

Remarks on the genus *Soldanella* L. in the West Carpathians

Poznámky k rodu *Soldanella* L. v Západních Karpatech

Josef Niederle

Janáčkovo náměstí 2a, 662 95 Brno, niederle@math.muni.cz

Abstract

New *Soldanella* species and subspecies are described.

Je popsán jeden druh a jeden poddruh rodu *Soldanella*.

Keywords: *Soldanella*, West Carpathians, Flora Tatrensis

The aim of this note is to give a name to the commonest *Soldanella* species in the West Carpathians, which has been confused with different taxa, in particular *S. montana* Willd., *S. hungarica* Simk., *S. major* sensu Vierh., and recently even with *S. marmarossiensis* Klášť. by Zhang et al. (2001), and amend the nomenclature of the long-hairy Carpathian *Soldanella* taxa. See Pawłowska's (1963) paper for an extensive list of literature.

Soldanella tatricola J. Niederle sp. nov.

Planta perennis, mediocris vel maiuscula, in flore ad 15 cm, rarius 25 cm alta. Laminae foliorum subcoriaceae, suborbiculares, plerumque 2-3 cm latae, in locis umbrosis maiores, virides, interdum subtus purpurascente suffusae, margine remote crenatis, sinu basali angusto, glandulis sessilibus uniformibus obtectae. Petioli purpureo suffusi, non in laminam protracti. Petioli iuvenes dense rubescente glanduloso-pilosi. Pili in petiolis vetustioribus evanescentes, fulvi, stipites eorum bicellulares et tricellulares, taeniformes, in connectione cellularum distorti, 0,15-0,3 mm longi, cellulae stipitis complanatae, breves, aequilatae sed inaequilongae, longissimae usque ad 2,5× longiores quam latae. Scapi 2-8-flori, erecti, glanduloso-pilosi. Calyx glandulis brevissime stipitatis sparse obsitus. Corolla late campanulata, 10-15 mm longa, ad 1/2-3/5 incisa, cyaneo-violacea vel violacea, rarius lilacino-albescens. Filamenta rufa, minutissime glanduloso-pilosa. Antherae colore corollae, serius stramineo-flavescentes, in sicco plerumque sordide albescentes, basis earum sagittata. Appendix connectivi pro portione brevis, longitudinis thecarum 40-60% aequans, acuta vel rarius breviter bifurcata. Squamae faucis bidentatae, violaceo suffusae. Stylus exsertus. Capsula conico-cylindrica, purpurascente suffusa, dentibus apice truncatis. Semina oblonga, obtuse angulata.

Numerus chromosomatum $2n=40$.

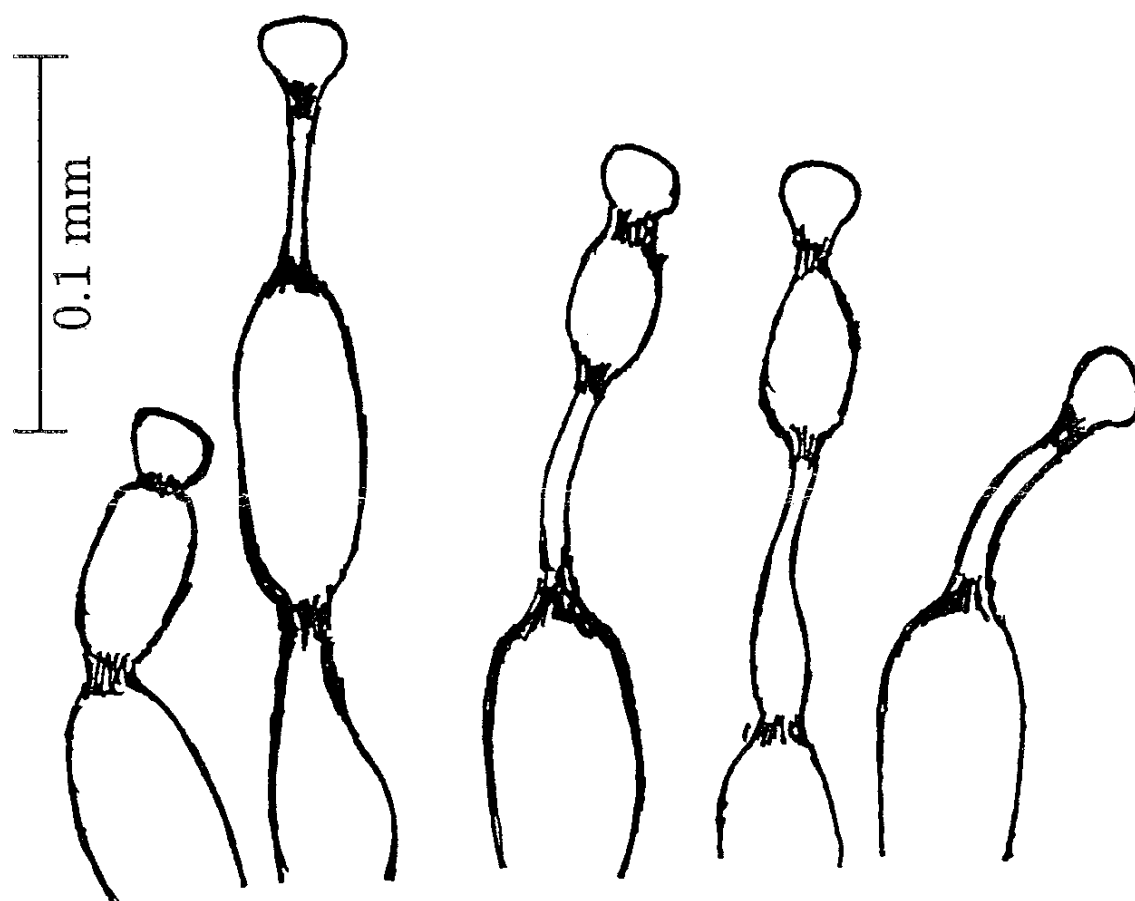
Habitat in montibus Carpati Occidentali, plerumque 1200-2000 m, secundum rivos etiam inferius.

Holotypus - hic designatus. BRNU 263848, planta sinistra.

Flora Slovenica, *Soldanella*, Vys. Tatry: Mezi Štrbským Plesem a 3 Studničkami, VII. 1934, leg. Jan Šmarda.

Chromosome number is accepted from Kress (1984). This species is copious in the West Carpathians, in particular in Vysoké Tatry and Nízke Tatry. According to Meyer (1985), its nearest ally is *S. pseudomontana* F. K. Meyer, from which it differs in shorter glandular hairs consisting of fewer cells, shorter connective appendage, and narrower hyaline margin of the leaf blade. It differs from *S. montana* Willd. and its subspecies in usually smaller and stiffer

leaf blades, in the shorter cells of glandular hairs, and in the in outline sagittate basis of anthers, which is rounded in the latter, see the figures in Pawłowska (1963). It differs from *S. marmarossiensis* Klášť. in usually larger and stiffer leaf blades, narrower leaf blade sinus, broadly campanulate corollas, which are narrowly campanulate in the latter, acute connective appendage and much longer glandular hairs, consisting of only one to two cells in the latter. It seems that Richter's (1890) description and illustration of the putative hybrid *Soldanella pusilla* Baumg. $\times$ *Soldanella montana* Willd. in reality refers to *S. marmarossiensis* Klášť. Further two species, namely *S. hungarica* Simk. and *S. stiriaca* F. K. Meyer, syn. *S. major* sensu Vierh., have also much shorter glandular hairs. Up to now, short-hairy small-flowered plants from Transsylvania have been hold for *S. hungarica* Simk. Whether or not the lectotype designated by Kress belongs to this form cannot be answered without seeing it. Finally, *S. carpatica* Vierh. is a completely different plant with darker, very stiff, coriaceous, on margins lentil-shaped leaf blades, purple petioles penetrating as a protruding narrow violet wedge into a third of the lamina, which is a feature shared with *S. alpina* L., mostly sessile glands on petioles, hairless filaments, anthers much darker than corolla, pure white interstaminal scales and sharply edged seeds. Further two taxa reported from the West Carpathians by Hroudá et Kochjarová (1989, 1990), namely the small plants from Nízke Tatry and the long-hairy plants from Pieniny, need more detailed study. Moreover, plants with purple leaf blades, purple capsules and rounded darker seeds can be found in forests in Nízke Tatry. Montane plants from Slovenské Rudohorie with larger flowers and wide capsules might represent another taxon as well.



The twisted stalks of hairs on the older petioles of *S. tatricola* consist of two and three completely flat cells.

***Soldanella montana* subsp. *gubalowkae* J. Niederle
var. *gubalowkae* J. Niederle subsp. nov. et var. nov.**

A *S. montana* subsp. *montana* appendicibus connectivi longioribus differt.

Habitat in Polonia in toto districtu montium Pogórze Gubałowskie et in parte septentrionali-occidentali montium Tatri, 680-1140 m.

Holotypus - hic designatus. BRNU 202614, planta centralis superior.

Rosliny polskie – plantae Poloniae exsiccatae, 52. *Soldanella montana* W. ± subsp. *eumontana* Lüdi, Urdzik górski, Tatry Zach. (Tatri Occid.): Jaszczurówka. Lasy jodłowo świerkowe na podłożu fliszowym, 900-950 m. In silvis abieto-piceetosis. 15. VI. 1929. Ig. S. Buladzińska, B. Pawłowski et J. Walas, det. B. P.

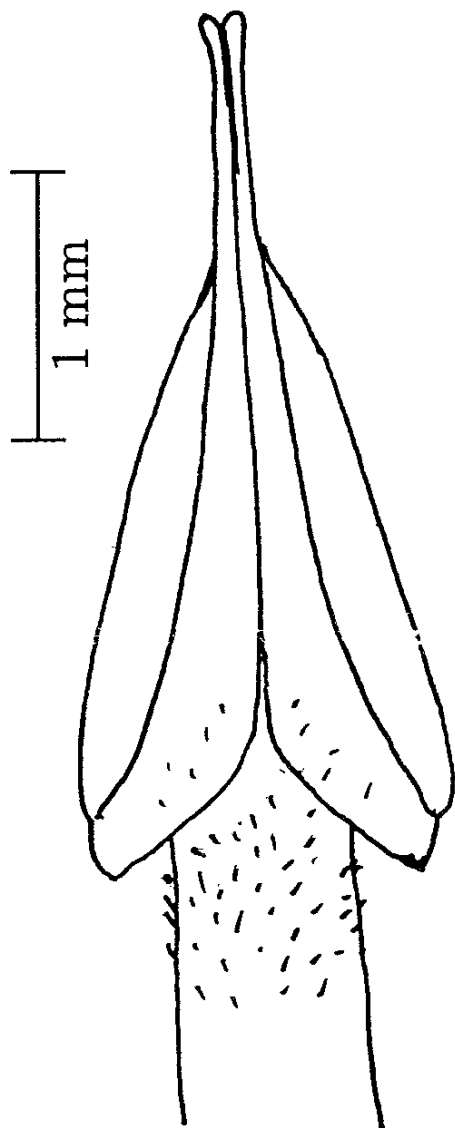
The pictures in Pawłowska's (1963) paper are sufficiently precise.

These montane plants from the vicinity of Zakopane in Poland differ considerably from the altomontane-subalpine plants from the Ukraine described as *S. montana* subsp. *faceta* by Kress (1993), which are probably identical with *S. angusta* Zhang et Kadereit nomen and possibly also with *S. pseudomontana* F. K. Meyer. Ukrainian plants have many-celled hairs which are distinctly cross-stripped,

the connections of cells being dark brown, and the leaf blade covered to a fourth with glandular hairs below. They lack the soft silky hairs consisting of long thin-walled cells characteristic of *S. montana*.

I haven't seen the long-hairy plants from Pieniny mountains reported by Pawłowska (1963) and Hrouda et Kochjarová (1989, 1990), and *S. montana* from the Łomnica river valley in the East Carpathians reported by Pawłowska (1963). Tiny plants from Nízke Tatry were recorded by Richter (1890) and Hrouda et Kochjarová (1989, 1990). The tiniest plants from Nízke Tatry I know from autopsy grow in the cushions of *Primula minima* together with equally miniaturized and thick-leaved *Homogyne alpina*. They don't seem to differ considerably from *S. tatricola* except the leaf blade diameter about 14 mm and a denser and much shorter indumentum. The higher density of glands is not taxonomically significant since it is inversely proportional to the leaf-blade area. The size and substance of *Soldanella* leaf blades is very plastic even in cultivation and can hardly be used for taxonomical purposes.

Recently, three new taxa have been named but not described by Zhang and Kadereit in Zhang et al. (2001), namely *S. angusta*, *S. oreodoxa* and *S. rugosa*. The last reported from Munții Rodnei is undoubtedly a synonym of *S. marmarossiensis* Klášť., the first one is a name for well-known plants occurring in the volcanic belt of Romanian Carpathians, which might be identical with *S. montana* subsp. *faceta* Kress and *S. pseudomontana* F. K. Meyer as well. Only *S. oreodoxa* is possibly a completely new taxon discovered using molecular methods in Munții Apuseni near Cluj.



The anthers of *S. tatricola* are sagittate in outline.

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