV, *H. rohacsense* et *H. stygium* admixt.) (7084/3). – Nízke Tatry Mts, Heľpa: Mt. Veľká Vápenica, 5.5 km NE of the village, 1690 m alt., 48°54'30" N, 19°59'00" E (17 July 2001 Chrtek jun., PRA) (7085/4). – Comit. Gömör: in m. Vapenica ad Helpam (22 July1926 Lengyel, BP) (7085/4). – Masív Kráľovej hole, glaciálny kar Veľký Brunov, 1775 m n. m. (18 August 2004 Turis, herb. NAPANT, det. P. Mráz, cf. Turis et al. 2006) (7186/2). – **23a. Západné Tatry**: Šindlovec (1949 Zlatník, SAV) (6784/3). – Hřeben a svah nevápenc. rozsochy Osobité (1951 Zlatník, SAV) (6784/1). – Liptovské hole: Horské vápencové stráně na Osobité (25 July1950 Skřivánek, BRA) (6784/1). – Osobitá (s. d. Zlatník, SAV) (6784/1). – Západné Tatry Mts, Roháče, Zuberec: mountain ridge between Mt. Osobitá and Mt. Lúčna, 8.5–11 km ESE of the village, 1500–1550 m alt., 49°15'12" N, 19°43'50" E – 49°14'20" N, 19°45'30" E (15 July 1995 Chrtek jun., PRA; 8 July 2000 Chrtek jun., PRA; 28 July 2001 Chrtek jun., PRA) (6784/1). – Montes Liptovské Tatry: In jugo inter mont. Osobitá et Volovec, solo granit., 1400–1500 m (July1938 M. Deyl, PR) (6784/4). – Roháče Mts, Zuberec: Mt. Lúčna, summit area, open places in dwarf-pine stands, 11 km ESE of the village, 1630 m alt., 49°14'09" N, 19°45'55" (8 July 2000 Chrtek jun., PRA) (6784/4). – Arva: Berg Rakon (26 July1928 Rechinger fil., B) (6784/4). – Západné Tatry Mts, Roháče, Zuberec: Zábrať saddle, 10.5 km ESE of the village, 1650 m alt., 49°13'15" N, 19°44'58" E (7 July 2000 Chrtek jun., PRA; 27 July 2001 Chrtek jun., PRA) (6784/4). – Roháče Mts, Zuberec: Smutná dolina, middle part, grassland along the path, ca 300 m above the crossroad, 12 km SE of the village, 1560 m alt., 49°12'11" N, 19°45'02" E (12 July 2003 Chrtek jun., PRA) (6784/4). – Roháče Mts, Zuberec: Smutná dolina, along the path to the Roháčske plesá mountain lakes (to the lowest one), 11.5 km SE of the village, 1540 m alt., 49°12'26" N, 19°44'48" E (12 July 2003 Chrtek, PRA) (6784/4). – Roháče Mts, Zuberec: Spálená dolina valley, lower part, near a path in the forest, near the "Roháčske vodopády" waterfalls, 9.7 km SE of the village, 1340 m alt., 49°12'55" N, 19°43'45" E (12 July 2003 Chrtek jun., PRA) (6784/3). – Roháče Mts, Zuberec: Salatínska dolina valley (between Mt. Predný Salatín and Mt. Zadný Salatín), upper part of the ski slope, 7.5 km SE of the village, 1360 m alt., 49°13'37" N, 19°42'23" E (10 July 2003 Chrtek jun., PRA; 12 July 2005 Chrtek jun., PRA) (6784/3). – Roháče Mts, Zuberec: mountain ridge between Mt. Sivý vrch and the saddle Pálenica, open places in dwarf-pine stands along the path, 5.5 km SE of the village, 1620 m alt., 49°12'54" N, 19°38'53" E (7 July 2000 Severa, PRA) (6783/4). – Liptovské hole: Velký vrch [= Baranec] (August 1926 Zlatník, SAV) (6884/1). – Západné Tatry Mts, Pribylina: Račkova dolina valley, upper part, along the path to the Račkove plesá mountain lakes, 10.5 km N of the village, 1650 m alt., 49°11'35" N, 19°48'45" E (25 July 1998 Chrtek jun., PRA) (6884/2). – Gáborova dolina valley, towards to the Bystré sedlo saddle, ca 1900 m a. s. l. (7 August 2004 Mráz & Letz, herb. Mráz) (6885/1). – Mont. Liptovské hole: in declivi meridion. sub mont. Velká Kamenistá, ca 1700 m, in Calamagrost., solo granitico (6 August 1931 J. Dostál, BP) (6885/1). – Ferečiny, na sev. svazích Liptovské a Polské Tomanové, ca 1750 m (22 July1959 J. Šmarda, TNP, ut *H. rohacsense*?, det. ? Skřivánek), rev. Mráz 2001 ut *H. vapenicanum*) (6785/3).

Poland. Tatry Zachodnie: Tatry Zachodnie: Murawy na wapieniu w piętrze kosówki (1 August 1963 Jasiewicz, KRAM). – Tatry Zachodnie: Dolina Staroroboci ańska, na wys. 1620 m (11 August 1977 Jasiewicz, KRAM) (6784/4).

3. ***Hieracium mlinicae*** (Hruby et Zahn) Chrtek f. et Mráz, **comb. et stat. nov.** (Fig. 5)

≡ *Hieracium nigrescens* subsp. *mlinicae* ["Mlinicae"] Hruby et Zahn in Zahn, Magyar Bot. Lapok 25: 370, 1927. Ind. loc.: "Tatra: in Nardeto inter vallem Mlinica et lacum Poprádi tó (Popper-See)".
Lectotypus (hoc loco designatus): [Slovakia] Poppersee – Mlinicatal, um Wegen u. im Nardetum, VIII. 1921, leg. Hruby, det. Zahn ut *Hieracium nigrescens* subsp. *Mlinicae* Zahn, BRNM no. 69580.

Note on the orthography: The subspecies epithet "*mlinicae*" given in the protologue is related to the topographic name with actual spelling "Mlynická dolina" val-

ley, also known in abbreviated form "Mlynica". However, according to ICBN (McNeill et al. 2006; Art 60), the original spelling "*mlinicae*" should be kept.

D e s c r i p t i o n : Phyllopodous. Stem 30–45 cm high, single (unbranched) or with 1–2 (–4) erect branch(es), slightly striate, with scattered to numerous pale (towards the top of stem shortly dark-based) 1.5–4.0 (–5.0) mm long simple eglandular hairs, numerous, towards the top dense stellate hairs, and with a few glandular hairs above. Leaves with numerous 1.2–1.8 mm (on the petioles to 4 mm) long pale simple eglandular hairs, on the margins, petioles and below on the midrib hairs dense, with very few minute yellowish glandular hairs especially along the margin, dark green above, slightly glaucescens below. Basal leaves 5–10 at the time of flowering, petiolate, primordial ones broadly (ob)ovate, rounded at apex, cuneate at the base, distinctly deeply dentate (teeth to 8 mm long), the remainder broadly lanceolate to elliptical (the longest leaf 13–17 × 3.0–3.5 cm), subacute, cuneate at the base, in the lower half distinctly deeply dentate, teeth to 12 mm long, triangular to narrowly triangular, patent or occasionally (the lowest) slightly pointing upwards, in the upper half shallowly (less often deeply) dentate, sometimes with 1 to few narrowly triangular to linear (tooth) teeth on the petiole. Leaf-like ("proper") cauline leaves 1–3 (–4), bract-like ones 1–2, the lowest leaf broadly lanceolate to elliptical-lanceolate, 9–11 cm long, 2.0–2.6 cm wide (without the teeth), acute to subacute, cuneate to attenuate to a short petiole, usually with a pair (less often two pairs) of distinct to 18 mm long patent teeth in the lower half, in the upper half shallowly dentate to denticulate, the second leaf (if developed) shorter, elliptical to oblanceolate, acute, denticulate to entire, the second stem leaf lanceolate to narrowly elliptical, acute at apex, attenuate to a short petiole, with a few teeth to subentire, other "proper" leaves (if developed) narrowly elliptical to linear, entire to shallowly dentate, bract-like leaves linear, entire. Heads (1–) 2–4 in the main inflorescences, branches (if developed) with (1–) 2–4 heads; peduncles with numerous 1.0–2.5 mm long pale simple eglandular hairs with short (1/10–1/5 of their length) dark base, numerous 0.2–0.4 mm long dark glandular hairs and dense stellate hairs. Involucres barrel-shaped to ovate-cylindrical, 11–13 mm long, phyllaries linear lanceolate, blackish-green, with numerous to 2.8 mm long, pale, shortly (1/5–1/4 of their length) dark based simple eglandular hairs, and scattered to numerous minute dark glandular hairs, the medium ones 0.7–1.2 mm wide. Ligules flat, with numerous minute hairs at apex, yellow, the outer ligules 12–16 mm long. Styles dark olivaceous with black scales. Achenes 3.0–3.5 mm long, brown.

E c o l o g y : Open canopy dwarf-pine stands, subalpine grasslands.

D i s t r i b u t i o n : Rare in the Tatry Mts. It is most probably endemic to the Tatry Mts (Fig. 6).

Hieracium mlinicae resembles members of the *Hieracium atratum* agg. (*H. alpinum* – *H. murorum*) but differs by having much more simple eglandular hairs on leaves, stems and phyllaries.

S p e c i m e n s s e e n : **Slovakia**. **23b. Vysoké Tatry**: Poppersee – Mlinicatal, um Wegen u. im Nardetum (August 1921 Hruby, BRNM) (6886/3). – Mlynická dolina valley, 3.2 km NNW of Štrbské Pleso (railway station), dwarf-pine stands, 1590 m alt., 49°08'39" N, 20°02'57" E (28 July 2000 Chrtek jun., PRA) (6886/3).

Poland. Tatry Zachodnie: Przeł. Goryczkowa Świńska, 1800 m (22 July 1992 Szeląg, herb. hierac. Z. Szeląg) (6785/4). – **Tatry Wysokie**: Morskie Oko, morena przy schronisku od str. zach., 1420 m (23 July 1992 Szeląg, herb. hierac. Z. Szeląg) (6786/3).

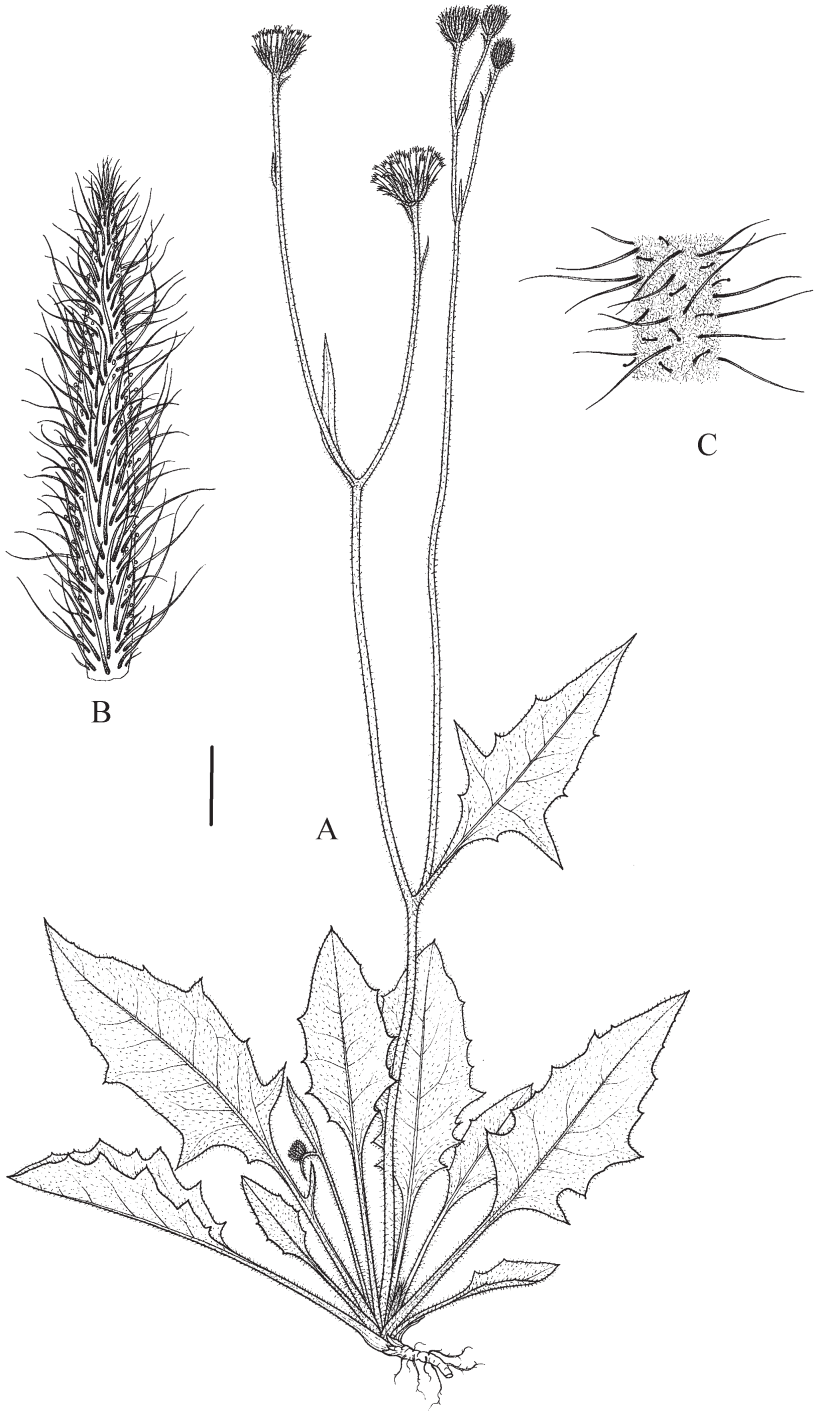

Fig. 5. – Habitus of *H. mlinicae.* A – general habit, B – involucral bract, C – peduncle. Scale bar = 2 cm (A), 1.5 mm (B), 2 mm (C).

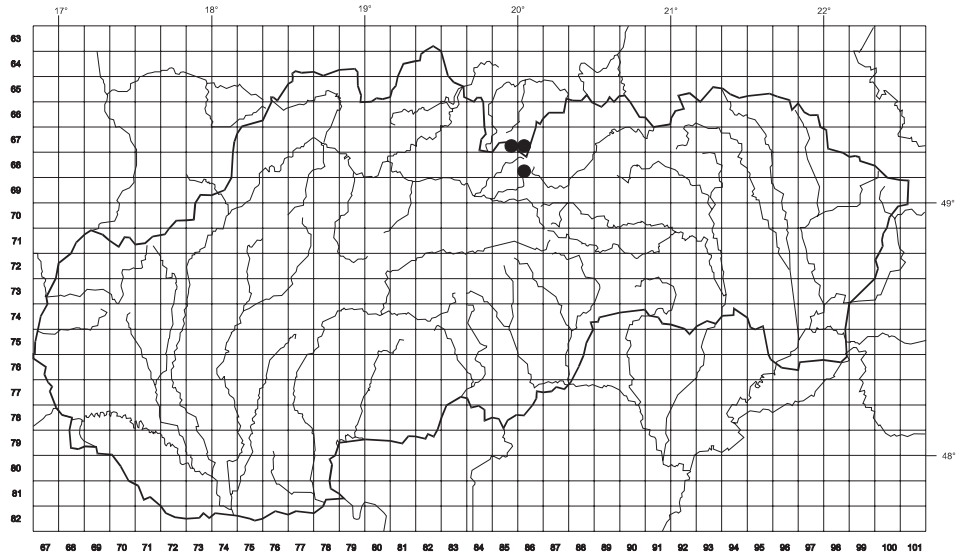

Fig. 6. – Distribution of *H. mlinicae.*

Taxa of the *Hieracium nigrescens* agg. at the subspecies and variety ranks reported by Zahn (1936) from the Western Carpathians, arranged according the Zahn's account

Hieracium nigrescens subsp. *brachytrichellum* var. *breviciliatum* Zahn

According to Zahn (1936), the name was published in the journal Annales historico-naturales musei nationalis Hungarici [vol. 8], p. 74, 1910. However, the name did appear neither in the cited volume, nor in other papers by Zahn and Lengyel and Zahn dealing with the genus *Hieracium* in the Hungary (in the former borders) and Balkan countries. It appeared validly published firstly in Engler's "Pflanzenreich" (Zahn 1921–1923: 639) with a brief description and reference to "*decipiens* Zahn in M. bot. Lap. (1906) 72". This taxon (*Hieracium nigrescens* subsp. *decipiens*) really appered at the cited page, with a locality "Alpe Retyezát: Zanoga-See (Wagner)" and a note "Eine Form mit gelbem Griffel". Furthermore, Degen and Zahn described validly *Hieracium nigrescens* subsp. *breviciliatum* (Magyar Bot. Lapok 7: 120, 1908), based on plants from "Hungaria. Com. Hunyad: Retyezát, in lapidosis supra "Valeriaska", c. 2000 m. 1. VIII. [sine anno, sine coll.]". Detailed description is not in an agreement with that of *H. nigrescens* subsp. *brachytrichellum* var. *breviciliatum*, also the authors of the names differ (Degen et Zahn vs. Zahn). Both taxa are evidently based on different original material. We did not find herbarium sheets referring to these names.

Hieracium nigrescens subsp. *brachytrichellum* var. *vapenicanum* Lengyel et Zahn, Magyar Bot. Lapok 25(1926): 369, 1927.

See above, the taxon was raised to the species level (Chrtek et al. 2007).

Hieracium nigrescens subsp. *brachytrichellum* var. *nagyszalokense* (Kováts et Zahn) Zahn in Graebner f. Syn. Mitteleur. Fl. XII/3: 160, 1936 [ut "*Nagyszalokense*"].

B a s . : *Hieracium nigrescens* subsp. *brachytrichellum* f. *nagyszalokense* Kováts et Zahn in Lengyel et Zahn, Magyar Bot. Lapok 28(1929): 26, 1930.
Ind. loc.: "Hohe Tatra: Nagyszalóki csúcs (Gr. Schlagendorfer Spitze)".
Lectotypus (hoc loco designatus): In declivibus montis Nagyszalóki csúcs (Schlagendorfer Spitze), Alta Tátra, in cottu Szepes [Slovakia, Vysoké Tatry Mts, Mt. Slavkovký štít], 21. VIII. 1927, sine coll. (ex herb. Kováts), BP no. 646692.

The plant belongs to *Hieracium pinetophilum* (Degen et Zahn) Chrtek f. (*H. fritzei* agg.).

Hieracium nigrescens subsp. *gymnogeniforme* var. *gymnogeniforme* (ut var. *verum* Zahn, nom. inval., Art. 24.3.)

This subspecies was described from the Southern Carpathians. However, very small, dwarf plants from the Nízke Tatry Mts were also referred to it by Zahn. We have found two sheets with Zahn's determination in herbarium BP : (1) Comit. Liptó. Montes Prassiva, in m. Vk. Chochula supra Koritnyicam (29 July 1930 Lengyel, BP) and (2) Comit. Zólyom : in m. Chopok (11 July 1928 Lengyel, BP). The plants have well developed heads, but are very small, probably influenced by harsh environment or herbivore atack. Their taxonomic identity remains a puzzle, they might be dwarf forms of *Hieracium pinetophilum* (*H. fritzei* agg.). Morphologically the same plants were also sometimes determined by Zahn as *Hieracium nigrescens* subsp. *decipiens* var. *korytnicae* (Comit. Zólyom, montes Prassiva. In m. Velka Košerisko, cca 1600 m, 29. VII. 1930, Lengyel, BP).

Hieracium nigrescens subsp. *decipiens* var. *decipiens* (ut var. *genuinum*, nom. inval., Art. 24.3.)

Hieracium decipiens Tausch was described from the Krkonoše Mts, plants from the Western Carpathians determined as *H. nigrescens* subsp *decipiens* (var. *decipiens*) mostly belong to either *H. jarzabczynum* or *H. vapenicanum.*

Hieracium nigrescens subsp. *decipiens* var. *polytrichodes* Pawł. et Zahn, in Zahn Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math., Ser. B, Sci. Nat., 1928: 209, 1929.

I n d . l o c . : "Tatra occid.: supra m. Błyszcz, c. 1880 m, solo primitivo; *Trifidi-Distichetum*.", "Tatra Magna: In declivitatibus m. Wyżnia Priehyba ad m. Krywań, c. 1900 m; *Trifidi-Distichetum*."
Lectotypus (hoc loco designatus): Tatry Zach.: pod Błyszczem, 1800 m, w Trifidi-Distichetum (29.VIII.1923 leg. B. Pawłowski), KRAM no. 147262.

The type specimen belongs to *Hieracium pinetophilum* (*H. fritzei* agg.).

Hieracium nigrescens subsp. *decipiens* var. *eurotatrense* Zahn in Engler, Pflanzenreich 77(IV/280): 642, 1921 [ut "*Eurotatrense*"].

I n d . l o c . : "Tatra: Furkota-, Mlinica- und Menguszfalva-Tal".
Lectotypus (hoc loco designatus): Montes Magas Tátra: in valle Furkota, 26. VII. 1912, leg. Filarszky, Szurák & Timkó, BP no. 0493693.

The plants belong to *Hieracium krivanense* (Woł. et Zahn) Shlyakov (*H. fritzei* agg.).

Hieracium nigrescens subsp. *decipiens* var. *korytnicae* Zahn in Engler, Pflanzenreich 77(IV/280): 642, 1921 [ut "*Korytnicae*"].

I n d . l o c . : "Liptó: Prassiva havas, 1400 m" .

Lectotypus (hoc loco designatus): Koritnyica (Prasiva-havas, 1400 m), 8. VIII. 1913, leg. Margittai, BP.

Plants belong to *Hieracium crassipedipilum* (Pawł. et Zahn) Chrtek f. (*H. fritzei* agg.).

Hieracium nigrescens subsp. *decipiens* var. *kralicskae* Lengyel et Zahn, Magyar Bot. Lapok 28(1929): 26, 1930 [ut "*Králicskae*"].

The name has been typified by Chrtek & Marhold (1998). It was synonymized with *Hieracium pinetophilum* (Degen et Zahn) Chrtek f. (*H. fritzei* agg.).

Hieracium nigrescens subsp. *parciglanduliforme* Pawł. et Zahn in Zahn, Bull. Int. Acad. Sci. Cracovie, Cl. Sci. Math., Ser. B, Sci. Nat., 1928: 209, 1929.

I n d . l o c . : "Tatra Magna: Miedziane, supra lacum Morskie Oko, ca. 1640 m, solo granitico."
Lectotypus (hoc loco designatus): Tatry Wys.: Miedziane, Calamagrostidetum (17. VIII. 1926 leg. B. Pawłowski), KRAM no. 146707.

The original plant definitively does not belong to the *H. nigrescens* agg. It is indeed still young and not easily identifiable, most probably identical with *Hieracium krivanense* (Woł. et Zahn) Shlyakov (*H. fritzei* agg.).

Hieracium nigrescens subsp. *parciglandulum* Zahn, Ann. Hist.-Nat. Mus. Nat. Hung. 8: 75, 1910.

I n d . l o c . : "Bestercze-Naszód: in m. Korongyos pr. Radna (Czetz, sub. nom. "*Lachenalii* Gmel. ")."

The name will be typified by a specimen from the Eastern Carpathians (Rodna Mts). Plants from the Western Carpathians mentioned by Zahn (1936) differ morphologically and most probably do not belong to the *Hieracium nigrescens* agg.

Hieracium nigrescens subsp. *nigrescens* var. *nigrescens* (ut var. *genuinum*, nom. inval., Art. 24.3.).

Plants referred by Zahn to this variety mostly belong to *H. jarzabczynum*. *H. nigrescens* subsp. *nigrescens* differs distinctly in its less densely clothed (simple eglandular hairs) phyllaries, stems and peduncles.

Hieracium nigrescens subsp. *nigrescens* var. *austrotranssilvanicum* Zahn, Magyar Bot. Lapok 7: 121, 1908.

The variety was described from the Southern Carpathians (Retezat Mts), and has also been reported from the Vysoké Tatry Mts. Plants from both areas belong to the *Hieracium atratum* agg. (specimens deposited in BP).

Hieracium nigrescens subsp. *koprovanum* Rech. f. et Zahn, Magyar Bot. Lapok 25 (1926): 369, 1927.

It was described from the westernmost part of the Vysoké Tatry Mts. Plants have scattered stellate hairs on the involucral bracts and thus the taxon should be placed to the *Hieracium rohacsense* group (*H. alpinum – H. bifidum*, cf. also the Zahn's note following the description "verosimiliter *bifidum-alpinum*").

Hieracium nigrescens subsp. *mlinicae* Hruby et Zahn in Zahn, Magyar Bot. Lapok 25: 370, 1927 [ut "*Mlinicae*"].

See above, the taxon was raised to the species level.

Subspecies and varieties of the *Hieracium nigrescens* agg. invalidly described by Zahn (1936) from the territory of the Western Carpathians

Hieracium nigrescens subsp. *gymnogeniforme* var. *minoriceps* Zahn in Graebner f., Syn. Mitteleur. Fl. XII/3:163, 1936, nom. inval. [Art. 36.1, diag. german.]

See comments under *H. nigrescens* subsp. *gymnogeniforme* (above). Small plants, which can hardly be identified (specimens in BP).

Hieracium nigrescens subsp. *menguszfalvae* Zahn in Graebner f., Syn. Mitteleur. Fl. XII/3:169, 1936, nom. inval. [Art. 36.1, diag. german.]

Ind. loc.: "Tatra: Mengsdorfer Tal! Csorbasee! Árva: Palenica-Joch [Zuberec]"

From three specimens cited in the protologue we have found only one bearing Zahn's original determination label "*Hieracium nigrescens* subsp. *menguszfalvae*":
Tatra: Menguszfalvi völgy, 26. VIII. 1928, leg. Lengyel, herb. BP. The plants have a few stellate hairs on the involucral bracts and should be placed between *Hieracium alpinum* and *H. bifidum*. They are most probably identical with *H. nigrescens* subsp. *koprovanum* (see above, it should also be placed between *H. alpinum* and *H. bifidum*).

Hieracium nigrescens subsp. *tatrigenum* Korb et Zahn in Graebner f., Syn. Mitteleur. Fl. XII/3: 170, 1936, nom. inval. [Art. 36.1, diag. german.]

Ind. loc.: "Tatra: Gr. Kohlbachtal (z. B. "Kämmchen")! Mengsdorfer und Felkatal [Schlesierhaus]! Hinzensee! meist im Krummholz."

Four localities from the Tatry Mts are given in the protologue (see above). Keeping in mind Zahn's rules in giving the authorship of names (the first author collected the original plants), at least some specimens used for the description should have been collected by Korb. There are several specimens collected by Korb in the Veľká Studená dolina valley (Vysoké Tatry Mts), in 1912, all deposited in W. The plants match well the description of *H. nigrescens* subsp. *tatrigenum*; all are determined by Zahn as *H. nigrescens* subsp. *nigrescens* var. *carbonivallis* Korb et Zahn. However, this name was never validly published. Although there are no clear indices, we are nearly sure that the description of subsp. *tatrigenum* is based on these specimens. Furthermore, there are several specimens with Zahn's handwritten labels "*Hieracium nigrescens* subsp. *tatrigenum*" in BP: Tatra: ad introitum vallis Gross Kohlbachtal [Veľká Studená dolina valley] (21. VIII. 1928 s. coll., herb. Degen, BP 192614, 192615, 192616); Tatra, Felkai völgy [Velická dolina valley, in German Felkatal] (16. VII. 1930 leg. Lengyel, BP 192617 and sine no.); Tatra, in valle Furkota (16. VII. 1930 leg. Lengyel, BP sine no., herb. Lengyel). All plants are morphologically identical and strongly resemble smaller plants of *Hieracium stygium* R. Uechtr. (*H. chlorocephalum* agg.) in having sessile to semiamplexicaul upper stem leaves and short and dark simple eglandular hairs on peduncles and phyllaries. We exclude them from the *Hieracium nigrescens* agg.

Hieracium nigrescens subsp. *pseudobructerum* Hruby et Zahn in Graebner f., Syn. Mitteleur. Fl. XII/3: 160, 1936, nom. inval. [Art. 36.1, diag. german.]

Ind. loc.: "Tatra: Knieholz zwischen Schlesierhaus und Polnischem Kamm". [Slovakia, Vysoké Tatry Mts, the valley of Velická dolina, part Kvetnica, between Sliezsky dom and Poľský hrebeň].

We found one sheet in herbarium BRNM bearing a label with Zahn's handwriting "*nigrescens* Willd. ssp. *pseudobructerum* Zahn" and corresponding locality ("Schlesierhaus – Poln. Kam, im Knieholzgürtel, Juli 1921, leg. Hruby", BRNM no. 69579). There are two plants on the sheet, both of them belong to *Hieracium halleri* Vill. (*H. alpinum* agg., rev. J. Chrtek jun. 1994).

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Souhrn

Na základě podrobné revize okruhu *Hieracium nigrescens* v Západních Karpatech jsou rozlišeny 3 taxony na úrovni druhu – *Hieracium jarzabczynum* (Pawł. et Zahn) Mráz et Chrtek f., *H. vapenicanum* (Lengyel et Zahn) Chrtek f. et Mráz a *H. mlinicae* (Hruby et Zahn) Chrtek f. et Mráz; ve všech případech jde o endemity tohoto území. Práce přináší určovací klíč a podrobné popisy, vyobrazení a mapy rozšíření jednotlivých druhů.

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