

Hieracium piliferum group (Asteraceae) in the West Carpathians*

Patrik MRÁZ

Institute of Biology & Ecology, P. J. Šafárik University Košice – Faculty of Sciences, Mánesova 23,
SK-04154 Košice, Slovakia; e-mail: mrazpat@kosice.upjs.sk

Institute of Botany, Slovak Academy of Sciences, Dúbravská cesta 14, SK-84223 Bratislava, Slovakia

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Taxonomic study of the *Hieracium piliferum* group revealed that two species were collected on the territory of the West Carpathians. Several botanists, including ZAHN, have questioned the historical record of *H. glanduliferum* HOPPE published by HAUSSKNECHT from the Vysoké Tatry Mts. However, the revision of the HAUSSKNECHT's specimen deposited in JE confirmed the correct determination made by the collector. This single voucher specimen collected below Mt. Kriváň in 1863 is the only one known to date from the whole Carpathian range. Other literature data from the West Carpathians are commented on as well. Based on revised herbarium specimens, the second taxon – *H. piliferum* Hoppe has four localities in the West Carpathians. Most recently *H. piliferum* was collected by the author of this paper in the Sata-
nia dolinka valley in the Slovak part of the Vysoké Tatry Mts in 2001. An abundant population of *H. piliferum* grows here in subalpine-alpine grassy communities on a large mylonite-granite scree. Karyological analysis revealed tetraploid chromosome number ($2n = 36$). Some important characteristics, the illustration including, are added to distinguish it from the morphologically closely related taxa.

Key words: chorology, chromosome number, *Hieracium*, Poland, Romania, Slovakia.

Introduction

The *Hieracium piliferum* group represents a very interesting alpine species group belonging to the sect. *Barbata* GREMLI. According to the ZAHN's (ZAHN, 1931) taxonomic concept, this species group consists of one species *H. piliferum* HOPPE composed of three "greges" ("grex" – rank between species and subspecies not recognised by the recent International code of botanical nomenclature, cf. GREUTER & al., 2000). SELL & WEST

(1976) treated these greges as separate species within the *H. piliferum* group: *H. glanduliferum* HOPPE, *H. piliferum* and *H. subnivale* GREN. & GODR. *H. glanduliferum* has been later selected as a type of section *Barbata* (STACE, 1998). Whereas *H. glanduliferum* has been reported only from the Alps (SELL & WEST, 1976) and from one locality in the Massif Central Mts (ZAHN, 1931), *H. piliferum* has a much larger area of distribution. Its range includes the Pyrenees, Massif Central, Apennines, Dinaric Mts, Alps and Carpathi-

* This study is dedicated to Augustín MURÍN (1933–2001).

ans (ZAHN, 1921, 1931; SELL & WEST, 1976; BRÄUTIGAM, 1992).

From the Carpathians, *H. glanduliferum* has been published from several localities in the Vysoké Tatry Mts, but all these data have been later considered as misidentifications with other species (cf. ZAHN, 1929; see below). The distribution of *H. piliferum* in the Carpathians has been recently revised by SZELĄG (2001a). According to him, *H. piliferum* belongs to the most rare vascular plants in the Carpathians. It is included in Red data book of vascular plants of Poland in the category VU (vulnerable) (SZELĄG, 2001b). There are only two isolated areas in the whole Carpathian range (documented by herbarium specimens), where it occurs – the Vysoké Tatry Mts (the West Carpathians) and Mt. Babel (Banat region, the South Carpathians) (ZAHN, 1931; SZELĄG, 2001a). Both taxa, *H. glanduliferum* and *H. piliferum*, are closely related species differing in the density of simple eglandular and glandular trichomes. While *H. piliferum* has sparse glandular trichomes and dense simple eglandular ones on the stem, in *H. glanduliferum* glandular trichomes are very dense and simple eglandular are usually missing on the upper part of stem (cf. ZAHN, 1931).

The aims of this study are as follows: (i) to discuss all previous literature data on the occurrence of the *H. piliferum* group from the West Carpathians, and (ii) to give information about new locality of *H. piliferum* in the Slovak part of the Vysoké Tatry Mts (the fourth one known in the West Carpathians).

Literature data on the *H. piliferum* group

Hieracium piliferum has been reported (as *H. schraderi* Schleich. ex DC.) probably for the first time from the West Carpathians by REUSS (1853) from the Slovak side of the Vysoké Tatry Mts (Nálevníkové pleso lake, Mt. Lomnický štít and Mt. Kriváň), from Mt. Kráľova hoľa (the Nízke Tatry Mts) and from Mt. Kohút (the Slovenské rudohorie Mts). There are no herbarium specimens collected by REUSS from any of the mentioned localities in the relevant herbaria. However, in the preface of his book (page VI) he stated that some records were based on the previously published works or unpublished data of other botanists. Although the data mainly from the Vysoké Tatry Mts could be based on correctly determined specimens, they are of more historical than scientific value. The last record from Mt. Kohút must be considered as highly improbable because of the very low altitude (1409 m a.s.l.) of

the locality. Although some subalpine-alpine taxa occur on the mountain ridges in the group of Mt. Kohút and Mt. Stolica (1476 m a.s.l.), examples of the most important of them include *Anthoxanthum alpinum*, *Avenula versicolor*, *Festuca picturata*, *Juniperus sibirica*, *Oreogalum montanum* or *Pulsatilla scherfellii* (cf. MAGIC & MÁJOVSKÝ, 1974), there are no suitable (stony) biotopes for *H. piliferum*. Moreover, these ridges are of secondary origin arisen for the purpose of the pastures. They were formed by cutting down the spruce forests during “colonisation on the Walachian law” in the 14th–16th centuries. The presence of the subalpine-alpine taxa could be simply explained by the close proximity (about 17 km) of Mt. Kráľova hoľa (1948 m a.s.l., the Nízke Tatry Mts), where the subalpine (with *Pinus mugo*) and alpine belts are well developed (cf. HROUDA & al., 1990); but even from this locality *H. piliferum* is not known.

HAUSSKNECHT (1864) published two localities of *H. glanduliferum* from the West Carpathians. He found this species on the southeastern slopes of Mt. Kriváň above the Zelené pleso lake during his visit to the Vysoké Tatry Mts in 1863. He paid particular attention to his discovery, because he gave a detailed morphological description of the plants and compared them with those from the Alps (“Obgleich dieses weniger behaarte Blätter zeigt als die Schweizer und Kärnthner Pflanze, so stimmen doch die übrigen Charaktere so vollkommen damit überein, dass es keinem Zweifel unterliegen kann; 2 und 3 köpfige Exemplare finden sich, wiewohl nur einzeln, auch darunter”, cf. HAUSSKNECHT, 1864: 216). Apart from this locality in the surrounding of Mt. Kriváň HAUSSKNECHT (1864: 211) noted the locality originally found by UECHTRITZ in the vicinity of the Biele pleso lake.

HAUSSKNECHT's record from Mt. Kriváň has been strongly doubted by FRITZE & ILSE (1870) who visited the same locality 5 years after HAUSSKNECHT. They did not find *H. glanduliferum*, but a very abundant population of *Pilosella alpicola* (treated by them as *Hieracium alpicola*). They revised specimen(s) collected by HAUSSKNECHT as *H. alpicola*.

PANTOCSEK (1869) reported the other data on *H. glanduliferum* from Mt. Kriváň. Interestingly, he met FRITZE and ILSE during his visit of the Vysoké Tatry Mts in summer 1868 (PANTOCSEK, 1869: 334), but it seems that they did not consult this topic.

Although HAZSLINSZKY (1864) reported *H. glanduliferum* only generally from the Tatry Mts without specifying the locality, SCHERFEL (1880)

later cited HAZSLINSZKY's records from Mt. Lomnický štít and from Mt. Jatky (Belianske Tatry Mts). REHMANN (1868) published *H. glanduliferum* from the Polish part of the Západné Tatry Mts, from the limestone in the Swistówka dolina valley. However, five years later he changed his opinion, probably influenced by the statement of FRITZE & ILSE (1870, see above). According to REHMANN (1873), the plants previously determined by him as *H. glanduliferum* were only small individuals of *H. dentatum*. Another locality of *H. glanduliferum*, namely from the Malá Studená dolina valley was given by NEILREICH (1871) on the basis of the HAYNALD collection. SCHNEIDER (1891: 333–334) evaluated all published records of *H. glanduliferum* from the Vysoké Tatry Mts (both on Polish and Slovak side) and concluded that all these data should be considered erroneous. ZAHN (1929) shared the same opinion.

The presence of *H. piliferum* in the Vysoké Tatry Mts is also given in the works of DOSTÁL (e.g. DOSTÁL, 1954; DOSTÁL, 1958; DOSTÁL, 1989; DOSTÁL & ČERVENKA, 1992).

Data based on the herbarium specimens

Hieracium glanduliferum

While examining a specimen deposited in the Herbarium of F. Schiller University in Jena (JE), collected by HAUSSKNECHT on Mt. Kriváň and determined by him as *H. glanduliferum* ("Kriwan, Centr. Carpathen, Aug. [18]63") I have found that two plants on this specimen belong unequivocally to *H. glanduliferum*. This is in contradiction with the statement by FRITZE & ILSE (1870), who identified plants collected by HAUSSKNECHT on Mt. Kriváň as *H. alpicola* ("...unter dem Namen *Hieracium glanduliferum* Hoppe als am Kriwan einheimisch angibt und von welcher uns von HAUSSKNECHT gesammelte Exemplare vorliegen."). There is no revision label by FRITZE or ILSE on the specimen from Jena, thus it is not clear, whether they saw the same specimen. It is quite possible that they saw another collection of HAUSSKNECHT from the same locality, which really belonged to *Pilosella alpicola*. This taxon [in the West Carpathians represented by the endemic subspecies *P. alpicola* subsp. *ullepitschii* (Blocki) Zahn] is very common in the surroundings of Mt. Kriváň (MRÁZ, unpubl. obs. from 2001), which is in agreement with the observation of FRITZE & ILSE (1870: 504–505). Climbing down the south-eastern slope of Mt. Kriváň towards Zelené Pleso lake, HAUSSKNECHT (1864) noted a very abundant

population of *H. glanduliferum* ("in ziemlicher Menge").

One flower from the specimen collected by HAUSSKNECHT has been examined for production of pollen. A small number of pollen grains of heterogeneous size has been observed which may indicates a tetraploid (or triploid?) ploidy level of the plant.

Hieracium piliferum

Based on herbarium specimens (see below), *Hieracium piliferum* was found for the first time in the West Carpathians by PAWŁOWSKI above the Morskie oko lake (the Polish side of the Vysoké Tatry Mts) in 1926 (ZAHN, 1929). As these plants had shorter and less abundant simple eglandular trichomes and smaller involucre than the nominal taxon, they were described as a new form² – *H. piliferum* f. *morskiense* PAWL. ex ZAHN³ (ZAHN, 1929). The second West Carpathian locality of *H. piliferum* was found by G. LENGYEL, who collected this taxon nearby the glacial lakes Päť Spišských plies on the Slovak side of the Vysoké Tatry Mts: "Tatra: Kl. Kohlbachtal [Malá Studená dolina valley] am Seewand d. Zipser Fünfseen (Lengyel). Neu für Ungarn!" (LENGYEL & ZAHN, 1934). This record did not appear in the last ZAHN's monograph (ZAHN, 1931) and probably due to this fact, the taxon was omitted in the Checklist of vascular plants of Slovakia (CHRTEK, 1998). A repeated search by J. CHRTEK and Z. SZELĄG in July 2001 in the surroundings of the locality reported by LENGYEL was unsuccessful. In 1989 SZELĄG found a new place of occurrence of *H. piliferum* in Poland, nearby the Morskie oko lake (SZELĄG, 2001).

New locality of *Hieracium piliferum* in the West Carpathians

A new recent locality of this species, the second

² A detailed comparison of the West Carpathian and Alpine populations is required to confirm or exclude the conspecificity of these populations.

³ With the exception of the name *H. piliferum* var. *schraderi* f. *morskiense*, the authorship of all newly described infraspecific taxa in this paper is given as "Pawl. et Zahn". Only in the case of *H. piliferum* f. *morskiense* the authorship is ascribed solely to PAWŁOWSKI. However, from the title of the article (ZAHN, 1929) it seems, that all the names, including f. *morskiense*, should be ascribed to ZAHN (or alternatively given as Pawł. ex Zahn), who determined specimens and prepared the whole descriptions on the base of material collected by PAWŁOWSKI.

