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The Nomenclature of the *Sempervivum montanum* Group (*Crassulaceae*) in the Carpathians.

By

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Key words: *Crassulaceae*, *Sempervivum montanum*, *Sempervivum carpathicum*, *Sempervivum carpathicum* subsp. *heterophyllum* LETZ comb. nova. – Nomenclature. – Flora of the Carpathians.

Summary

LETZ R. 2002. The nomenclature of the *Sempervivum montanum* group (*Crassulaceae*) in the Carpathians. – *Phyton* (Horn, Austria) 42 (1): 109–115. – English with German summary.

The present paper follows the already published taxonomic results of the multivariate morphometric study of the *Sempervivum montanum* group based on material from the Western Carpathians (*Phyton* 38: 323–336) and completes them nomenclaturally. The name *S. carpathicum* WETTST. ex PRODAN subsp. *carpathicum* is adopted for the upland taxon and the name *S. carpathicum* subsp. *heterophyllum* (HAZSL.) LETZ comb. nova for the lowland one. Accepting Nomenclatural Committee's rejection of the proposal to reject the name *S. carpathicum*, henceforth, this name is used in the original sense, contrary to the recent literature. The complete synonymy of both taxa and the typification of *S. carpathicum* subsp. *heterophyllum* are presented as well.

Zusammenfassung

LETZ R. 2002. Die Nomenklatur der *Sempervivum montanum*-Gruppe (*Crassulaceae*) in den Karpaten. – *Phyton* (Horn, Austria) 42 (1): 109–115. Englisch mit deutscher Zusammenfassung.

Die vorliegende Studie ergänzt die Nomenklatur zu der schon publizierten, multivariaten, morphometrischen Studie an Material der *Sempervivum montanum*-

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Gruppe aus den West-Karpaten (Phyton 38: 323–336). Der Name *S. carpathicum* WETTST. ex PRODAN subsp. *carpathicum* wird für das Hochlagen-Taxon angenommen, der Name *S. carpathicum* subsp. *heterophyllum* (HAZSL.) LETZ comb. nova für das Tieflagen-Taxon. Der Name *S. carpathicum* muss wieder im ursprünglichen Sinne verwendet werden – im Gegensatz zum Gebrauch in der gegenwärtigen Literatur – weil das Proposal, ihn zu verwerfen, von der Nomenklaturkommission abgelehnt worden ist. Die Synonymie für beide Taxa und die Neotypisierung für *S. carpathicum* subsp. *heterophyllum* werden ebenfalls gebracht.

1. Introduction

A multivariate morphometric study of the *Sempervivum montanum* group in the Western Carpathians has already confirmed the possibility of recognizing two morphologically and ecologically well differentiated taxa at the subspecific level. The proposed subspecies differ in respect of the size of rosettes, rosette leaves and the colour of the leaves (for details see LETZ & MARHOLD 1998). There are only diploid chromosome numbers ($2n = 42$) reported for both of them (cf. LETZ & al. 1999). According to the taxonomic revision of the whole group (LETZ in prep.), they are neither conspecific with the morphologically different diploid populations of the Central and Western Alps, the Pyrenees, the Appenines and Corse (*S. montanum* L. – cf. LETZ & MARHOLD 1996), nor with the tetraploid populations of the Eastern Alps (*S. stiriicum* WETTST.). For details on morphological differences see LETZ & MARHOLD 1998. Carpathian populations represent the third distinct species in the *S. montanum* group, isolated from the diploids of *S. montanum* in the Alps by a barrier of the tetraploids – *S. stiriicum*. The question of proper names for this Carpathian species and its two subspecies remained problematic and dependent on the acceptance or rejection of the proposal to reject the name *S. carpathicum* WETTST. ex PRODAN (cf. LETZ 1998). Therefore, in such a situation, Carpathian subspecies were provisionally treated under informal designations, as “lowland” and “upland” taxon (cf. LETZ & MARHOLD 1998). After the decision of the relevant Committee to reject the proposal (cf. BRUMMITT 2000: 270), the solution of the nomenclature problem is possible. Therefore, the aim of the present paper is to complete the previous taxonomic study of the Carpathian populations of the *S. montanum* group (LETZ & MARHOLD 1998) by searching the proper names. This is important in order to avoid further misunderstanding in this group.

2. Nomenclatural Survey of Taxa

A complete synonymy, including nomenclatural (\equiv) and taxonomic (\equiv) synonyms is presented for the two subspecies of *S. carpathicum*. Invalid names (–) and misidentifications (–) are referred to as well. Partial misidentifications are designed with “p. p.” following the word “auct.” The synonyms are arranged chronologically. For each name, under the heading

“Ind. loc.”, information from the protologue is cited concerning the distribution and locality of the original material. The data from the label of the type specimen are presented under the “(Neo)Typus” heading. In case a name has not been typified, the reason why the name was included in synonymy of the taxon is presented: “Ex descr.” – according to the original description, “Ex loc.” – according to stated locality. The abbreviations of herbaria, where type specimens are deposited, are in accordance with HOLMGREN & al. 1990. The articles of the CODE (“Art.”) are cited according to GREUTER & al. 2000).

Sempervivum carpathicum WETTST. ex PRODAN subsp. *carpathicum*

Sempervivum carpathicum WETTST. ex PRODAN, Fl. Român. 1: 530. 1923.

Ind. loc.: “In locuri petroase din regiunea alpină a Carpatilor”. – Neotypus: “*Sempervivum carpathicum* WETTST. Die Exemplare, nach der ich die Diagnose anfertigte. Tatra. Kl. Kohlbachthal [Vysoké Tatry Mts, Malá Studená dolina], 1500 m, 30 Jun 1899, WETTSTEIN”, WU (LETZ Taxon 47: 467, 1998).

≡ *Sempervivum montanum* subsp. *carpathicum* (WETTST. ex PRODAN) WETTST. ex A. BERGER in ENGL. & PRANTL, Nat. Pflanzenfam. (ed. 2) 18a: 422. 1930.

≡ *Sempervivum montanum* “subsp. *eumontanum*” var. *carpathicum* (WETTST. ex PRODAN [WETTST. ex BERGER, Art. 33.4]) DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.

– *Sempervivum carpathicum* WETTST. in A. KERN., Sched. fl. exs. austro-hung. 10: 25. 1913, (nom. nud.).

– *Sempervivum montanum* subsp. *carpathicum* WETTST. ex HAYEK in HEGI, Ill. Fl. Mitt.-Eur. 4/2: 554. 1922, (nom. nud.).

– *Sempervivum montanum* var. *carpathicum* (WETTST. ex PRODAN [WETTST. ex HAYEK]) PRAEGER, Account Semp. Group: 46. 1932 (comb. inval. – Art. 34.1).

= *Sempervivum montanum* f. *brachypetalum* DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.

Ind. loc.: sine. Typus ignotus. (Ex descr.)

= *Sempervivum montanum* f. *speciosum* DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.

Ind. loc.: Vysoké Tatry, Velická dolina (p. 31). Typus ignotus. (Ex loc.)

= *Sempervivum montanum* f. *pallidum* DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.

Ind. loc.: sine. Typus ignotus. (Ex loc.)

= *Sempervivum montanum* f. *congestum* DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.

Ind. loc.: “Liptovské hole: Kopa Kundracka (p. 29), Ráztoka (p. 30); Vysoké Tatry: Kriváň (p. 31); Sitno: Prenčov (p. 32)”. Typus ignotus. (Ex loc.)

- = *Sempervivum montanum* f. *stenophyllum* DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.
Ind. loc.: "Liptovské hole: Přední Salatin" (p. 30). Typus ignotus. (Ex loc.)
- *Sempervivum arachnoideum* auct. non L.: G. REUSS, Května Slov.: 164. 1853.
 - *Sempervivum montanum* auct. non L.: WAHLENB., Fl. Carpat. princ.: 143–144. 1814; PORCIUS, Enum. pl. phan. Naszód.: 21–22. 1878; B. KOTULA, Rozm. rosl. nac. Tat.: 90, 114. 1889–1890; BERDAU, Fl. Tat.: 217–218. 1890; SAGORSKI & Gus. SCHNEID., Fl. Centralkarpath. 2: 164. 1891; WIMM., Fl. Schles. (ed. 3): 468. 1857; POPOV, Očerok rast. fl. Karp.: 189. 1949; BARBAR., Vyzn. rosl. Ukr.R.S.R.: 116. 1950; BORDZ. in KLOKOV & O. D. WISSJUL., Fl. Ukr.RSR 5: 448. 1953; PAWŁOWSKA in SZAFFER & PAWL., Fl. Polska 7: 50. 1955; RĂVĂRUT in SĂVUL., Fl. R. P. Roman. 4: 77. 1956; BARBAR., Vyzn. rosl. Ukr.: 334. 1965.
 - *Sempervivum montanum* auct. (p.p.) non L.: G. REUSS, Května Slov.: 163–164. 1853; NYMAN, Syll. fl. Eur.: 258. 1855; NEILR., Aufz. Ungarn Slavon. Gefässpfl.: 226. 1866; J. A. KNAPP, Pfl. Galiz.: 269. 1872; NYMAN, Consp. fl. Eur. 2: 259. 1879; JÁV., Magyar Fl. 2: 456. 1924; DOMIN & PODP., Klíč květ. R. Českoslov.: 230. 1928; FAVARGER & ZÉSIGER in TUTIN & al., Fl. Eur. 1: 354. 1964; J. PARN. & FAVARGER in TUTIN & al., Fl. Eur. (ed. 2) 1: 427. 1993.
 - *Sempervivum montanum* subsp. *montanum* auct. non L.: PAWL., Fl. Tat.: 379. 1956; ZAHRADN. in BERTOVIÁ, Fl. Slov. 4/2: 197–199. 1985; DOSTÁL, Nová květ. ČSSR 1: 386. 1989; DOSTÁL & ČERVENKA, Vel'ký kl'úč vyšš. rast. 1: 385. 1991; W. LIPPERT in HEGI, Ill. Fl. Mitt.-Eur. (ed. 3) 4/2a: 89. 1995.
 - *Sempervivum montanum* subsp. *montanum* auct. (p. p.) non L.: JALAS & al., Atlas Fl. Eur. 12: 58. 1999.
 - *Sempervivum montanum* subsp. *debile* auct. non (SCHOTT) DOSTÁL: DOSTÁL, Květ. ČSR 2: 536. 1950.
 - *Sempervivum montanum* subsp. *heterophyllum* auct. (p. p.) non (HAZSL.) JÁV. ex SOÓ: JALAS & al., Atlas Fl. Eur. 12: 59. 1999.

Note: The binomial *Sempervivum carpathicum* first appeared as a nomen nudum on a printed label in KERNER'S Flora Exsiccata Austro-Hungarica (cf. WETTSTEIN 1913). PRODAN 1923 used this name and evidently unintentionally validated it. The name was typified in accordance with WETTSTEIN'S and PRODAN'S concept with an "upland" Carpathian specimen (cf. LETZ 1998). The usage of the names based on the name *S. carpathicum* was misapplied to the "lowland" taxon for a long time and in many works. This was the reason why the proposal to reject this name was published (LETZ 1998). In this situation, waiting for a decision of the nomenclatural committee, the taxon differentiated in the multivariate

morphometric study and corresponding with the original sense of *S. carpathicum* s. str. was treated only under informal designation as “upland” taxon (cf. LETZ & MARHOLD 1998). The Nomenclatural Committee decided to reject the proposal, because “it seems unsatisfactory to sacrifice the only species name available (*S. carpathicum*) in order to establish a particular nomenclature at subspecific level” (cf. BRUMMITT 2000: 270). Accepting Committee’s decision, henceforth, this name is used in a sense new for the recent literature, i. e. in the original sense of WETTSTEIN and PRODAN. Carpathian populations of *S. montanum* group, treated as a separate species, should be named as *S. carpathicum* WETTST. ex PRODAN. Those of them, which grow in higher altitudes (“upland” taxon) represent the nominate subspecies *S. carpathicum* WETTST. ex PRODAN subsp. *carpathicum*. For details on nomenclatural history and typification of *S. carpathicum* see LETZ 1998.

Sempervivum carpathicum subsp. *heterophyllum* (HAZSL.) LETZ, comb. nova

Basionym: *Sempervivum montanum* “B.” [unranked] *heterophyllum* HAZSL., Magyarhon ed. növ. fűv. kéz.: 173. 1872.

Ind. loc.: “a Sólyomkövön [Slanské vrchy Mts: Hermanovské skaly]”.

Neotypus (hoc loco designatus): Flora Slovaciae orientalis, Slanské vrchy, Hermanovské skaly, andezit, 1. VI. 1994, LETZ & MARHOLD (SLO).

≡ *Sempervivum montanum* * *heterophyllum* (HAZSL.) JÁV., Magyar Fl. 2: 456. 1924.

≡ *Sempervivum montanum* var. *heterophyllum* (HAZSL.) DOMIN & PODR., Klíč květ. R. Českoslov.: 231. 1928.

≡ *Sempervivum montanum* subsp. *heterophyllum* (HAZSL.) JÁV. ex Soó, Veröff. Geobot. Inst. ETH Stiftung Rübel Zürich 6: 246. 1930.

= *Sempervivum montanum* f. *majus* DOMIN in Rozpr. České Akad. Věd, Tř. 2, Vědy Mat. Přír. 42/29: 28. 1933.

Ind. loc.: “Malá Fatra, v Šutovské dolině” (p. 29); Okolí Kremnice, Nevolno (p. 33). Typus ignotus. (Ex loc.)

– *Sempervivum montanum* subsp. *carpathicum* auct. non (WETTST. ex PRODAN) WETTST. ex A. BERGER: DOSTÁL, Květ. ČSR 2: 536. 1950; ZAHRADN. in BERTOVA, Fl. Slov. 4/2: 197–199. 1985; DOSTÁL, Nová květena ČSSR 1: 386. 1989; DOSTÁL & ČERVENKA, Vel’ký kl’uč vyšš. rast. 1: 385. 1991; W. LIPPERT in HEGI, Ill. Fl. Mitt.-Eur. (ed. 3) 4/2a: 89. 1995.

– *Sempervivum montanum* auct. (p.p.) non L.: G. REUSS, Května Slavon. 163–164. 1853; NYMAN, Syll. fl. Eur.: 258. 1855; NEILR., Aufz. Ungarn Slavon. Gefässpfl. 226. 1866; NYMAN, Consp. fl. Eur. 2: 259. 1879; FAVARGER & ZÉSIGER in TUTIN & al., Fl. Eur. 1: 354. 1964; J. PARN. & FAVARGER in TUTIN & al., Fl. Eur. (ed. 2) 1: 427. 1993.

Note: A distinction of populations of the *S. montanum* group growing in lower altitudes of the West Carpathians was first noticed by JÁVORKA 1924, who adopted the name *S. montanum* * *heterophyllum* (HAZSL.) JÁV. for them. This unranked name is based on *S. montanum* "β." *heterophyllum* HAZSL. created by HAZSLINSZKY 1872 to designate anomalous plants with more-apexed leaves, which he found in the Slanské vrchy Mts. (East Slovakia) on the locality Hermanovské skaly ("Sólyomkö" in Hungarian). This locality corresponds with the occurrence of the "lowland" taxon on andesite rocks. Therefore, JÁVORKA 1924 extended the delimitation of HAZSLINSZKY's name and used it for the designation of the "lowland" taxon. The valid name on the subspecific level was published later: *S. montanum* subsp. *heterophyllum* (HAZSL.) JÁV. ex Soó 1930: 246. However, names with the epithet *heterophyllum* were often incorrectly included in the synonymy of the *S. marmoreum* group (cf. Soó & JÁVORKA 1951: 305, Soó 1966: 264, ZAHRADNÍKOVÁ 1985: 193) and were not used due to their unclear position. Instead of these names, the name *S. montanum* subsp. *carpathicum* ["*carpathicum*"] was used for the "lowland" taxon, because JÁVORKA 1924 incorrectly treated *S. carpathicum* as a synonym of *S. montanum* [unranked] *heterophyllum* (HAZSL.) JÁV. (*S. montanum* subsp. *heterophyllum* (HAZSL.) JÁV. ex Soó) and JÁVORKA's synonymy triggered the subsequent misapplication of names with the epithet *carpathicum*, starting with DOSTÁL 1950.

A type should be selected from material studied by HAZSLINSZKY prior to 1872. HAZSLINSZKY's main collections, deposited in the herbaria as cited in LANJOUW & STAFLEU 1957: 263, consist mainly of lichen specimens and it was impossible to find a relevant specimen. Therefore, the specimen collected in HAZSLINSZKY's original locality "Hermanovské skaly" (Slanské vrchy Mts, LETZ & MARHOLD, SLO) was selected as the neotype of *S. montanum* "β." *heterophyllum* HAZSL., although it has no leaves with more apices, what was HAZSLINSZKY's original intention for describing his taxon.

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